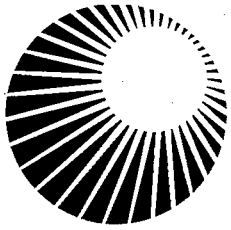

Northeast Utilities System

Millstone Nuclear Power Station

Unit 3

Y2K NRC License Exam

April 14 - 21, 2000

SAMPLE PLANS

Contents:

Admin JPM Schedule

SRO Admin Set 1		SRO Admin Set 2		RO Admin Set	
SRO1-A1.1	Monday, April 17 Classroom	SRO1-A1.1	Tuesday, April 18 Classroom	RO-A1.1	Monday, April 17 Simulator
SRO1-A1.2	Monday, April 17 Classroom	SRO1-A1.2	Tuesday, April 18 Classroom	RO-A1.2	Wednesday, April 19 Classroom
SRO1-A2	Monday, April 17 Classroom	SRO1-A2	Tuesday, April 18 Classroom	RO-A2	Wednesday, April 19 Classroom
SRO1-A3	Tuesday, April 18 Simulator	SRO1-A3	Monday, April 17 Simulator	RO-A3	Tuesday, April 18 In Plant
SRO1-A4	Thursday, April 20 Sim Scenario	SRO1-A4	Friday, April 21 Sim Scenario	RO-A4	Thursday April 20 Sim Scenario

JPM and Admin Portion of Exam

Wednesday, April 19			Thursday, April 20			Friday, April 21		
Examiner 1	Examiner 2	Examiner 3	Examiner 1	Examiner 2	Examiner 3	Examiner 1	Examiner 2	Examiner 3
0800-1230 3 IP JPMs ISRO 3,6 USRO	0800-1100 3 Admin JPMs ISRO 2, 5, 7 Classroom	0800-1400 4 Sim JPMs ISRO 1, 4 RO	0700-1200 2 Sim JPMs ISRO 3,6 USRO	0700-1200 2 Sim JPMs ISRO 2, 5, 7	0700-1130 3 IP JPMs ISRO 1, 4 RO	0700-1200 3 Sim JPMs ISRO 3,6	0700-1200 3 Sim JPMs ISRO 2, 5, 7	0700-1200 3 Sim JPMs ISRO 1, 4 RO
1230-1300 LUNCH	1100-1200 LUNCH	1100-1200 LUNCH	1200-1230 LUNCH	1200-1230 LUNCH	1 Admin JPM RO (In-Plant)	1200-1230 LUNCH	1200-1230 LUNCH	1200-1230 LUNCH
1300-1700 3 Admin JPMs ISRO 3,6 USRO Classroom	1200-1630 3 IP JPMs ISRO 2, 5, 7	1400-1430 1 Admin JPM RO Simulator	1230-1400 1 Admin JPM ISRO 3,6 USRO Simulator	1230-1400 1 Admin JPM ISRO 2, 5, 7 Simulator	1200-1300 LUNCH			1230-1330 2 Admin JPMs RO ** Classroom
		1430-1530 1 Admin JPM ISRO 1, 4 Simulator	1400-1700 2 Sim JPMs ISRO 3,6	1400-1700 2 Sim JPMs ISRO 2, 5, 7	1300-1630 3 Admin JPMs ISRO 1, 4 Classroom	**These JPMs can be done anytime during the week.		

Examiner 1 (BRIGGS): ISRO3 Brian Kelly (JPM Set 1, Admin Set 1), ISRO6 Eric Brodeur (JPM Set 1, Admin Set 1), USRO Rich Sadler (JPM Set 1, Admin Set 1).

Examiner 2 (DENNIS): ISRO2 Scott Smith (JPM Set 1, Admin Set 1), ISRO5 Dave Reed (JPM Set 1, Admin Set 1), ISRO7 Tim Butler (JPM Set 1, Admin Set 1).

Examiner 3 (FISH): ISRO1 Jeff Semancik (JPM Set , Admin Set 2), ISRO4 Mike O'Connor (JPM Set , Admin Set 2), RO1 Jeff Lupa(JPM Set , RO Admin Set).

RO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
1	When to stop a RCP on high Temperature		X				
2	Knowledge of the reasons for either the operating characteristics or limits associated with Natural Circ.	X					X
3	Recognize indications that are entry conditions into Immediate Boration				(X)	97	X
4	Operate/monitor CCP loads during a loss of CCP		X				
5	Knowledge of the interrelations between a failure of PPC system and controllers/positioners		X				X
6	Reasons for manipulating controls required to obtain desired results during a depressurization of all SGs.			X			
7	Knowledge of the annunciators/ conditions indicating signals & remedial actions associated w/ PTS event & their operational implications.			X			
8	Knowledge of the reason for the effect a loss of condenser vacuum has on steam dump operation. (Basis for C-9)	X					X
9	Implications with Natural Circ during a blackout.	X					X
10	Basis for actions contained in AOP for loss of VIAC	X					X
11	During a loss of SWP operate/monitor flowrates to components and sys & interactions among those components			X			
12	Knowledge of ops implications of fire classification by type as it applies to plant fire onsite			X			
13	Knowledge of fire in the plant procedure				X		
14	Knowledge of local auxiliary operator tasks during loss of CTMT integrity	X					X
15	Determine and interpret adherence to FR-C.2				X		X
16	Corrective action for RCS high fission product activity					95	
17	Knowledge of abnormal condition procedures as it applies to continuous rod withdrawal		X				
18	Knowledge why demand counter reset to zero during dropped rod recovery	X					X
19	Decay power (heat) as a function of time concept as it applies to a plant trip.			X			
20	Ability to operate/monitor/control Pzr level during vapor space leak.				X		
21	Monitor/operate PORV & PORV Block Valve during a SBLOCA	X					X
22	Knowledge of interrelations of Pumps and a Large Break LOCA		X				X
23	Adherence to procedures and plant limits during LOCA outside Ctmt				X		X
24	Knowledge & implications of Post Loca C/D procedure	X					
25	Knowledge & implications of remedial actions associated with ECA-1.1	X					X
	Questions 1 - 25 Subtotal	**9**	**5**	**5**	**4**	**2**	**13**

RO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
26	Annunciator/indications/remedial actions associated with SI Termination		X				X
27	Ability to operate/monitor CVCS letdown and charging during loss of CHS		X				X
28	Interrelationship between loss of SR NI & power supply including switch position	X					X
29	Monitor/operate charging flow indicator in relation to a tube leak	X					X
30	Determine/interpret steam/ feed flow trend recorder during loss of MFW	X					X
31	Operate/monitor desired results during FR-H.1 implementation				X		
32	Operate/monitor ventilation system as it applies to a rad release		X				X
33	EOP Users Guide (OP3272)		X				
34	Interrelations between PPL malfunctions and controllers & positioners	X					X
35	Definition and implications of saturation on a loss of offsite power		X				X
36	Knowing effects on plant ops during a loss of instrument air of isolating certain equipment	X					
37	Physical connection/cause effect on CRDM	X					X
38	Malf and effect on location & interpretation of RTBs	X					X
39	Manually operate/monitor determination of SDM		X				X
40	Physical connection/cause effect on RCS				X		
41	Loss of RCPs will have effects on S/G				X		X
42	Bus power supplies for charging pumps	X					X
43	Design feature/interlock for oxygen control of RCS		X				X
44	Malf and effect on flowpath for emergency boration	X					
45	Loss/malf of ESFAS on RCS		X				
46	Predict the impact of a loss of instrument bus on ESFAS		X				X
47	Design feature/interlock for Auto rod motion on NIS signal				X		X
48	Predict/monitor changes w/NIS power indication			X			X
49	Purpose/function of major NIS system components/controls				X		
50	Malf/loss of sensors/detectors and effect on ITM				X		X
	Questions 26 - 50 Subtotal	**9**	**9**	**1**	**6**	**0**	**18**

RO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
51	Design feature/interlock for Auto CTMT isolation				X		
52	Predict/mitigate the impact of a loss of CCS Pump on CTMT	X					X
53	Cause/effect of loss of Cond pumps on sys ops.	X					X
54	Predict/monitor parameters assoc. w/ MFP speed		X				
55	Ops implications of AFW flow & RCS Ht Xfer concept				X		X
56	Physical connection/cause effect of AFW on main steam sys.		X				
57	Monitor auto ops of LWS to include auto isolation	X					
58	Ops implications of H2 to O2 flammability concept	X					
59	Effect of a loss of ARM on Fuel handling operations		X				
60	Design feature/interlock for filling & draining the RCS	X					X
61	Knowledge of bus power supplies to ECCS Pumps		X				
62	Monitor/predict effect of H/U or C/D on PZR pressure				X		X
63	Malf of Pzr LCS effect on CVCS		X				X
64	Manually operate/monitor RPS channel defeat controls			X			
65	Predict the impact of malf or ops of dropped rod on RPIs			X			X
66	Predict controller response to a non nuclear instrument detector failure		X				X
67	Monitor auto ops of auto cooling water supply to RSS		X				
68	Design feature/interlocks that provide for auto CTMT purge isolation.				X		
69	Design feature that provides for adequate SDM	X					X
70	Ability to evaluate plant performance & make ops judgements based on SG operating characteristics		X				X
71	Ops implications of the concept concerning the effects of steam removal on reactivity				X		X
72	Relationship between CAR and Plant Rad Monitoring				X		X
73	Ability to predict the impact of exceeding current limitations on AC distribution system				X		X
74	Effect a loss of DC electrical will have on EDG	X					
75	Design/interlock for automatic load sequencer: safeguards		X				X
	Questions 51 - 75 Subtotal	**7**	**9**	**2**	**7**	**0**	**14**

RO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
76	Perform procedures related to process radiation monitoring to reduce excessive levels of radiation				X		X
77	Automatic signal and the effect on circ water				X		
78	Monitor/operate crosstie valve ops with IAS				X		X
79	Hazards to people from fire type and method of protection	X					
80	Physical connections or cause/effect relationship between RHR & CTMT Spray		X				X
81	Predict/monitor changes in CCP due to flowrate change		X				
82	Relationship between iodine removal and CSS components			X			
83	Predict changes in HRPS controls with H2 concentration		X				
84	Design feature/interlock associated with fuel movement			X			
85	Monitor auto ops of SWS emergency heat loads		X				X
86	SBO Diesel design / interlocks		X				
87	Predict the impact of a phase "A"/"B" on CTMT system ops	X					
88	Ability to perform specific system & integrated plant procedures	X					
89	Ability to locate/operate components including local control					95	
90	Manipulate the console controls as rqrd to operate between S/D & designated power levels		X				X
91	Knowledge of the process for controlling temporary changes	X					
92	Knowledge of LCO and safety limits	X					
93	Ability to track LCOs	X					
94	Knowledge of 10CFR20 and related facility rad control requirements	X					X
95	Knowledge of radiation exposure limits & contamination control including permissible levels in excess of those authorized	X					X
96	Knowledge of the organization of the OP network for Ops, AOPs & EOPs		X				X
97	Knowledge of symptom based EOP mitigation strategies		X				X
98	Knowledge of Loss of Cooling Water procedures	X					
99	Knowledge of PEO actions during EOPs to include geography & sys implications.			X			
100	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual	X					X
	Questions 1 - 25 Subtotal	**9**	**5**	**5**	**4**	**2**	**13**
	Questions 26 - 50 Subtotal	**9**	**9**	**1**	**6**	**0**	**18**
	Questions 51 - 75 Subtotal	**7**	**9**	**2**	**7**	**0**	**14**
	Questions 76 - 100 Subtotal	**10**	**8**	**3**	**3**	**1**	**10**
	Total	**35**	**31**	**11**	**20**	**3**	**55**
#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A

RO Written Exam Sample Plan Change

(as discussed briefly with NRC during validation week)

Tier 2, Group 2, 062.A2.11 changed to 062.A2.09. Change was made since K/A dealt with power supplies, and 2 similar K/As were already randomly selected.

Facility: Millstone Unit 3 Date of Exam: Week of **04/14-21/2000** Exam Level: **RO**

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	3	1	4				2	3			3	16
	2	4	2	1				6	2			2	17
	3	1	1	1				0	0			0	3
	Tier Totals	8	4	6				8	5			5	36
2. Plant Systems	1	3	1	3	3	2	3	2	3	1	1	1	23
	2	1	1	2	4	2	0	1	4	1	2	2	20
	3	2	0	0	2	0	0	2	1	1	0	0	8
	Tier Totals	6	2	5	9	4	3	5	8	3	3	3	51

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	
	2	4	2	5	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 points 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 are related 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.

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1						Form ES-401-4	
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pts
000005 Inoperable/Stuck Control Rod / I									
000015/17 RCP Malfunctions / IV					08		When to stop a RCP on high Temperature	3.4	1
~~BW/E09; CE/A13~~; W/E09&E10 Natural Circ. / IV			01				Knowledge of the reasons for either the operating characteristics or limits associated with Natural Circ.	3.3	1
000024 Emergency Boration / I						2.4.4	Recognize indications that are entry conditions into EOP/AOPs	4.0	1
000026 Loss of Component Cooling Water / VIII				02			Operate/monitor CCP loads during a loss of CCP	3.2	1
000027 Pressurizer Pressure Control System Malfunction / III		03					Knowledge of the interrelations between a failure of PPC system and controllers/positioners	2.6	1
~~000040~~ ~~(BW/E05; CE/E05;~~ W/E12) Steam Line Rupture - Excessive Heat Transfer / IV			03				Reasons for manipulating controls required to obtain desired results during a depressurization of all SGs.	3.5	1
~~CE/A11;~~ W/E08 RCS Overcooling - PTS / IV	03						Knowledge of the annunciators/ conditions indicating signals & remedial actions associated w/ PTS event & their operational implications.	3.5	1
000051 Loss of Condenser Vacuum / IV			01				Knowledge of the reason for the effect a loss of condenser vacuum has on steam dump operation. (Basis for C-9)	2.8*	1
000055 Station Blackout / VI	02						Implications with Natural Circ during a blackout.	4.1	1
000057 Loss of Vital AC Elec. Inst. Bus / VI			01				Basis for actions contained in AOP for loss of VIAC	4.1	1
000062 Loss of Nuclear Service Water / IV				07			During a loss of SWP operate/monitor flowrates to components and sys & interactions among those components	2.9	1
000067 Plant Fire On-Site / IX	01						Knowledge of ops implications of fire classification by type as it applies to plant fire onsite	2.9	1
000068 ~~(BW/A06)~~ Control Room Evac. / VIII						2.4.27	Knowledge of fire in the plant procedure	3.0	1
000069 ~~(W/E14)~~ Loss of CTMT Integrity / V						2.4.35	Knowledge of local auxiliary operator tasks, including system implications	3.3	1
~~000074~~ (W/E06&~~E07~~) Inad. Core Cooling / IV					02		Determine and interpret adherence to FR-C.2	3.5	1
~~BW/E03 Inadequate Subcooling Margin / IV~~ **N/A MP3**									
000076 High Reactor Coolant Activity / IX					02		Corrective action for RCS High Fission product Activity	2.8	1
~~BW/A02&A03 Loss of NNI X/Y / VII~~ **N/A MP3**									
K/A Category Totals:	3	1	4	2	3	3	Group Point Total:		16

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2						Form ES-401-4		
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pts
000001 Continuous Rod Withdrawal / I						2.4.11	Knowledge of abnormal condition procedures as it applies to	3.4	1
000003 Dropped Control Rod / I			06				Knowledge why demand counter reset to zero during dropped rod recovery	2.7*	1
000007 (~~BW/E02&E10; CE/E02~~) Reactor Trip - Stabilization - Recovery / I	05						Decay power (heat) as a function of time concept as it applies to a plant trip.	3.3	1
~~BW/A01 Plant Runback / I~~ **N/A MP3**									
~~BW/A04 Turbine Trip / IV~~ **N/A MP3**									
000008 Pressurizer Vapor Space Accident / III				06			Ability to operate/monitor/control Pzr level during vapor space leak.	3.6	1
000009 Small Break LOCA / III				15			Monitor/operate PORV & PORV Block Valve during a SBLOCA	3.9	1
000011 Large Break LOCA / III		02					Knowledge of interrelations of Pumps and a Large Break LOCA	2.6*	1
W/E04 LOCA Outside Containment / III					02		Adherence to procedures and plant limits during LOCA outside Ctmt	3.6	1
~~BW/E08~~; W/E03 LOCA Cooldown/Depress. / IV	02						Knowledge & implications of Post Loca C/D procedure	3.6	1
W/E11 Loss of Emergency Coolant Recirc. / IV	03						Knowledge & implications of remedial actions associated with ECA-1.1	3.6	1
W/E02 SI Termination / III	03						Annunciator/indications/remedial actions associated with SI Termination	3.5	1
000022 Loss of Reactor Coolant Makeup / II				01			Ability to operate/monitor CVCS letdown and charging during loss of CHS	3.4	1
000025 Loss of RHR System / IV									
000029 Anticipated Transient w/o Scram / I									
000032 Loss of Source Range NI / VII		01					Interrelationship between loss of SR NI & power supply including switch position	2.7	1
000033 Loss of Intermediate Range NI / VII									
000037 Steam Generator Tube Leak / III				08			Monitor/operate charging flow indicator in relation to a tube leak	3.3	1
000038 Steam Generator Tube Rupture / III									
000054 ~~(CE/E06)~~ Loss of Main Feedwater / IV					08		Determine/interpret steam/ feed flow trend recorder during loss of MFW	2.9	1
~~BW/E04~~; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / IV				03			Operate/monitor desired results during FR-H.1 implementation	3.8	1
000058 Loss of DC Power / VI									
000059 Accidental Liquid Rad Waste Rel. / IX									
000060 Accidental Gaseous Radwaste Rel. / IX				02			Operate/monitor ventilation system as it applies to a Rad release	2.9	1
000061 ARM System Alarms / VII						2.3.11	Ability to control radiation releases	2.7	1
W/E16 High Containment Radiation / IX									
~~CE/E09 Functional Recovery~~ **N/A MP3**									
K/A Category Point Totals:	4	2	1	6	2	2	Group Point Total:		17

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3						Form ES-401-4		
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pts
000028 Pressurizer Level Malfunction / II		03					Interrelations between PPL malfunctions and controllers & positioners	2.6	1
000036 ~~(BW/A08)~~ Fuel Handling Accident / VIII									
000056 Loss of Off-site Power / VI	04						Definition and implications of saturation on a loss of offsite power	3.1	1
000065 Loss of Instrument Air / VIII			03				Knowing effects on plant ops of isolating certain equipment from inst air	2.9	1
~~BW/E13&E14 EOP Rules and Enclosures~~							N/A MP3		
~~BW/A05 Emergency Diesel Actuation / VI~~							N/A MP3		
~~BW/A07 Flooding / VIII~~							N/A MP3		
~~CE/A16 Excess RCS Leakage / II~~							N/A MP3		
W/E13 Steam Generator Over-pressure / IV									
W/E15 Containment Flooding / V									
K/A Category Point Totals:	1	1	1	0	0	0	Group Point Total:		3

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 1											Form ES-401-4		
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)	Imp	Pt
001 Control Rod Drive	03											Physical connection/cause effect on CRDM	3.4	1
001 Control Rod Drive						14						Malf and effect on location & interpretation of RTBs	4.0	1
001 Control Rod Drive										11		Manually operate/monitor determination of SDM	3.5	1
003 Reactor Coolant Pump	10											Physical connection/cause effect on RCS	3.0	1
003 Reactor Coolant Pump			02									Loss of RCPs will have effects on S/G	3.5	1
004 Chemical and Volume Control		03										Bus power supplies for charging pumps	3.3	1
004 Chemical and Volume Control				01								Design feature/interlock for oxygen control of RCS	2.8	1
004 Chemical and Volume Control						17						Malf and effect on flowpath for emergency boration	4.4	1
013 Engineered Safety Features Actuation			02									Loss/malf of ESFAS on RCS	4.3	1
013 Engineered Safety Features Actuation								04				Predict the impact of a loss of instrument bus on ESFAS	3.6	1
015 Nuclear Instrumentation				08								Design feature/interlock for Auto rod motion on signal	3.4	1
015 Nuclear Instrumentation							03					Predict/monitor changes w/NIS power indication	3.7	1
015 Nuclear Instrumentation											2.1.28	Purpose/function of major sys components/controls	3.2	1
017 In-core Temperature Monitor						01						Malf/loss of sensors/detectors and effect on ITM	2.7	1
022 Containment Cooling				03								Design feature/interlock for Auto CTMT isolation	3.6*	1
022 Containment Cooling								06				Predict/mitigate the impact of a loss of CCS Pump on CTMT	2.8	1
~~025 Ice Condenser~~ **N/A MP3**														
056 Condensate								04				Cause/effect of loss of Cond pumps on sys ops.	2.6	1
059 Main Feedwater							07					Predict/monitor parameters assoc. w/ MFP speed	2.5*	1
061 Auxiliary/Emergency Feedwater					01							Ops implications of AFW flow & RCS Ht Xfer concept	3.6	1
061 Auxiliary/Emergency Feedwater	03											Physical connection/cause effect on main steam sys.	3.5	1
068 Liquid Radwaste									02			Monitor auto ops of LWS to include auto isolation	3.6	1
071 Waste Gas Disposal					04							Ops implications of H2 to O2 flammability concept	2.5	1
072 Area Radiation Monitoring			02									Effect of a loss of ARM on Fuel handling operations	3.1	1
K/A Category Point Totals:	3	1	3	3	2	3	2	3	1	1	1	Group Point Total:		23

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 2											Form ES-401-4		
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)	Imp. RO	Pts
002 Reactor Coolant				01								Design feature/interlock for filling & draining the RCS	2.7	1
006 Emergency Core Cooling		01										Knowledge of bus power supplies to ECCS Pumps	3.6	1
010 Pressurizer Pressure Control							06					Monitor/predict effect of H/U or C/D on pressure	3.1	1
011 Pressurizer Level Control			01									Malf of Pzr LCS effect on CVCS	3.2	1
012 Reactor Protection										05		Manually operate/monitor channel defeat controls	3.6	1
014 Rod Position Indication								03				Predict the impact of malf or ops of dropped rod on RPIs	3.6	1
016 Non-nuclear Instrumentation								01				Predict controller response to a detector failure	3.0*	1
026 Containment Spray									02			Monitor auto ops of auto cooling water supply to RSS	3.9*	1
029 Containment Purge				03								Design feature/interlocks that provide for auto purge isolation.	3.2*	1
033 Spent Fuel Pool Cooling				05								Design feature that provides for adequate SDM	3.1	1
035 Steam Generator											2.1.7	Ability to evaluate plant performance & make ops judgements based on operating characteristics	3.7	1
039 Main and Reheat Steam					08							Ops implications of the concept concerning the effects of steam removal on reactivity	3.6	1
055 Condenser Air Removal	06											Relationship between CAR and Plant Rad Monitoring	2.6	1
062 AC Electrical Distribution								09				Ability to predict the impact of exceeding current limitations	2.7	1
063 DC Electrical Distribution			01									Effect a loss of DC electrical will have on EDG	3.7*	1
064 Emergency Diesel Generator				11								Design/interlock for automatic load sequencer: safeguards	3.5	1
073 Process Radiation Monitoring											2.3.10	Perform procedures to reduce excessive levels of radiation	2.9	1
075 Circulating Water								03				Automatic signal and the effect on circ water	2.5	1
079 Station Air										01		Monitor/operate crosstie valve ops with IAS	2.7	1
086 Fire Protection					04							Hazards to people from fire type and method of protection	2.9	1
K/A Category Point Totals:	1	1	2	4	2	0	1	4	1	2	2	Group Point Total:		20

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 3											Form ES-401-4		
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)	Imp	Pts
005 Residual Heat Removal	10											Physical connections or cause/effect relationship between RHR & CTMT Spray	3.2	1
007 Pressurizer Relief/Quench Tank														
008 Component Cooling Water							01					Predict/monitor changes in CCP due to flowrate change	2.8	1
027 Containment Iodine Removal	01											Relationship between iodine removal and CSS cmpnts	3.4*	1
028 H_2 Recombiner and Purge Control							01					Predict changes in HRPS controls with H2 concentration	3.4	1
034 Fuel Handling Equipment				02								Design feature/interlock associated with fuel movement	2.5	1
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator														
076 Service Water									02			Monitor auto ops of SWS emergency heat loads	3.7	1
078 Instrument Air				03								Design/interlock that provides for securing air comp on high temp	3.1*	1
103 Containment								03				Predict the impact of a phase "A"/"B" on CTMT system ops	3.5*	1
K/A Category Point Totals:	2	0	0	2	0	0	2	1	1	0	0	Group Point Total:		8

Plant Specific Priorities			
System/topic	**Recommended replacement For...**	**Reason**	**Pts**
Station Blackout Diesel Design/interlock	T2Grp3: 078 Instrument Air K4.03	SBO Diesel design/ops is vital to core covery per NUMARC-87-00	1
EOP Users Guide (OP3272)	T1Grp2: 061 Area Radiation Monitor GEN.2.3.11	MP3 has specific rules of usage & Millstone 3 Area Rad Monitor actions are minimal (None for RO and SRO refers to EPIPs only) with no auto actions tied to area radiation monitors. Question will be RO specific.	1
Plant Specific Priority Test total; (Limit 10)			2

Facility:		Date of Exam:		Exam Level: **RO**
Category	K/A #	Topic	Imp.	Pts
Conduct of Operations	2.1.23	Ability to perform specific system & integrated plant procedures	3.9/4.0	1
	2.1.30	Ability to locate/operate components including local control	3.9/3.4	1
	Total			**2**
Equipment Control	2.2.2	Manipulate the console controls as rqrd to operate between S/D & designated power levels	4.0/3.5	1
	2.2.11	Knowledge of the process for controlling temporary changes	2.5/3.4*	1
	2.2.22	Knowledge of LCO and safety limits	3.4/4.1	1
	2.2.23	Ability to track LCOs	2.6/3.8	1
	Total			**4**
Radiation Control	2.3.1	Knowledge of 10CFR20 and related facility rad control requirements	2.6/3.0	1
	2.3.4	Knowledge of radiation exposure limits & contamination control including permissible levels in excess of those authorized	2.5/3.1	1
	Total			**2**
Emergency Procedures and Plan	2.4.5	Knowledge of the organization of the OP network for Ops, AOPs & EOPs	2.9/3.6	1
	2.4.6	Knowledge of symptom based EOP mitigation strategy	3.1/4.0	1
	2.4.50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual	3.3/3.3	1
	2.4.24	Knowledge of Loss of Cooling Water procedures	3.3/3.7	1
	2.4.35	Knowledge of PEO actions during EOPs to include geography & sys implications.	3.3/3.5	1
	Total			**5**
Tier 1 Target Point Total (RO/SRO)				**13**

SRO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
1	When to stop a RCP on high Temperature		X				
2	Knowledge of the reasons for either the operating characteristics or limits associated with Natural Circ.	X					X
3	Recognize indications that are entry conditions into Immediate Boration				(X)	97	X
4	Operate/monitor CCP loads during a loss of CCP		X				
5	Knowledge of the interrelations between a failure of PPC system and controllers/positioners		X				X
6	Reasons for manipulating controls required to obtain desired results during a depressurization of all SGs.			X			
7	Knowledge of the EOP concepts associated w/ PTS event & their operational implications			X			X
8	Knowledge of the reason for the effect a loss of condenser vacuum has on steam dump operation. (Basis for C-9)	X					X
9	Implications with Natural Circ during a blackout.	X					X
10	Basis for actions contained in AOP for loss of VIAC	X					X
11	During a loss of SWP operate/monitor flowrates to components and sys & interactions among those components			X			
12	Knowledge of ops implications of fire classification by type as it applies to plant fire onsite			X			
13	Knowledge of fire in the plant procedure				X		
14	Knowledge of local auxiliary operator tasks during loss of CTMT integrity	X					X
15	Determine and interpret adherence to FR-C.2				X		X
16	Corrective action for RCS high fission product activity					95	
17	Knowledge of abnormal condition procedures as it applies to continuous rod withdrawal		X				
18	Knowledge why demand counter reset to zero during dropped rod recovery	X					X
19	Decay power (heat) as a function of time concept as it applies to a plant trip.			X			
20	Ability to operate/monitor/control Pzr level during vapor space leak.				X		
21	Monitor/operate PORV & PORV Block Valve during a SBLOCA	X					X
22	Knowledge of interrelations of Pumps and a Large Break LOCA		X				X
23	Adherence to procedures and plant limits during LOCA outside Ctmt				X		X
24	Knowledge & implications of Post Loca C/D procedure	X					
25	Knowledge & implications of remedial actions associated with ECA-1.1	X					X
	Questions 1 - 25 Subtotal	**9**	**5**	**5**	**4**	**2**	**14**

SRO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
26	Annunciator/indications/remedial actions associated with SI Termination		X				X
27	Ability to operate/monitor CVCS letdown and charging during loss of CHS		X				X
28	Interrelationship between loss of SR NI & power supply including switch position	X					X
29	Ability to determine actions if more than one rod is stuck		X				X
30	Determine/interpret steam/ feed flow trend recorder during loss of MFW	X					X
31	Operate/monitor desired results during FR-H.1 implementation				X		
32	Operate/monitor ventilation system as it applies to a Rad release		X				X
33	EOP Users Guide (OP3272)		X				X
34	Ops implication of the concept behind Rx nucleonics & thermo hydraulic behavior during ATWS				X		
35	Definition and implications of saturation on a loss of offsite power		X				X
36	Ops implications of calculations for offsite dose release due to accidental liquid release	X					X
37	Knowledge of the parameters & logic used to assess the CTMT CSF		X				X
38	Malf and effect on location & interpretation of RTBs	X					X
39	Ops implications of potential consequences of uncovering the core				X		X
40	Physical connection/cause effect on RCS				X		
41	Determine & interpret T.S. limit if both IR detectors have failed		X				X
42	Bus power supplies for charging pumps	X					X
43	Knowledge of reasons for EOP actions on a Tube Rupture				(X)	95	
44	Determine & Interpret DC loads lost - impact on ability to operate/monitor plant systems		X				X
45	Adherence to High CTMT Radiation procedures and operations within limits	X					
46	Predict the impact of a loss of instrument bus on ESFAS		X				X
47	Ability to 0perate/monitor fuel handling equipment	X					
48	Knowledge of reasons for EOP responses during SG overpressure	X					
49	Manually operate/monitor determination of SDM			X			X
50	Malf/loss of sensors/detectors and effect on ITM				X		X
	Questions 26 - 50 Subtotal	**8**	**10**	**1**	**5**	**1**	**18**

SRO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
51	Design feature/interlock for Auto CTMT isolation				X		
52	Predict/mitigate the impact of a loss of CCS Pump on CTMT	X					X
53	Cause/effect of loss of Cond pumps on sys ops.	X					X
54	Predict/monitor parameters assoc. w/ MFP speed		X				
55	Ops implications of AFW flow & RCS Ht Xfer concept				X		X
56	Ability to apply Tech Specs For ESFAS	X					X
57	Monitor auto ops of LWS to include auto isolation	X					
58	Ops implications of H2 to O2 flammability concept	X					
59	Effect of a loss of ARM on Fuel handling operations		X				X
60	Design feature/interlock for filling & draining the RCS	X					X
61	Knowledge of bus power supplies to ECCS Pumps		X				
62	Predict/monitor changes associated w/ NIS calibration due to heat balance	X					
63	Malf of Pzr LCS effect on CVCS		X				X
64	Manually operate/monitor RPS channel defeat controls			X			
65	Predict the impact of malf or ops of dropped rod on RPIs			X			X
66	Predict controller response to a non nuclear instrument detector failure		X				X
67	Monitor auto ops of auto cooling water supply to RSS		X				
68	Design feature/interlocks that provide for auto CTMT purge isolation.				X		
69	Design feature that provides for adequate SDM	X					X
70	Ability to evaluate plant performance & make ops judgements based on SG operating characteristics		X				X
71	Ops implications of the concept concerning the effects of steam removal on reactivity				X		X
72	Ability to recognize PZR pressure control indications for sys ops which are entries into T.S.		X				X
73	Ability to predict the impact of exceeding current limitations on AC distribution system				X		X
74	Effect a loss of DC electrical will have on EDG	X					
75	Design/interlock for automatic load sequencer: safeguards		X				X
	Questions 51 - 75 Subtotal	**9**	**9**	**2**	**5**	**0**	**15**

SRO Question Matrix

#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A
76	Perform procedures related to process radiation monitoring to reduce excessive levels of radiation				X		X
77	Cause/effect relationship between service water and EDG	X					
78	Knowledge of operator responsibilities during all modes of operation		X				X
79	Hazards to people from fire type and method of protection	X					
80	Physical connections or cause/effect relationship between RHR & CTMT Spray		X				X
81	Predict/monitor changes in CCP due to flowrate change		X				
82	Knowledge for determining if the margin to safety as defined in Tech Spec Basis is reduced by a proposed change test or experiment	X					
83	Predict changes in HRPS controls with H2 concentration		X				
84	Design feature/interlock associated with fuel movement			X			
85	Ability to analyze the effects of maintenance activities on LCO status	X					X
86	SBO Diesel design / interlocks		X				
87	Predict the impact of a phase "A"/"B" on CTMT system ops	X					
88	Ability to perform specific system & integrated plant procedures	X					
89	Ability to locate/operate components including local control					95	
90	Knowledge of Refueling Admin requirements			X			
91	Knowledge of the process for controlling temporary changes	X					
92	Knowledge of LCO and safety limits		X				
93	Ability to track LCOs	X					
94	Knowledge of 10CFR20 and related facility rad control requirements	X					X
95	Knowledge of radiation exposure limits & contamination control including permissible levels in excess of those authorized	X					X
96	Knowledge of the organization of the OP network for Ops, AOPs & EOPs		X				X
97	Knowledge of symptom based EOP mitigation strategies		X				X
98	Knowledge of specific bases for EOPs	X					X
99	Knowledge of Loss of Cooling Water procedures			X			
100	Knowledge of EAL Thresholds & Classifications		X				X
	Questions 1 - 25 Subtotal	**9**	**5**	**5**	**4**	**2**	**14**
	Questions 26 - 50 Subtotal	**8**	**10**	**1**	**5**	**1**	**18**
	Questions 51 - 75 Subtotal	**9**	**9**	**2**	**5**	**0**	**15**
	Questions 76 - 100 Subtotal	**11**	**9**	**3**	**1**	**1**	**10**
	Total	**37**	**33**	**11**	**15**	**4**	**57**
#	Topic	New	Mod	Bank Not Seen	Bank Seen	MP3 NRC Exam	C/A

Facility: Millstone Unit 3 Date of Exam: Week of **04/14-21/2000** Exam Level: **SRO**

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	7	1	5				2	5			4	24
	2	3	2	1				5	4			1	16
	3	1	0	1				1	0			0	3
	Tier Totals	11	3	7				8	9			5	43
2. Plant Systems	1	2	1	2	1	1	2	2	4	2	1	1	19
	2	0	1	1	5	2	0	1	3	0	1	3	17
	3	2	0	0	1	0	0	1	0	0	0	0	4
	Tier Totals	4	2	3	7	3	2	4	7	2	2	4	40

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	
	3	6	2	6	17

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 points 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 are related 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.

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1						Form ES-401-3		
E/APE 1 / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pt s
000001 Continuous Rod Withdrawal / I						2.4.11	Knowledge of abnormal condition procedures as it applies	3.6	1
000003 Dropped Control Rod / I			06				Knowledge why demand counter reset to zero during dropped rod recovery	3.0	1
000005 Inoperable/Stuck Control Rod / I					03		Interpret/determine Rqrd actions if more than 1 rod is stuck/inoperable	4.4	1
000011 Large Break LOCA / III		02					Knowledge of interrelations of Pumps and a Large Break LOCA	2.7*	1
W/E04 LOCA Outside Containment / III					02		Adherence to plant procedures and plant limitations during LOCA outside Ctmt	4.2	1
W/~~E01~~/**E02** SI Termination / III	03						Annunciator/indications/remedial actions associated with SI Termination	3.8	1
000015/17 RCP Malfunctions / IV					08		When to secure a RCP on high bearing temperature	3.5	1
~~BW/E09; CE/A13;~~ W/E09&E10 Natural Circ. / IV			01				Knowledge of the reasons for either the operating characteristics or limits associated with Natural Circ.	3.6	1
000024 Emergency Boration / I						2.4.4	Recognize indications that are entry conditions into EOP/AOPs	4.0	1
000026 Loss of Component Cooling Water / VIII				02			Operate/monitor CCP loads during a loss of CCP	3.3	1
000029 Anticipated Transient w/o Scram / I	01						Ops implication of the concept behind Rx nucleonics & thermo hydraulic behavior	3.1	1
000040 (~~BW/E05; CE/E05~~; W/E12) Steam Line Rupture - Excessive Heat Transfer / IV			03				Reasons for manipulating controls required to obtain desired results during a depressurization of all SGs.	3.7	1
~~CE/A11~~; W/E08 RCS Overcooling - PTS / IV	02						Knowledge of the EOP concepts associated w/ PTS event & their operational implications	4.0	1
000051 Loss of Condenser Vacuum / IV			01				Basis for C-9 setpoint	3.1*	1
000055 Station Blackout / VI	02						Operational implications associated with Natural circ during a blackout.	4.4	1
000057 Loss of Vital AC Elec. Inst. Bus / VI			01				Basis for actions contained in AOP for loss of VIAC	4.4	1
000059 Accidental Liquid Rad Waste Rel. / IX	05						Ops implications of calculations for offsite dose release due to accidental release	3.6	1
000062 Loss of Nuclear Service Water / IV				07			Operate/monitor flowrates to components and sys & interactions among those components	3.0	1
000067 Plant Fire On-Site / IX	01						Knowledge of ops implications of fire classification by type as it applies	2.9	1
000068 (~~BW/A06~~) Control Room Evac. / VIII						2.4.27	Knowledge of fire in the plant procedure	3.5	1
000069 (W/E14) Loss of CTMT Integrity / V						2.4.21	Knowledge of the parameters & logic used to assess CSF	4.3	1
~~000074~~ (W/E06&~~E07~~) Inad. Core Cooling / IV					02		Determine and interpret adherence to FR-C.2	4.1	1
~~000074~~ (W/E06&~~E07~~) Inad. Core Cooling / IV	02						Ops implications of potential consequences of uncovering the core	4.8	1
000076 High Reactor Coolant Activity / IX					02		Corrective action for RCS High Fission product Activity	3.4	1
K/A Category Totals:	7	1	5	2	5	4	Group Point Total:		**24**

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2							Form ES-401-3	
E/APE 1 / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pts
000007 9 ~~(BW/E02&E10; CE/E02)~~ Reactor Trip - Stabilization - Recovery / I	05						Decay power (heat) as a function of time concept as it applies to a plant trip.	3.8	1
~~BW/A01 Plant Runback / I~~ **N/A MP3**									
~~BW/A04 Turbine Trip / IV~~ **N/A MP3**									
000008 Pressurizer Vapor Space Accident / III				06			Ability to operate/monitor/control Pzr level during vapor space leak.	3.6	1
000009 Small Break LOCA / III				15			Monitor/operate PORV & PORV Block Valve during a SBLOCA	4.1	1
~~BW/E08~~; W/E03 LOCA Cooldown - Depress. / IV	02						Knowledge & implications of Post Loca C/D procedure	4.1	1
W/E11 Loss of Emergency Coolant Recirc. / IV	03						Knowledge & implications of remedial actions associated with ECA-1.1	4.0	1
000022 Loss of Reactor Coolant Makeup / II				01			Ability to operate/monitor CVCS letdown and charging during loss of CHS	3.3	1
000025 Loss of RHR System / IV									
000027 Pressurizer Pressure Control System Malfunction / III		03					Knowledge of the interrelations between a failure of PPC system and controllers/positioners	2.8	1
000032 Loss of Source Range NI / VII		01					Interrelationship between loss of SR NI & power supply including switch position	3.1	1
000033 Loss of Intermediate Range NI / VII					10		Determine & interpret T.S. limit if both IR detectors have failed	3.8	1
000037 Steam Generator Tube Leak / III									
000038 Steam Generator Tube Rupture / III			06				Knowledge of reasons for EOP actions on a Tube Rupture	4.5	1
000054 ~~(CE/E06)~~ Loss of Main Feedwater / IV					08		Determine/interpret steam/ feed flow trend recorder during loss of MFW	3.3	1
~~BW/E04~~; W/E05 Inadequate Heat Transfer - Loss of Secondary heat Sink / IV				03			Operate/monitor desired results during FR-H.1 implementation	4.2	1
000058 Loss of DC Power / VI					03		Determine & Interpret DC loads lost impact on ability to operate/monitor	3.9	1
000060 Accidental Gaseous Radwaste Rel. / IX				02			Operate/monitor ventilation system as it applies to a Rad release	3.1	1
000061 ARM System Alarms / VII						2.3.11	Ability to control radiation releases	3.2	1
W/E16 High Containment Radiation / IX					02		Adherence to procedures and operations within limits	3.3	1
000065 Loss of Instrument Air / VIII									
~~CE/E09 Functional Recovery~~ **N/A MP3**									
K/A Category Point Totals:	3	2	1	5	4	1	Group Point Total:		**16**

SHADED - indicates questions that are SRO Only

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3						Form ES-401-3	
E/APE 1 / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp	Pts
000028 Pressurizer Level Malfunction / II									
000036 ~~(BW/A08)~~ Fuel Handling Accident / VIII				04			Operate/monitor fuel handling equipment during a Fuel Handling incident	3.7	1
000056 Loss of Off-site Power / VI	04						Definition of saturation implications on a Loss of offsite	3.2	1
~~BW/E13&E14 EOP Rules and Enclosures~~ **N/A MP3**									
~~BW/A05 Emergency Diesel Actuation / VI~~ **N/A MP3**									
~~BW/A07 Flooding / VIII~~ **N/A MP3**									
~~CE/A16 Excess RCS Leakage / II~~ **N/A MP3**									
W/E13 Steam Generator Over-pressure / IV			02				Knowledge of reasons for EOP responses during SG overpressure	3.3	1
W/E15 Containment Flooding / V									
K/A Category Point Totals:	1	0	1	1	0	0	Group Point Total:		**3**

SHADED - Indicates SRO Only

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 1	Form ES-401-3

System 1 / 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)	Imp	Pts
001 Control Rod Drive						14						Malf and effect on location & interpretation of RTBs	4.1	1
001 Control Rod Drive										11		Manually operate/monitor determination of SDM	4.1	1
003 Reactor Coolant Pump	10											Physical connection/cause effect on RCS	3.2	1
004 Chemical and Volume Control		03										Bus power supplies for charging pumps	3.5	1
013 Engineered Safety Features Actuation								04				Predict the impact of a loss of instrument bus on ESFAS	4.2	1
013 Engineered Safety Features Actuation											2.1.12	Ability to apply Tech. Specs. For ESFAS	4.0	1
014 Rod Position Indication								03				Predict the impact of mlf/ops of dropped rod on RPIs	4.1	1
015 Nuclear Instrumentation							01					Predict/monitor changes associated w/ NIS calibration due to heat balance	3.8	1
017 In-core Temperature Monitor						01						Malf/loss of sensors/detectors and effect on ITM	3.0	1
022 Containment Cooling				03								Design feature/interlock for Auto CTMT isolation	4.0	1
022 Containment Cooling								06				Predict/mitigate the impact of a loss of CCS Pump on CTMT	3.2	1
~~025 Ice Condenser~~ **N/A MP3**														
026 Containment Spray									02			Monitor auto ops of cooling water supply to RSS	4.2*	1
056 Condensate								04				Cause/effect of loss of Cond pumps on sys ops.	2.8*	1
059 Main Feedwater							07					Predict/monitor parameters assoc. w/ MFP speed	2.6*	1
061 Auxiliary/Emergency Feedwater	03											Physical connection/cause effect on main steam sys.	3.9	1
063 DC Electrical Distribution			01									Effect a loss of DC electrical will have on EDG	4.1	1
068 Liquid Radwaste									02			Monitor auto ops of LWS to include auto isolation	3.6	1
071 Waste Gas Disposal					04							Ops implications of H2 to O2 flammability concept	3.1	1
072 Area Radiation Monitoring			02									Effect of a loss of ARM on Fuel handling operations	3.5	1
K/A Category Point Totals:	2	1	2	1	1	2	2	4	2	1	1	Group Point Total:		19

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ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 2											Form ES-401-3		
System 1 / 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)	Imp.	Pts
002 Reactor Coolant				01								Design feature/interlock for **filling & draining the RCS**	3.0	1
006 Emergency Core Cooling		01										Knowledge of bus power supplies to **ECCS Pumps**	3.9	1
010 Pressurizer Pressure Control											2.1.33	Ability to recognize indications for sys ops which are entries into T.S.	4.0	1
011 Pressurizer Level Control			01									Malf of Pzr LCS effect on **CVCS**	3.4	1
012 Reactor Protection										05		Manually operate/monitor channel defeat controls	3.6	1
016 Non-nuclear Instrumentation								01				Predict controller response to a detector failure	3.1*	1
027 Containment Iodine Removal														
028 H_2 Recombiner and Purge Control							01					Predict changes in HRPS controls with H2 concentration	3.8	1
029 Containment Purge				03								Design feature/interlocks that provide for auto purge isolation.	3.5	1
033 Spent Fuel Pool Cooling				05								Design feature that provides for adequate SDM	3.3	1
034 Fuel Handling Equipment				02								Design feature/interlock associated with fuel movement	3.3	1
035 Steam Generator											2.1.7	Ability to evaluate plant performance & make ops judgements based on operating characteristics	4.4	1
039 Main and Reheat Steam					08							Ops implications of the concept concerning **the effects of steam removal on reactivity**	3.6	1
055 Condenser Air Removal														
062 AC Electrical Distribution								09				Ability to predict the impact of exceeding current limitations	3.0*	1
064 Emergency Diesel Generator				11								Design/interlock for automatic load sequencer: safeguards	4.0	1
073 Process Radiation Monitoring											2.3.10	Perform procedures to reduce excessive levels of radiation	3.3	1
075 Circulating Water														
079 Station Air														
086 Fire Protection					04							Hazards to people from fire type and method of protection	3.5*	1
103 Containment								03				Predict the impact of a phase "A"/"B" on CTMT system ops	3.8*	1
K/A Category Point Totals:	0	1	1	5	2	0	1	3	0	1	3	Group Point Total:		17

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ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 3											Form ES-401-3		
System 1 / 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)	Imp	Pts
005 Residual Heat Removal	10											Physical connections or cause/effect relationship between RHR & CTMT Spray	3.4*	1
007 Pressurizer Relief/Quench Tank														
008 Component Cooling Water							01					Predict/monitor changes in CCP due to flowrate change	2.9	1
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator														
076 Service Water	05											Cause/effect relationship between service water and EDG	4.0	1
078 Instrument Air				03								Design/interlock that provides for securing air comp on high temp	3.3*	1
K/A Category Point Totals:	2	0	0	1	0	0	1	0	0	0	0	Group Point Total:		4

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Plant Specific Priorities			
System/Topic	**Recommended replacement For...**	**Reason**	**Pts**
Station Blackout Diesel Design/interlock	T2Grp3: 078 Instrument Air K4.03	SBO Diesel design/ops is vital to core covery per NUMARC-87-00	1
EOP Users Guide (OP3272)	T1Grp2: 061 Area Radiation Monitor GEN.2.3.11	MP3 has specific rules of usage & Millstone 3 Area Rad Monitor actions are minimal (None for RO and SRO refers to EPIPs only) with no auto actions tied to area radiation monitors. Question will be SRO specific.	1
Plant Specific Priority Test total; (Limit 10)			**2**

Facility: Millstone Unit 3		Date of Exam: Week of 6/30/97		Exam Level: **SRO**
Category	K/A 1	Topic	Imp.	Pts
Conduct of Operations	2.1.2	Knowledge of operator responsibilities during all modes of operation	3.0/4.0	1
	2.1.23	Ability to perform specific system & integrated plant procedures	3.9/4.0	1
	2.1.30	Ability to locate/operate components including local control	3.9/3.4	1
	Total			**3**
Equipment Control	2.2.10	Knowledge for determining if the margin to safety as defined in Tech Spec Basis is reduced by a proposed change test or experiment	1.9/3.3	1
	2.2.11	Knowledge of the process for controlling temporary changes	2.5/3.4*	1
	2.2.22	Knowledge of LCO and safety limits	3.4/4.1	1
	2.2.23	Ability to track LCOs	2.6/3.8	1
	2.2.24	Ability to analyze the effects of maintenance activities on LCO status	2.6/3.8	1
	2.2.26	Knowledge of Refueling Admin requirements	2.5/3.7	1
	Total			**6**
Radiation Control	2.3.1	Knowledge of 10CFR20 and related facility rad control requirements	2.6/3.0	1
	2.3.4	Knowledge of radiation exposure limits & contamination control including permissible levels in excess of those authorized	2.5/3.1	1
	Total			**2**
Emergency Procedures and Plan	2.4.5	Knowledge of the organization of the OP network for Ops, AOPs & EOPs	2.9/3.6	1
	2.4.6	Knowledge of symptom based EOP mitigation strategy	3.1/4.0	1
	2.4.24	Knowledge of Loss of Cooling Water procedures	3.3/3.7	1
	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations	3.3/3.5	1
	2.4.18	Knowledge of specific bases for EOPs	2.7/3.6	1
	2.4.41	Knowledge of EAL Thresholds & Classifications	2.3/4.1	1
	Total			**6**
Tier 1 Target Point Total (RO/SRO)				**17**

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