Facility: Davis-Besse Nuclear Power Station Date of Exam: 10/2/2000 Exam Level: USRO

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	3	5				5	4			4	24
	2	3	2	2				3	3			3	16
	3	1	1	0				0	0			1	3
	Tier Totals	7	6	7				8	7			8	43
2. Plant Systems	1	3	2	1	3	1	2	1	2	1	2	1	19
	2	2	0	2	1	1	2	1	2	2	3	1	17
	3	0	0	0	1	1	0	0	0	2	0	0	4
	Tier Totals	5	2	3	5	3	4	2	4	5	5	2	40

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	17
	5	4	4	4	

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.

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1							Form ES-401-3	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1				1			AA1.01 - Bank select switch	3.2	1
000003 Dropped Control Rod / 1			1				AK3.08 -Criteria for inoperable control rods	4.2	1
000005 Inoperable/Stuck Control Rod / 1						1	2.1.07 - Ability to eval. plant perf. & make operational judgements	4.4	1
000011 Large Break LOCA / 3				1			EA1.11 - Long-term cooling of core	4.2	1 *
000015/17 RCP Malfunctions / 4		1					AK2.10 - RCP indicators and controls	2.8	1 *
000015/17 RCP Malfunctions / 4					1		AA2.11 - When to jog RCPs during ICC	3.8	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4				1			EA1.03 - Desired operating results during abnormal and emerg. situations	3.7	1
000024 Emergency Boration / 1	1						AK1.02 - Relationship between boron addition and reactor power	3.9	1
000026 Loss of Component Cooling Water / 8			1				AK3.04 - Effect on the CCW flow header of a loss of CCW	3.7	1 *
000029 Anticipated Transient w/o Scram / 1						1	2.4.49 - Ability to perf. w/o proced. actions that require immed. ops	4.0	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4		1					EK2.02 - Relation between operation of heat removal sys. to plant ops	4.4	1
CE/A11; W/E08 RCS Overcooling - PTS / 4	1						EK1.02 - Procedures associated with PTS	4.0	1
000051 Loss of Condenser Vacuum / 4						1	2.1.20 - Ability to execute procedure steps	4.2	1
000055 Station Blackout / 6				1			EA1.04 - Reduction of loads on the battery	3.9	1
000057 Loss of Vital AC Elec. Inst. Bus / 6			1				AK3.01 - Actions contained in EOP for loss of vital ac elect. inst. bus	4.4	1
000059 Accidental Liquid RadWaste Rel. / 9					1		AA2.02 - The permit for liquid radioactive-waste release	3.9	1
000062 Loss of Nuclear Service Water / 4			1				AK3.02 - The auto. actions within the SWS resulting from EFAS actuation	3.9	1
000067 Plant Fire On-site / 9	1						AK1.02 - Fire fighting	3.9	1
000068 (BW/A06) Control Room Evac. / 8		1					AK2.03 - Controllers and positioners	3.1	1
000069 (W/E14) Loss of CTMT Integrity / 5			1				AK3.01 - Guidance contained in the EOP for loss of CTMT integrity	4.2	1
000074 (W/E06&E07) Inad. Core Cooling / 4						1	2.4.07 - Knowledge of event based EOP mitigation strategies	3.8	1
BW/E03 Inadequate Subcooling Margin / 4					1		EA2.01 - Selection of appropriate proced. during abnormal & emerg. ops	4.0	1
000076 High Reactor Coolant Activity / 9					1		AA2.02 - Corrective actions required for high activity in RCS	3.4	1
BW/A02&A03 Loss of NNI-X/Y / 7				1			A02-AA1.01 - Components and functions of control and safety systems	3.8	1
K/A Category Totals:	3	3	5	5	4	4	Group Point Total:		24

*PSA Related

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2							Form ES-401-3	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1		1					E10-EK2.02 - Relation between operation of ht. removal sys. to plant ops	4.0	1
BW/A01 Plant Runback / 1			1				AK3.02 - Procedures associated with Plant Runback	3.6	1
BW/A04 Turbine Trip / 4	1						AK1.02 - Procedures associated with Turbine Trip	3.8	1
000008 Pressurizer Vapor Space Accident / 3	1						AK1.01 - Thermo. and flow characteristics of open or leaking vlvs	3.7	1
000009 Small Break LOCA / 3					1		EA2.33 -RCS water inventory balance and Tech-spec limits	3.8	1
BW/E08; W/E03 LOCA Cooldown - Depress. / 4						1	2.4.09 - Knowledge of low pwr/shutdown implications in accid. mitigation	3.9	1
W/E11 Loss of Emergency Coolant Recirc. / 4									
000022 Loss of Reactor Coolant Makeup / 2				1			AA1.09 - RCP seal flows, temperature, pressure and vibrations	3.3	1
000025 Loss of RHR System / 4					1		AA2.02 - Leakage of RC from RHR into closed clng wtr sys. or CTMT	3.8	1 *
000027 Pressurizer Pressure Control System Malfunction / 3						1	2.4.04 - Ability to recognize abnormal indications which are entry conditions into EOP and AOP.	4.3	1
000032 Loss of Source Range NI / 7					1		AA2.07 - Maximum allowable channel disagreement	3.4	1
000033 Loss of Intermediate Range NI / 7									
000037 Steam Generator Tube Leak / 3			1				AK3.05 - Actions in proced. for rad monitoring, wtr bal, SGTL and plnt S/D	4.0	1
000038 Steam Generator Tube Rupture / 3		1					EK2.02 -Sensors and Detectors	2.5	1
000054 (CE/E06) Loss of Main Feedwater / 4						1	2.4.18 - Knowledge of the specific bases for EOPs.	3.6	1 *
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	1						EK1.02 - Procedures associated with Inadequate heat transfer	4.2	1
000058 Loss of DC Power / 6				1			AA1.03 - Vital and battery bus components	3.3	1 *
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7									
W/E16 High Containment Radiation / 9									
000065 Loss of Instrument Air / 8				1			AA1.03 -Restoration of systems served by IA when press is regained	3.1	1
CE/E09 Functional Recovery									
K/A Category Point Totals:	3	2	2	3	3	3	Group Point Total:		16

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3							Form ES-401-3	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2		1					AK2.02 - Sensors and detectors	2.7	1
000036 (BW/A08) Fuel Handling Accident / 8									
000056 Loss of Off-site Power / 6									
BW/E13&E14 EOP Rules and Enclosures	1						E13-EK1.02 - Procedures associated with EOP Rules	3.6	1
BW/A05 Emergency Diesel Actuation / 6						1	2.2.21 - Knowledge of pre and post maint. operability requirements	3.5	1
BW/A07 Flooding / 8									
CE/A16 Excess RCS Leakage / 2									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
K/A Category Point Totals:	1	1	0	0	0	1	Group Point Total:		3

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 1												Form ES-401-3	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive									1			A3.05 - Individual vs. group rod position	3.5	1
003 Reactor Coolant Pump								1				A2.02 - Conditions for abn S/D of an RCP	3.9	1
004 Chemical and Volume Control										1		A4.01 - Boron and CR reactivity effects	3.9	1
013 Engineered Safety Features Actuation		1										K2.01 - ESFAS Equipment Control	3.8	1
013 Engineered Safety Features Actuation							1					A1.01 - RCS pressure and temperature	4.2	1
014 Rod Position Indication				1								K4.06 - Individual and group misalignment	3.7	1
015 Nuclear Instrumentation										1		A4.01 - Selection of controlling NIS channel	3.6	1
017 In-core Temperature Monitor				1								K4.01 - Input to subcooling monitors	3.7	1
022 Containment Cooling								1				A2.04 - Loss of service water	3.2	1
025 Ice Condenser														
026 Containment Spray	1											K1.01 - ECCS	4.2	1 *
056 Condensate	1											K1.03 - MFW	2.6	1
059 Main Feedwater				1								K4.18 - Automatic FW reduction on plant trip	3.0	1
059 Main Feedwater											1	2.1.23 - Ability to perf sys and integ plnt procd	4.0	1
061 Auxiliary/Emergency Feedwater		1										K2.01 - AFW system MOVs	3.3	1 *
061 Auxiliary/Emergency Feedwater					1							K5.01 - Relationship between AFW & RCS hx	3.9	1 *
063 DC Electrical Distribution			1									K3.02 - Components using DC control power	3.7	1
068 Liquid Radwaste						1						K6.10 - Radiation monitors	2.9	1
071 Waste Gas Disposal						1						K6.10 - Surge and decay tanks	2.5	1
072 Area Radiation Monitoring	1											K1.01 - Plant ventilation systems	3.5	1
K/A Category Point Totals:	3	2	1	3	1	2	1	2	1	2	1	Group Point Total:		19

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 2												Form ES-401-3
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant			1									K3.03 - Containment	4.6	1
006 Emergency Core Cooling			1									K3.03 - Containment	4.4	1
010 Pressurizer Pressure Control						1						K6.03 - Pzr sprays and heaters	3.6	1
011 Pressurizer Level Control							1					A1.01 - Pzr level and pressure	3.6	1
012 Reactor Protection										1		A4.04 - Bistables, trips, reset and test sw.	3.3	1
016 Non-nuclear Instrumentation											1	2.1.31 - Ability to locate CTRM controls	3.9	1
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control										1		A4.03 - Loc and ops of H2 sampling & anlys.	3.3	1
029 Containment Purge								1				A2.03 - S/U ops & vlv lineups	3.1	1
033 Spent Fuel Pool Cooling									1			A3.02 - Spent fuel leak or rupture	3.1	1
034 Fuel Handling Equipment														
035 Steam Generator									1			A3.01 - SG water level control	3.9	1
039 Main and Reheat Steam					1							K5.05 - Bases for RCS cooldown limits	3.1	1
055 Condenser Air Removal				1								K4.02 - Effluent control and monitoring	2.6	1
062 AC Electrical Distribution										1		A4.01 - All breakers (including switchyard)	3.1	1
064 Emergency Diesel Generator						1						K6.07 - Air receivers	2.9	1
073 Process Radiation Monitoring														
075 Circulating Water	1											K1.01 - SWS	2.5	1
079 Station Air														
086 Fire Protection								1				A2.02 - Low FPS header pressure	3.3	1
103 Containment	1											K1.02 - CTMT isolation/CTMT integrity	4.1	1
K/A Category Point Totals:	2	0	2	1	1	2	1	2	2	3	1	Group Point Total:		17

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

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal					1							K5.09 - Dilution and boration considerations	3.4	1
007 Pressurizer Relief/Quench Tank									1			A3.01 - Components which disch to the PRT	2.9	1
008 Component Cooling Water				1								K4.02 - Ops of surge tk, vlvs and controls	2.7	1
041 Steam Dump/Turbine Bypass Control									1			A3.02 - RCS press, RCS temp & Rx pwr	3.4	1
045 Main Turbine Generator														
076 Service Water														
078 Instrument Air														
K/A Category Point Totals:	0	0	0	1	1	0	0	0	2	0	0	Group Point Total:		4

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points
Plant-Specific Priority Total: (limit 10)			

Facility: Davis-Besse Nuclear Power Station Date of Exam: 10/2/2000 Exam Level: USRO				
Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.04	Knowledge of staffing requirements	3.4	1
	2.1.12	Ability to apply T.S. for a system	4.0	1
	2.1.25	Ability to use reference materials	3.1	1
	2.1.32	Ability to explain & apply limits & precautions	3.8	1
	2.1.33	Ability to recognize entry conditions for T.S.	4.0	1
	2.1.			
	Total			5
Equipment Control	2.2.06	Knowledge of making changes to procedures	3.3	1
	2.2.13	Knowledge of tagging & clearance procedures	3.8	1
	2.2.25	Knowledge of bases for LCOs & safety limits	3.7	1
	2.2.26	Knowledge of refueling admin requirements	3.7	1
	2.2.			
	2.2.			
	Total			4
Radiation Control	2.3.04	Knowledge of rad limits & contamination ctrl	3.1	1
	2.3.06	Knowledge of approving a release permit	3.1	1
	2.3.08	Knowledge of performing a gaseous release	3.2	1
	2.3.11	Ability to control radiation releases	3.2	1
	2.3.			
	2.3.			
	Total			4
Emergency Procedures/ Plan	2.4.38	Ability to take actions in the E-Plan	4.0	1
	2.4.40	Knowledge of SRO responsibilities in E-Plan	4.0	1
	2.4.43	Knowledge of communications systems	3.5	1
	2.4.44	Knowledge of E-Plan PARs	4.0	1
	2.4.			
	2.4.			
	Total			4
Tier 3 Point Total (RO/SRO)				13/17