

Final Submittal

**OCONEE JUNE 2005 EXAM
50-269, 270, & 287/2005-301**

**JUNE 20 - 24, 2005
JUNE 30, 2005 (WRITTEN)**

FINAL SAMPLE PLANS / OUTLINES



Facility: Oconee 2005-301		(FINAL)											Date of Exam: June 30, 2005						
Tier	Group	RO K/A Category Points											SRO-Only Points						
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total			
1. Emergency & Abnormal Plant Evolutions	1													18	4	2	6		
	2					N/A					N/A			9	1	3	4		
	Tier Totals													27	5	5	10		
2. Plant Systems	1													28	3	2	5		
	2													10	2	1	3		
	Tier Totals													38	5	3	8		
3. Generic Knowledge and Abilities Categories						1	2	3	4				10	1	2	3	4	7	
															1	3	1	2	

Note:1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).

- The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
- 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.
- Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
- Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
- Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
- On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2. Use duplicate pages for RO and SRO-only exams.
- For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

PWR Examination Outline												Form ES-401-2		
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)														
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)					IR	#	
000001 Continuous Rod Withdrawal / 1														
000003 Dropped Control Rod / 1														
000005 Inoperable/Stuck Control Rod / 1														
000024 Emergency Boration / 1														
000028 Pressurizer Level Malfunction / 2														
000032 Loss of Source Range NI / 7														
000033 Loss of Intermediate Range NI / 7														
000036 (BW/A08) Fuel Handling Accident / 8														
000037 Steam Generator Tube Leak / 3														
000051 Loss of Condenser Vacuum / 4														
000059 Accidental Liquid RadWaste Rel. / 9														
000060 Accidental Gaseous Radwaste Rel. / 9														
000061 ARM System Alarms / 7														
000067 Plant Fire On-site / 8														
000068 (BW/A06) Control Room Evac. / 8														
000069 (W/E14) Loss of CTMT Integrity / 5														
000074 (W/E06&E07) Inad. Core Cooling / 4														
000076 High Reactor Coolant Activity / 9													2.9	1
W/E01 & E02 Rediagnosis & SI Termination / 3														
W/E13 Steam Generator Over-pressure / 4														
W/E15 Containment Flooding / 5														
W/E16 High Containment Radiation / 9														

X 076AG2.1.34 High RCS Activity: ability to maintain primary and secondary plant chemistry within allowable limits. (Changed from 051AG2.1.32)

BW/A01 Plant Runback / 1				X	BA01AG2.2.22 Knowledge of limiting conditions for operations and safety limits.	4.1	1	
BW/A02&A03 Loss of NNI-X/Y / 7								
BW/A04 Turbine Trip / 4								
BW/A05 Emergency Diesel Actuation / 6								
BW/A07 Flooding / 8				X	BA07AA2.2 Ability to determine and interpret the following as they apply to Flooding; Adherence to appropriate procedures and operation within the limitations in the facility's License and Amendments. (Changed from BA03AA2.1)	3.7	1	
BW/E03 Inadequate Subcooling Margin / 4								
BW/E08; W/E03 LOCA Cooldown - Depress. / 4				X	BE08EA2.1 Ability to determine and interpret the following as they apply to LOCA Cooldown -Depress. Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	4.2	1	
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4								
BW/E13&E14 EOP Rules and Enclosures								
CE/A11; W/E08 RCS Overcooling - PTS / 4								
CE/A16 Excess RCS Leakage / 2								
CE/E09 Functional Recovery								
K/A Category Point Totals:							Group Point Total:	9/4

ES-401		PWR Examination Outline												Form ES-401-2			
		Plant Systems - Tier 2/Group 1 (RO / SRO)															
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	A 3	A 4	G	K/A Topic(s)	IR	#	
003 Reactor Coolant Pump																	
004 Chemical and Volume Control																	
005 Residual Heat Removal								X						005A2.04 Ability to predict the impacts of the following on the RHR systems; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: RHR valve malfunction.	2.9		
006 Emergency Core Cooling														006A 2.11 Ability to predict the impacts of the following on the Emergency Core cooling systems; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: Rupture of ECCS header.	4.4		
007 Pressurizer Relief/Quench Tank																	
008 Component Cooling Water																	
010 Pressurizer Pressure Control																	
012 Reactor Protection																	
013 Engineered Safety Features Actuation																	
022 Containment Cooling														022A2.01 Ability to (a) predict the impacts of the following on the (Containment Cooling) and (b) based on those predictions, use porcedures to correct, control, or mitigate the consequences of those abnormal operation: Fan motor over-current	2.7		

Facility:		Oconee SRO (FINAL)		Date of Exam:		June 30, 2005	
Category	K/A #	Topic	RO		SRO-Only		
			IR	#	IR	#	
1. Conduct of Operations	2.1.4	Knowledge of Shift Staffing Requirements.			3.4	1	
	2.1.						
	2.1.						
	2.1.						
	2.1.						
	2.1.						
Subtotal							
2. Equipment Control	2.2.11	Knowledge of the process for controlling Temporary Changes.			3.4	1	
	2.2.25	Knowledge of the bases in technical specifications for limiting conditions for operations and safety. (Changed from 2.1.32)			3.7	1	
	2.2.26	Knowledge of refueling administrative requirements. (Changed from 2.2.32)			3.7	1	
	2.2.						
	2.2.						
	2.2.						
Subtotal							
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels.			3.1	1	
	2.3.						
	2.3.						
	2.3.						
	2.3.						
	2.3.						
Subtotal							
4. Emergency Procedures / Plan	2.4.36	Knowledge of chemistry/health physics tasks during emergency operations.			2.8	1	
	2.4.38	Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator.			4.0	1	
	2.4.						
	2.4.						
	2.4.						
	2.4.						
Subtotal							
Tier 3 Point Total				10		7	

Oconee 2005-301 SRO

Tier / Group	Randomly Selected K/A	Reason for Rejection
3	G2.2.26 SRO	Changed from 2.2.32 Knowledge of the effects of alterations on core configuration. Could not develop suitable question with materials supplied, selected another refueling K/A.
T1/G1	008G2.1.7 SRO	Changed from 008G2.1.32 due to not being able to write a question on precautions and limitations of a Steam space break.
T1/G1	027AA2.04 SRO	Changed from 027AA2.17 due to not being able to write an SRO level question from this K/A.
T1/G1	058AA2.03 SRO	Changed from 058AA2.01 due to not being able to write an SRO level question from this K/A.
3	G2.2.25 SRO	Changed 2.1.32 due to not being able to write an SRO level question from this K/A
T2/G2	062G2.1.23 SRO	Changed 062G2.1.14 due to not being able to write an SRO level question from this K/A.
T1/G2	076G2.1.34 SRO	Changed from 051AG2.1.32 due to not being able to write an SRO only question on precautions and limitations of a loss of Condenser Vacuum.
T1/G2	BA07AA2.2 SRO	Changed from BA03AA2.1 due to RO exam already having a question on this K/A, and not being able to write an SRO level question.
		All K/As randomly selected using a random number generator except G2.2.25.

Facility: Oconee RO		Date of Exam: June 30, 2005																
Tier	Group	RO K/A Category Points											SRO-Only Points					
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total		
1. Emergency & Abnormal Plant Evolutions	1	2	3	3	N/A			4	3	N/A			3	18			6	
	2	3	1	2	N/A			1	1	N/A			1	9			4	
	Tier Totals	5	4	5	N/A			5	4	N/A			4	27			10	
2. Plant Systems	1	3	3	2	3	3	2	2	1	3	3	3	28			5		
	2	1	1	1	1	1	1	1	2	0	1	0	10			3		
	Tier Totals	4	4	3	4	4	3	3	3	3	4	3	38			8		
3. Generic Knowledge and Abilities Categories				1		2		3		4		10		1	2	3	4	7
				4		2		2		2								

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 - e. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
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 - i. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

PWR Examination Outline											Form ES-401-2		
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)													
E/APE # / Name / Safety Function	K			A			G			K/A Topic(s)	IR	#	
	K1	K2	K3	A1	A2	A3	G1	G2	G3				
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1		X									007EK2.02 Knowledge of the interrelations between Reactor Trip-Stabilization-Recovery and the following: Breakers, Relays, and disconnects.	2.6/2.8	
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1			X								BE02EK3.2 Knowledge of the reasons for the following responses as they apply to Reactor Trip - Stabilization: normal, abnormal and emergency operating procedures associated with (Vital System Status Verification)	3.0/4.0	
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1	X										BE10EK1.1 Knowledge of the operational implications of the following concepts as they apply to the Reactor Trip - Stabilization - Recovery : components, capacity, and function of emergency systems.	4.0/4.0	
000008 Pressurizer Vapor Space Accident / 3							X				008AA2.04 Ability to determine and interpret the following as they apply to Pressurizer Vapor Space Accident: High-temperature computer alarm and alarm type.	3.2/3.4	
000009 Small Break LOCA / 3			X								009EK3.07 Knowledge of the reasons for the following responses as they apply to Small Break LOCA: increasing indication on CCWS process monitor: indicates in-leakage of radioactive liquids.	3.3/3.6	
000011 Large Break LOCA / 3		X									011K2.02 Knowledge of the interrelations between Large Break LOCA and the following : Pumps.	2.6/2.7	

000015/17 RCP Malfunctions / 4				X		015AA1.12 Ability to operate and/or monitor the following as they apply to RCP Malfunctions; Reactor Coolant loop flow meters.	2.8/3.1	
000022 Loss of Rx Coolant Makeup / 2				X		022AA1.05 Ability to operate and or monitor the following as they apply to Loss of RX Coolant Make-up; RCP seal back pressure regulator valves and flow indicators.	2.9/2.8	
000025 Loss of RHR System / 4			X			025AK3.02 Knowledge of the reasons for the following responses as they apply to Loss of RHR system; Isolation of RHR low-pressure piping prior to pressure increase above specified level.	3.3/3.7	
000026 Loss of Component Cooling Water / 8								
000027 Pressurizer Pressure Control System Malfunction / 3		X				027AK2.03 Knowledge of the interrelations between Pressurizer pressure control malfunction and the following: Controllers and positioners.	2.6/2.8	
000029 ATWS / 1					X	029EG2.2.22 Knowledge of limiting conditions for operations and safety limits.	3.4/4.1	
000038 Steam Gen. Tube Rupture / 3								
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4								
000054 (CE/E06) Loss of Main Feedwater / 4				X		054AA1.02 Ability to operate and/or monitor the following as they apply to Loss of Main Feedwater: manual startup of electric and steam-driven AFW pumps.	4.4/4.4	
000055 Station Blackout / 6								

PWR Examination Outline										Form ES-401-2
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)										
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	A 3	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1										
000003 Dropped Control Rod / 1										
000005 Inoperable/Stuck Control Rod / 1										
000024 Emergency Boration / 1	X							024AK1.01 Knowledge of the operational implications of the following concepts as they apply to Emergency Boration: Relationship between boron addition and change in Tave.	3.4/3.8	
000028 Pressurizer Level Malfunction / 2										
000032 Loss of Source Range NI / 7										
000033 Loss of Intermediate Range NI / 7										
000036 (BW/A08) Fuel Handling Accident / 8										
000037 Steam Generator Tube Leak / 3										
000051 Loss of Condenser Vacuum / 4										
000059 Accidental Liquid RadWaste Rel. / 9	X							059AK1.01 Knowledge of the operational implications of the following concepts as they apply to Accidental Liquid Radwaste release: Types of radiation, their units of intensity and the location of the source of radiation in a nuclear power plant.	2.7/3.1	
000060 Accidental Gaseous Radwaste Rel. / 9										
000061 ARM System Alarms / 7										
000067 Plant Fire On-site / 8			X					067AK3.04 Knowledge of the reasons for the following responses as they apply to Plant Fire On-site: Actions contained in EOP for plant fire on site.	3.3/4.1	

BW/E08; W/E03 LOCA Cooldown - Depress. / 4													
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4													
BW/E13&E14 EOP Rules and Enclosures								X				4.0/4.3	
BW/E13&E14 EOP Rules and Enclosures							X					3.4/3.4	
CE/A11; W/E08 RCS Overcooling - PTS / 4													
CE/A16 Excess RCS Leakage / 2													
CE/E09 Functional Recovery													
K/A Category Point Totals:	3	1	2	1	1	1	1	1	1	1	1	Group Point Total:	9/4

PWR Examination Outline													Form ES-401-2			
Plant Systems - Tier 2/Group 1 (RO / SRO)																
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	A5	A6	G	K/A Topic(s)	IR	#
	003 Reactor Coolant Pump					X									003K5.02 Knowledge of the operational implications of the following concepts as they apply to the Reactor Coolant Pump: Effects of RCP coastdown on RCS parameters.	2.8/3.2
004 Chemical and Volume Control			X											004K3.097 Knowledge of the effect that a loss or malfunction of the Chemical and Volume Control system will have on the following PZR level and pressure.	3.8/4.1	
005 Residual Heat Removal	X													005K1.13 Knowledge of the physical connections and /or cause effect relationships between RHR and the following: SIS.	3.3/3.5	
006 Emergency Core Cooling		X												006K2.02 Knowledge of electrical power supplies to the following: Valve operators for Accumulators.	2.5/2.9	
006 Emergency Core Cooling		X												006K2.04 Knowledge of electrical power supplies to the following: ESFAS-operated Valves.	3.6/3.8	
007 Pressurizer Relief/Quench Tank			X											007K3.01 Knowledge of the effect that a loss or malfunction of the Pressurizer relief/Quench Tank will have on the following: Containment.	3.3/3.6	
007 Pressurizer Relief/Quench Tank				X										007K4.01 Knowledge of Quench Tank design features and or interlocks which provide for the following: Quench Tank Cooling.	2.6/2.9	

026 Containment Spray	X									026K1.01 Knowledge of the physical connections and/or cause-effect relationships between containment spray and the following: ECCS.	4.2/4.2	
039 Main and Reheat Steam		X								039K5.05 Knowledge of the operational implications of the following concepts as they apply to the Main and reheat Steam system : Bases for RCS cooldown limits.	2.7/3.1	
059 Main Feedwater			X							059A1.07 Ability to predict and/or monitor changes in parameters associated with operating the Main Feedwater system controls including: Feed pump speed, including normal control speed for ICS.	2.5/2.6	
061 Auxiliary/Emergency Feedwater			X							061K5.05 Knowledge of the operational implications of the following concepts as they apply to the Auxiliary Feedwater System: Feed line voiding and water hammer.	2.7/3.2	
061 Auxiliary/Emergency Feedwater							X			061A3.03 Ability to monitor automatic operations of the Emergency feedwater system including Automatic AFW isolation.	4.1/4.2	
062 AC Electrical Distribution	X									062K1.04 Knowledge of the physical connections and/or cause effect relationships between AC Electrical Distribution and the following: Off-Site power sources.	3.7/4.2	
063 DC Electrical Distribution									X	063G2.1.30 Ability to locate and operate components, including local controls.	3.9/3.4	

ES-401		PWR Examination Outline										Form ES-401-2		
		Plant Systems - Tier 2/Group 2 (RO / SRO)												
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
001 Control Rod Drive						X						001K6.13 Knowledge of the effect that a loss or malfunction of the following will have on the control rod drive system Location and operation of RPIS.	3.6/3.7	
002 Reactor Coolant														
011 Pressurizer Level Control				X								011K4.02 Knowledge of pressurizer level control design features and or interlocks which provide for the following PZR level controller.	3.3/3.4	
014 Rod Position Indication							X					014A1.02 Ability to predict and/or monitor changes in parameters associated with operating the Rod position indication including: control rod position indication on control room panels.	3.2/3.6	
015 Nuclear Instrumentation														
016 Non-nuclear Instrumentation									X			016A2.01 Ability to (a) predict the impacts of the following on the Non-Nuclear instrumentation system and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: Detector Failure.	3.0/3.1	
017 In-core Temperature Monitor					X							017K5.02 Knowledge of the operational implications of the following concepts as they apply to the In-core temperature Monitor: saturation and subcooling of water.	3.7/4.0	
027 Containment Iodine Removal	X											027K2.01 Knowledge of electrical power supplies to the following: Fans	3.1/3.4	

Facility: Oconee RO (FINAL)		Date of Exam: June 30, 2005				
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.10	Knowledge of conditions and limitations in the facility's license.	2.7	1	3.9	
	2.1.19	Ability to use plant computer to obtain and evaluate parametric information on system or component status.	3.0	1	3.0	
	2.1.29	Knowledge of how to conduct valve lineups.	3.4	1	3.3	
	2.1.32	Ability to explain and apply all system limits and precautions. (Changed from 2.2.25)	3.4	1	3.8	
	2.1.					
	2.1.					
	Subtotal					
2. Equipment Control	2.2.3	Knowledge of the design, procedural and operational differences between units.	3.1	1	3.3	
	2.2.24	Ability to analyze the affect of maintenance activities on LCO Status.	2.6	1	3.8	
	2.2.					
	2.2.					
	2.2.					
	2.2.					
	Subtotal					
3. Radiation Control	2.3.2	Knowledge of facility ALARA program.	2.5	1	2.9	
	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1	3.4	
	2.3.					
	2.3.					
	2.3.					
	2.3.					
	Subtotal					
4. Emergency Procedures / Plan	2.4.4	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.0	1	4.3	
	2.4.11	Knowledge of abnormal condition procedures. (Changed from 2.4.32).	3.4	1	3.6	
	2.4.					
	2.4.					
	2.4.					
	2.4.					
	Subtotal					
Tier 3 Point Total				10		7

Oconee RO

Tier / Group	Randomly Selected K/A	Reason for Rejection
2/1	013K4.07 (RO)	Changed from 013K4.15 Continuous Testing, Oconee does not have continuous testing of ES .
2/2	045A2.17 (RO)	Changed from 045A2.12 Control Rod Insertion limits exceeded (Stabilize secondary)
3	G2.4.11 (RO)	Changed from 2.4.32, due to Licensee not having any procedures for a loss of all annunciators.
3	G2.1.32 (RO)	Changed from 2.2.25 due to not being able to write an RO level question on this K/A.
2/1	064G2.4.48 (RO)	Changed from G2.4.49 due to the facility not having any immediate operator actions on emergency backup power.
		Replacement K/A were randomly selected using a random number generator, with the exception of 2.1.32.

Facility: Oconee		Date of Examination: June, 2005
Examination Level (circle one) (RO) / SRO		Operating Test Number: <u> 1 </u>
Administrative Topic	Describe activity to be performed	
Conduct of Operations GEN 2.1.25 (2.8/3.1) N	Admin-112, Calculate requirements to makeup to the BWST EOP Encl. 5.4, Makeup to the BWST (RO only) (group activity) (12 min)	
Conduct of Operations GEN 2.1.1 (3.7/3.8) N	Admin-111, Perform the required Actions to Enter and Exit the SFP Area (Performed in conjunction with JPM NLO-039.) (5 min)	
Equipment Control GEN 2.2.12 (3.0/3.4) P, S	Admin-202, Perform Surveillance to Verify SSF RCMUP Operability PT/600/001 Encl. 13.1 (Mode 1 & 2) (15 min) (RO only)	
Radiation Control GEN 2.3.4 (2.5/3.1) N	Admin-302, Calculate the Maximum Permissible Stay Time Within Duke Power Basic Administrative Limits (group activity) (13 min)	
Emergency Plan GEN 2.4.39 (3.3/3.1)		
Note: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria:	(C)ontrol room (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified fro bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected) (S)imulator	

Facility: Oconee		Date of Examination: June, 2005
Examination Level (circle one): RO (SRO)		Operating Test Number: <u> 1 </u>
Administrative Topic	Describe activity to be performed	
Conduct of Operations GEN 2.1.19 (3.0/3.0) M, S	CRO-037, Calculate An Estimated Critical Rod Position PT/1/A/1103/15, Reactivity Balance (SRO only) (17 min)	
Conduct of Operations GEN 2.1.1 (3.7/3.8) N	Admin-111, Perform the required Actions to Enter and Exit the SFP Area (Performed in conjunction with JPM NLO-039.) (5 min)	
Equipment Control GEN 2.2.18 (2.3/3.6) N	Admin-203, Complete Plant Configuration Sheet (Calculate Time to Core Boil) S. D. 1.3.5 Attachment 9.3A (SRO only) (group activity) (11 min)	
Radiation Control GEN 2.3.4 (2.5/3.1) N	Admin-302, Calculate the Maximum Permissible Stay Time Within Duke Power Basic Administrative Limits (group activity) (11 min)	
Emergency Plan GEN 2.4.38 (2.2/4.0) N	Admin-405, Determine Emergency Classification and Protective Action Recommendations (SRO only) (group activity) (20 min)	
Note: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria:		
(C)ontrol room		
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)		
(N)ew or (M)odified from bank (≥ 1)		
(P)revious 2 exams (≤ 1 ; randomly selected)		
(S)imulator		

Facility: **Oconee**Date of Examination: **June, 2005**Exam Level (circle one): **(RO)** SRO(I) / SRO(U) Operating Test No.: 1 **Control Room Systems®** (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. CRO-107, With the Reactor Critical, Increase Power From 1.5% to 15% [KA: 001 A3.01 (4.1/4.0)] (20 min)	D, S, L	1
b. CRO-200, Re-establish RCP Seal Injection and Normal RCS Makeup following loss of operating HPI Pump, AP/14, Loss of Normal HPI Makeup and/or RCP Seal Injection [KA: APE 022 AA1.01 (3.4/3.3)] (15 min)	D, S	2
c. CRO-075, Initiate Automatic Pressurizer Spray (spray valve fails open with closed indication) OP/1103/05, Pressurizer Operation, Encl. 4.1 [KA: 010 A2.02 (3.9/3.9)] (12 min)	D, A, S	3
d. CRO-96, Align ECCS Suction From Emergency Sump (1LP-21 Fails to Close) EOP, Enclosure 5.12 [KA:BW/E08 EA1.1 (4.0/3.7)] (PRA) (15 min)	M, A, S	4P
e. CRO-017, Re-establish Main FDW Flow From Condensate Booster Pump Flow EOP, LOHT Tab [APE-054 AK3.04 (4.4/4.6)] (15 min)	M, A, S	4S
f. CRO-601, Synchronization with the grid following a load rejection AP/1, Load Rejection [062 A4.07 (3.1*/3.1*)] (10 min)	D, S	6
g. CRO-700, Place ICS In Auto following Loss Of Auto Power AP/23, Loss of ICS Power [KA: BW/A02 AA1.1 (4.0/3.8)] (20 min)	D, S, P	7
h. CRO-800, Perform Required Actions for an Intake Canal Dam Failure AP/13, Dam Failure [KA: 075 A2.01 (3.0*/3.2)] (20 min)	N, S	8

In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. NLO-039, Prime The Spent Fuel Pool Fill Line EOP Encl. 5.7, HPI Pump Operations from ASW Pump Switchgear [KA: APE022 AK3.02 (3.5/3.8)] (16 min)	D, R, P	2
j. NLO-700, Restoration of ICS AUTO Power AP/23 (Loss of ICS Power) Encl. 5.2, Restoration of ICS AUTO Power [KA: APE BW/A02 AK3.2 (3.7/4.0)] (16 min)	N, A, E	7
k. NLO-037, Place A Control Battery Charger In Service OP/1107/010, Removal From Service and Restoration To Service of Control Charger [KA: 063 K1.03 (2.9/3.5)] (12 min)	D	6
<p>@ All control (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Facility: **Oconee**Date of Examination: **June, 2005**Exam Level (circle one): RO / **SRO(I)** / SRO(U) Operating Test No.: 1**Control Room Systems[®]** (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. CRO-107, With the Reactor Critical, Increase Power From 1.5% to 15% [KA: 001 A3.01 (4.1/4.0)] (30 min)	D, S, L	1
b. CRO-200, Re-establish RCP Seal Injection and Normal RCS Makeup following loss of operating HPI Pump, AP/14, Loss of Normal HPI Makeup and/or RCP Seal Injection [KA: APE 022 AA1.01 (3.4/3.3)] (15 min)	D, S	2
c. CRO-075, Initiate Automatic Pressurizer Spray (spray valve fails open with closed indication) OP/1103/05, Pressurizer Operation, Encl. 4.1 [KA: 010 A2.02 (3.9/3.9)] (12 min)	D, A, S	3
d. CRO-96, Align ECCS Suction From Emergency Sump (1LP-21 Falls to Close) EOP, Enclosure 5.12 [KA: BW/E08 EA1.1 (4.0/3.7)] (PRA) (15 min)	M, A, S	4P
e. CRO-017, Re-establish Main FDW Flow From Condensate Booster Pump Flow EOP, LOHT Tab [APE-054 AK3.04 (4.4/4.6)] (15 min)	M, A, S	4S
f. CRO-601, Synchronization with the grid following a load rejection AP/1, Load Rejection [062 A4.07 (3.1*/3.1*)] (10 min)	D, S	6
g. CRO-700, Place ICS In Auto following Loss Of Auto Power AP/23, Loss of ICS Power [KA: BW/A02 AA1.1 (4.0/3.8)] (20 min)	D, S, P	7
h. N/A		

In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. NLO-039, Prime The Spent Fuel Pool Fill Line EOP Encl. 5.7, HPI Pump Operations from ASW Pump Switchgear [KA: APE022 AK3.02 (3.5/3.8)] (16 min)	D, R, P	2
j. NLO-700, Restoration of ICS AUTO Power AP/23 (Loss of ICS Power) Encl. 5.2, Restoration of ICS AUTO Power [KA: APE BW/A02 AK3.2 (3.7/4.0)] (16 min)	N, A, E	7
k. NLO-037, Place A Control Battery Charger In Service OP/1107/010, Removal From Service and Restoration To Service of Control Charger [KA: 063 K1.03 (2.9/3.5)] (12 min))	D	6
<p>@ All control (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Facility: Oconee		Date of Examination: June, 2005
Exam Level (circle one): RO / SRO(I) / SRO(U) Operating Test No.: <u> </u>		
Control Room Systems[®] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. CRO-107, With the Reactor Critical, Increase Power and Place The ICS in Auto [KA: 001 A3.01 (4.1/4.0)] (30 min)	D, S, L	1
d. CRO-96, Align ECCS Suction From Emergency Sump (1LP-21 Fails to Close) EOP, Enclosure 5.12 [KA:BW/E08 EA1.1 (4.0/3.7)] (PRA) (15 min)	M, A, S	4P
f. CRO-601, Synchronization with the grid following a load rejection AP/1, Load Rejection [062 A4.07 (3.1*/3.1*)] (10 min)	D, S	6
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. NLO-039, Prime The Spent Fuel Pool Fill Line EOP Encl. 5.7, HPI Pump Operations from ASW Pump Switchgear [KA: APE022 AK3.02 (3.5/3.8)] (16 min)	D, R, P	2
j. NLO-700, Restoration of ICS AUTO Power AP/23 (Loss of ICS Power) Encl. 5.2, Restoration of ICS AUTO Power [KA: APE BW/A02 AK3.2 (3.7/4.0)] (16 min)	N, A, E	7
@ All control (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Facility: **Oconee**Scenario No.: **2 fnl r2**Op-Test No.: **1**Examiners: _____

_____Operators: _____

Initial Conditions:

- 45% Reactor Power (Snap 201)

Turnover:

- Startup in progress after adding oil to 1B1 RCP
- SASS in MANUAL for I&E troubleshooting
- 1A Main FDW pump operating
- After turnover, the crew should start 1B1 RCP

Event No.	Malf. No.	Event Type*	Event Description
0a	Pre-Insert		SASS in manual
0b	Pre-Insert MPI290 Override		Block All Turbine Trips Except Manual Turbine trip pushbutton Blocked
0c	Pre-Insert MPS350		"A" RBCU fails to receive ES signal
0d	Pre-Insert Override		1B1 RCP fails to trip
0e			1C HPI pump fails to start on ES
1		N, BOP, SRO	Start 1B1 RCP
2	Override Z3424D1	C, BOP, SRO	AC Oil Lift pump will not develop adequate discharge pressure
3	MPI281	I, OATC, SRO	Δ Tc controller failure
4	MPS120	TS, ALL	1A HPI pump breaker failure (TS)
5		R, OATC, SRO	UST leak requiring a manual shutdown (TS)
6	Override	C, OATC, SRO	PORV Fails OPEN
7	Override	C, OATC, SRO	Main Turbine Fails to trip (Lockout EHC Pumps)
8 8a 8b	MPS400, 4 Override MPS350	M, ALL	RCS leak to SBLOCA (ramp over 5 minutes) - 1B1 RCP fails to trip - "A" RBCU fails to receive ES signal
9	MPS400, 100		LBLOCA

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Op-Test No.: _____

Scenario No.: 2

Event No.: 1

Page 1 of 1

Event Description: **Start 1B1 RCP: (N, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Crew response:</p> <p>The BOP should use the in progress procedure OP/1/A/1103/006 (RCP Operation) Enclosure 4.1 (RCP Start) to start the 1B1 RCP.</p> <ul style="list-style-type: none"> • Open 1LPSW-9&10 (1B1 RC PUMP MTR CLR IN & OUT) and verify both valves open by using the OAC indications. • Review Limit and Precautions <p>Note:</p> <ul style="list-style-type: none"> • No more than two RCP(s) may be operated when RCS is < 250 °F. • Either AC or DC Oil Lift Pump may be used • AC Oil Lift Pump may take > 2 minutes to develop adequate discharge pressure • AC and DC Oil Lift Pumps will automatically trip after 3 minutes • Oil Lift Pump may NOT start unless switch has been placed to "OFF" after last start <ul style="list-style-type: none"> • Announce "Starting 1B1 RCP" via plant page. • Start AC Oil Lift Pump on 1B1 RCP.
		<p>When the 1B1 RCP AC Oil Lift Pump has been started or when directed by the Lead Examiner this event is completed.</p>

Event Description: **1B1 RCP AC Oil Lift pump will not develop adequate discharge pressure: (C, BOP, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Note: The AC Oil Lift Pump will not develop adequate discharge press to clear the Low Press indication prior to tripping off. The operator will have to determine that the AC Oil Lift Pumped tripped and start the DC Oil Lift Pump.</p> <ul style="list-style-type: none"> • IF AC Oil Lift Pump automatically trips after 3 minutes, start DC Oil Lift Pump. • Monitor the status of DC Oil Lift Pump low discharge pressure on the OAC and when it clears, start 1B1 RCP. • After RCP is at full speed, ensure Oil Lift Pump stopped. • Position any Oil Lift Pump switch(s) that were operated to "OFF". • Use the OAC to monitor RCP parameters for proper operation.
		<p>This event is complete when the 1B1 RCP is started or when directed by the lead examiner.</p>

Event Description: **1A HPI pump breaker failure: (TS, SRO)**

Time	Position	Applicant's Actions or Behavior
	<p>BOP</p> <p>SRO</p>	<p>Plant response:</p> <p>Statalarms:</p> <ol style="list-style-type: none"> 1. 1SA-2/B-2, HP RCP SEAL INLET HEADER FLOW HIGH/LOW 2. 1SA-2/C-2, INJECTION PUMP DISCH HEADER PRESSURE LOW <p>Crew response:</p> <ol style="list-style-type: none"> 1. Refer to the ARGs <ul style="list-style-type: none"> • Check pump amps to verify the STBY HPI pump started. 2. Refer to TS 3.5.2 (HPI) <ul style="list-style-type: none"> • Determine TS 3.5.2 Conditions "A" met. 72 hour completion time. 3. Inform team of TS requirements.
		<p>Event is complete when TS has been referenced or when directed by the Lead Examiner.</p>

Event Description:

Upper Surge Tank leak requiring a MANUAL unit shutdown: (R, OATC, SRO)

Time	Position	Applicant's Actions or Behavior
	BOP	<p>Plant response:</p> <ul style="list-style-type: none"> • 1SA-06/A-11, UPPER SURGE TANK LEVEL LOW <p>Crew response:</p> <ol style="list-style-type: none"> 1. Refer to ARG <ul style="list-style-type: none"> • Open DW-4 (#1 UST Makeup Control) • Check hotwell level to determine if hotwell level control valves have malfunctioned • Check CST lineup to verify CST pumps lined up to UST. • Check system for leaks if it appears that water is being lost. <p>Note: An NLO will notify the CR that water is leaking out of the UST and cannot be isolated.</p> <ol style="list-style-type: none"> 2. The SRO should determine that TS 3.7.6 (UST and HW) is not met. <ul style="list-style-type: none"> • Required action is to be in MODE 3 in 12 hours. • SRO should determine a unit shutdown is required. <p>Note: After the SRO makes the decision to shut down, the Unit Coordinator will inform the crew that management has determined that a unit shutdown using AP/29 (Rapid Unit Shutdown) is required. Initially only the Main Turbine should be taken off line.</p> <ol style="list-style-type: none"> 3. Direct unit shutdown per AP/29 (Rapid Unit Shutdown)
	SRO	<ol style="list-style-type: none"> 4. Initiate Encl 5.1 (Support Actions During Rapid Unit Shutdown). <ul style="list-style-type: none"> • Verify Turbine-Generator shutdown is required. • Transfer 6.9 KV electrical auxiliaries by place 1TA/1TB transfer switches to MAN, Closing 1TA/1TB SU 6.9 KV FDR and verifying 1TA/1TB NORMAL 6.9 KV FDR opens. • Transfer 4 KV electrical auxiliaries by place MFB1/MFB2 transfer switches to MAN, Closing E1/E2, Startup FDR and verifying N1/N2 Normal FDR opens. • Notify CR SRO that unit auxiliaries have been transferred.
	BOP	

Event Description:

Upper Surge Tank leak requiring a MANUAL unit shutdown: (R, OATC, SRO)

Time	Position	Applicant's Actions or Behavior
	OATC	<ol style="list-style-type: none"> 5. Notify WCC SRO to initiate Encl 5.2 (WCC SRO Support During Rapid Unit Shutdown). 6. Announce AP entry using the PA system. 7. Verify ICS is NOT in AUTO and Initiate manual power reduction to desired power level. 8. Reduce reactor power in manual by inserting control rods with the Diamond, controlling FDW flow with the FDW Masters. <p>Note: Event six will occur during the manual shutdown.</p> <ol style="list-style-type: none"> 9. Verify Rx shutdown is NOT required. 10. Maintain Pzr level between 220" - 250". 11. WHEN Ni power is ≈15%, THEN deselect MAXIMUM RUNBACK. (cannot perform, ICS in manual) 12. Verify Turbine-Generator shutdown is required. 13. Start the TURBINE TURNING GEAR OIL PUMP. 14. Start 1A through 1E TURBINE BRNG OIL LIFT PUMPS. 15. Start the TURBINE MOTOR SUCTION PUMP. 16. Depress turbine TRIP pushbutton.
		Event is completed when the turbine trip pushbutton has been depressed or when directed by the lead examiner.

Event Description: **1RC-66 (PORV) Fails OPEN: (C, OATC, SRO)**

Time	Position	Applicant's Actions or Behavior
	BOP SRO OATC	<p>Plant response: Statalarms:</p> <ul style="list-style-type: none"> • 1SA-18/A-1, PRESSURIZER RELIEF VALVE FLOW <p>Control Board Indications:</p> <ul style="list-style-type: none"> • PZR Relief Flow Detector lights lit • RCS pressure decreasing <p>Crew response:</p> <ul style="list-style-type: none"> • Refer to ARG • Direct the OATC to isolate the PORV by closing 1RC-4 • Close 1RC-4 (PORV BLOCK VALVE) <p>Note: Crew should continue with Event 5 and take the turbine off line.</p>
		<p>Event is completed when the turbine trip pushbutton has been depressed or when directed by the lead examiner.</p>

Event Description:

Main Turbine Fails to trip (Lockout EHC Pumps) (C, OATC, SRO)

Time	Position	Applicant's Actions or Behavior
	OATC	<p>Plant response:</p> <ul style="list-style-type: none"> • When the turbine trip pushbutton is depressed, the Main Turbine should trip but does not. <p>Crew response:</p> <ul style="list-style-type: none"> • Verify all turbine stop valves closed (CT-18) <p>Note: The OATC should diagnose that the turbine did not trip and then perform the RNO step which will stop and lock out both EHC pumps. This will cause the turbine to trip.</p> <ul style="list-style-type: none"> • Open PCB-20 and PCB-21 • Open Generator Field Breaker • Open Exciter Filed Breaker
		<p>Event is complete when EHC pumps have been tripped or when directed by the lead examiner.</p>

Event Description: **RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	<p data-bbox="354 835 418 867">BOP</p> <p data-bbox="354 919 418 951">SRO</p>	<p data-bbox="483 384 706 415">Plant response:</p> <ol data-bbox="483 436 1323 720" style="list-style-type: none"> <li data-bbox="483 436 682 468">1. Statalarms: <ul data-bbox="532 478 1323 573" style="list-style-type: none"> <li data-bbox="532 478 1323 510">• 1SA-9/A-6, RB Reactor Bldg Norm Sump Level High/Low <li data-bbox="532 531 1144 562">• 1SA-8/B-9, Process Radiation Monitor High <li data-bbox="483 583 868 615">2. Control board indications: <ul data-bbox="532 636 1088 720" style="list-style-type: none"> <li data-bbox="532 636 868 667">• RBNS level increases <li data-bbox="532 688 1088 720">• PZR level will decrease due to the leak <p data-bbox="483 751 706 783">Crew response:</p> <ol data-bbox="483 804 1412 1497" style="list-style-type: none"> <li data-bbox="483 804 1372 867">1. Refer to ARG for 1SA-9/A-6, RB Reactor Bldg Norm Sump Level High/Low <li data-bbox="483 888 1372 1224">2. Refer to AP/2, Excessive RCS Leakage. <ul data-bbox="532 919 1372 1224" style="list-style-type: none"> <li data-bbox="532 919 1063 1014">• IAAT RC makeup flow is > 100 gpm, AND Pzr level is decreasing, Close 1HP-5 (Letdown isolation) <li data-bbox="532 1035 1372 1161">• IAAT RCS leakage > NORMAL MAKEUP CAPABILITY with letdown isolated, AND Pzr level decreasing, THEN trip Rx. <li data-bbox="532 1182 1242 1224">• Initiate makeup to LDST using BHUTs as required. <li data-bbox="483 1245 1412 1308">3. IAAT LDST level is $\leq 40''$, ensure open 1HP-24 and 1HP-25 (1A/1B BWST Suction) <li data-bbox="483 1329 893 1360">4. Place 1HP-14 in NORMAL. <li data-bbox="483 1371 1071 1402">5. Announce AP entry using the PA system. <li data-bbox="483 1423 1096 1455">6. Initiate Encl. 5.1 (Leak Rate Determination) <li data-bbox="483 1476 990 1507">7. Ensure OSM, STA, RP are notified <p data-bbox="483 1570 1412 1602">Note: If 1C HPI pumps is used to increase HPI flow it will not start.</p> <p data-bbox="483 1623 1388 1686">Note: The RCS leak rate will increase requiring a manual reactor trip.</p> <p data-bbox="483 1707 1331 1738">Note: The RCS will eventually saturate with all HPI injecting.</p>

Event Description: **RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	SRO BOP	<p>Plant response:</p> <ul style="list-style-type: none"> • RCS subcooling margin will = 0°F. <p>Crew response:</p> <ol style="list-style-type: none"> 1. SRO should direct the OATC to perform a symptoms check. 2. The BOP should inform the SRO that the RCS has saturated and obtain SRO concurrence to perform Rule #2, Loss of SCM. <ul style="list-style-type: none"> • Verify that reactor power is < 1%. • Trip RCPs within 2 min of LOSCM (CT-1) <ul style="list-style-type: none"> ▪ 1B1 RCP will not trip by the switch. The RNO will de-energize the 6900 volt switchgear to trip the pump. • Notify SRO of RCP status. • Open 1HP-24 and 1HP-25. • Start all available HPI pumps (Only the 1B will operate) • Open 1HP-26 and 1HP-27. • Verify a least two HPI pumps operating using two diverse indications. (Only one HPI pump is operating) • Maximize HPI flow ≤ 475 gpm (including seal injection for "A" hdr only) • Dispatch two operators to perform Encl. 5.24 (Operation of the ADVs) • Disable both channels of AFIS. • Notify SRO to Suspend Rule 3 (Loss of Main or Emergency FDW) until directed by LOSCM tab.

Event Description: **RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	ALL	<p>3. ES Channels 1 through 6 will actuate.</p> <p>4. An operator should inform the SRO that ES has actuated.</p> <p>5. The SRO should initiate EOP Encl. 5.1, ES Actuation per the parallel actions page of Subsequent Actions section or of the LOSCM Tab.</p> <p>6. When running Encl. 5.1, the operator will:</p> <ul style="list-style-type: none"> • Determine all ES channels should have actuated based on RCS pressure and RB pressure. • Verify all ES digital channels associated with actuation setpoints have actuated. • Place HPI in Manual. • Verify Rule 2 in progress or complete. • Place LPI pumps in manual control. • At SRO direction secure LPI pumps. • Ensure A and B and 3A and 3B Outside Air Booster Fans are operating. (CT-27) • Secure makeup to the LDST. • Place 1LPSW-251 and 1LPSW-252 FAIL SWITCH in the FAIL OPEN position. • Open 1LPSW-4 and 1LPSW-5. • Dispatch an operator to perform Encl. 5.2 (Placing RB Hydrogen Analyzers In Service) • Dispatch an operator to establish ≈ 1000 cfm flow in each PRVS filter train. • Verify all ES channels 5 & 6 components are in the ES positions. <p>Note: "A" RBCU will not receive an ES signal and will remain in HIGH speed. The operator should diagnose this and inform the SRO who should direct the RO to place the "A" RBCU in LOW speed.</p> <ul style="list-style-type: none"> • Notify SRO to evaluate components NOT in ES position. • The operator must get SRO approval to exit this enclosure.

Event Description: **RCS leak to Small Break LOCA (ramp over 5 minutes): (M, ALL)**

Time	Position	Applicant's Actions or Behavior
		<p>7. The SRO should GO TO the LOSCM Tab per the Parallel Actions page of the EOP Subsequent Actions section. LOSCM Tab will:</p> <ul style="list-style-type: none"> • Ensure that Rule #2 is in progress or complete. • Verify that station ASW is not feeding any SG. • Verify that the LOSCM is not caused by excessive heat transfer. • IAAT either of the following exists: <ul style="list-style-type: none"> ○ LPI FLOW TRAIN A plus FLOW TRAIN B \geq 3400 GPM ○ Only one LPI header in operation with header flow \geq 2900 gpm <p>THEN GO TO LOCA CD tab. (will not meet at this time)</p> <ul style="list-style-type: none"> • Verify SSF activated per AP/25. (it will not be) • Verify all of the following exist: <ul style="list-style-type: none"> ○ NO RCPs operating ○ HPI Flow in both HPI headers (do not meet) ○ Adequate total HPI flow per Figure 1 (Total Required HPI Flow) • Start both MDEFDW pumps • Start TDEFDW pump • Establish 300 gpm to A and B SG • Initiate full depressurization of both SGs utilizing TBVs or ADVs. (CT-11) • Initiate feed to all available SGs to LOSCM setpoint at maximum allowable rate (per Table 3 (Emergency FDW Pump and Header Maximum Flow Limits) of Rule 7 (SG Feed Control)). (CT-10) • Trip both Main FDW Pumps • Ensure Rule 3 (Loss of Main or Emergency FDW) is in progress or complete. • Open 1AS-40 while closing 1MS-47.
		<p>This event is complete when the full depressurization of the SGs is initiated or when directed by the lead examiner.</p>

Event Description: **LBLOCA: (M, ALL)**

Time	Position	Applicant's Actions or Behavior
	ALL	<p>Plant response:</p> <ul style="list-style-type: none"> • RCS pressure will decrease rapidly to RB pressure <p>Crew response:</p> <ol style="list-style-type: none"> 1. The crew should determine that RCS pressure is below LPI pump discharge head and restart the LPI pumps. 2. The SRO should determine that the IAAT step for LPI flow is now met and transfer to the LOCA CD tab. 3. The LOCA CD tab will: <ul style="list-style-type: none"> • IAAT BWST level \leq 19 feet transfer ECCS suction to the RBES. • Verify ES is actuated. • Ensure all RBCUs in low speed and open 1LPSW-18, 1LPSW-21, 1LPSW-24. • Initiate Encl. 5.35, Containment Isolation • Start all RB Aux fans • Dispatch an operator to close the breakers for 1CF-1/1CF-2 (1A/1B CFT OUTLET). • Close 1CF-1 and 1CF-2. • Initiate Encl. 5.36 (Equipment Alignment For Plant Shutdown)
		<p>Event is complete when transfer is made to the LOCA CD tab or when directed by the Lead Examiner.</p>

Critical Tasks

1. CT-18, Turbine Trip
2. CT-01, Trip All RCPs
3. CT-10, Establish FW Flow and Feed SGs
4. CT-11, Control SG Pressure to Maintain Appropriate Pri-Sec deltaT CD rate
5. CT-27, Implementation of Control Room Habitability Guidance