

Facility: PERRY U1Date of Examination: 11/29/2004Examination Level (circle one): **RO** SROOperating Test Number: 2004301

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	C/P/M	Verify a Working Copy of a Procedure Current Prior to Use
Conduct of Operations	C/D	Prepare a Relief/Turnover Checklist (PAP-0126)
Equipment Control	C/M	Review Clearance for Adequacy
Radiation Control	N	Inventory Control Room High Rad Series Keys/ Missing Key
Emergency Plan		N/A

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: <u>PERRY U1</u>		Date of Examination: <u>11/29/2004</u>
Examination Level (circle one): RO / <b>SRO</b>		Operating Test Number: <u>2004301</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	C/P/M	Verify a Working Copy of a Procedure Current Prior to Use
Conduct of Operations	C/N	Review HPCS Surveillance Run
Equipment Control	C/M	Review Clearance for Adequacy
Radiation Control	C/M	Inventory Control Room High Rad Series Keys/Missing Key
Emergency Plan	C/M	Complete Event Classification Checklist (EPI-A2)
<p>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.</p>		
<p>* Type Codes &amp; Criteria:</p> <p>(C)ontrol room</p> <p>(D)irect from bank (# 3 for ROs; # 4 for SROs &amp; RO retakes)</p> <p>(N)ew or (M)odified from bank (\$ 1)</p> <p>(P)revious 2 exams (# 1; randomly selected)</p> <p>(S)imulator</p>		

Facility: PERRY U1 Date of Examination: 11/29/2004  
 Exam Level (circle one): RO / SRO-I / SRO-U Operating Test No.: 2004301

Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. RCIS/Bypass a control rod position at the RACS.	N/C	1
b. HPCS/Shift HPCS from Full Flow Test to CST Mode to Injection Mode	N/S/A	2
c. EDG/Shutdown a Divisional EDG to Standby	N/S/A	6
d. LPCI/Place LPCI in the Alternate Shutdown Cooling Mode (Suppression Pool Feed and Bleed) per ONI-E12-2	N/S/L	4
e. MT/Shift Steam Jet Air Ejectors	N/C	9
f. NIS/Respond to a stuck SRM during withdrawal of detectors	N/S/L/A	7
g. RHR/Respond to Failure of F024A Valve to Open Fully When Placing RHR A in Suppression Pool Cooling	M/S	5
h. MS/Attempt to Close a Stuck Open SRV by Removing Applicable Control Power Fuses	N/C/A	3

In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

i. PC/Vent the Primary Containment Through RHR	N/R	5
j. DC/Shed Non-Essential DC Loads	N/R	6
k. CCW/Shift Component Cooling Water Heat Exchangers	N/R	8

@ All control room (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 including 1(A)	\$ 2 / \$ 2 / \$ 1
(P)revious 2 exams	# 3 / # 3 / # 2 (randomly selected)
(R)CA	\$ 1 / \$ 1 / \$ 1
(S)imulator	

Facility: PERRY U1 Date of Examination: 11/29/2004  
 Exam Level (circle one): RO / **SRO-I** / SRO-U Operating Test No.: 2004301

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System / JPM Title	Type Code*	Safety Function
a. RCIS/Bypass a control rod position at the RACS.	N/C	1
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c. EDG/Shutdown a Divisional EDG to Standby	N/S/A	6
d. LPCI/Place LPCI in the Alternate Shutdown Cooling Mode (Suppression Pool Feed and Bleed) per ONI-E12-2	N/S/L	4
e. MT/Shift Steam Jet Air Ejectors	N/C	9
f. NIS/Respond to a stuck SRM during withdrawal of detectors	N/S/L/A	7
g. n/a	n/a	5
h. MS/Attempt to Close a Stuck Open SRV by Removing Applicable Control Power Fuses	M/S/A	n/a

In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

i. PC/Vent the Primary Containment Through RHR	N/R	5
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(D)irect from bank	# 9 / # 8 / # 4
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(L)ow-Power	\$ 1 / \$ 1 / \$ 1
(N)ew or (M)odified from bank including 1(A)	\$ 2 / \$ 2 / \$ 1
(P)revious 2 exams	# 3 / # 3 / # 2 (randomly selected)
(R)CA	\$ 1 / \$ 1 / \$ 1
(S)imulator	

Facility: PERRY U1Date of Examination: 11/29/2004Exam Level (circle one): RO / SRO-I / **SRO-U**Operating Test No.: 2004301

## Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
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b. HPCS/Shift HPCS from Full Flow Test to CST Mode to Injection Mode	N/S/A	2
c. EDG/Shutdown a Divisional EDG to Standby	N/S/A	6
d. n/a	n/a	n/a
e. n/a	n/a	n/a
f. n/a	n/a	n/a
g. n/a	n/a	n/a
h. n/a	n/a	n/a

## In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)

i. PC/Vent the Primary Containment Through RHR	N/R	5
j. DC/Shed Non-Essential DC Loads	N/R	6
k. n/a	n/a	n/a

@ All control room (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.

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(P)revious 2 exams	# 3 / # 3 / # 2 (randomly selected)
(R)CA	\$ 1 / \$ 1 / \$ 1
(S)imulator	

Facility: PERRY U1														Date of Exam: 12/09/2004				
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	5	7	1				3	2				2	20	3	4	7	
	2	0	2	1	N/A			2	2	N/A			0	7	1	2	3	
	Tier Totals	5	9	2				5	4				2	27	4	6	10	
2. Plant Systems	1	1	2	3	4	3	3	1	3	2	3	1	26	3	2	5		
	2	0	0	1	2	2	0	3	0	1	1	2	12	3	0	3		
	Tier Totals	1	2	4	6	5	3	4	3	3	4	3	38	6	2	8		
3. Generic Knowledge and Abilities Categories					1		2		3		4		10	1	2	3	4	7
					2		2		3		3			2	2	1	2	
<p>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).</p> <p>2. 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 <math>\pm 1</math> 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.</p> <p>3. 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.</p> <p>4. 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.</p> <p>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.</p> <p>6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.</p> <p>7.* 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.</p> <p>8. 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. Use duplicate pages for RO and SRO-only exams.</p> <p>9. 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.</p>																		

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						*	2.1.9 - Ability to direct personnel activities inside the control room	2.5	1
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4					4		Determine and/or interpret individual jet pump flows as they apply to PARTIAL/COMPLETE LOSS OF FORCED CORE FLOW (SRO)	3.1	0/1
295003 Partial or Complete Loss of AC / 6		4					Interrelations between PARTIAL OR COMPLETE LOSS OF A.C. POWER and A.C. Electrical loads	3.4	1
295004 Partial or Total Loss of DC Pwr / 6		2					Interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the Batteries	3.0	1
295005 Main Turbine Generator Trip / 3		1					Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and RPS	3.1	1
295006 SCRAM / 1		5					Knowledge of the interrelations between SCRAM and the CRD mechanism	3.1	1
295016 Control Room Abandonment / 7					1		Determine and/or interpret Reactor Power as it applies to CONTROL ROOM ABANDONMENT	4.1	1
295016 Control Room Abandonment / 7					2		Determine and/or interpret Reactor water level as it applies to CONTROL ROOM ABANDONMENT (SRO)	4.3	1
295018 Partial or Total Loss of CCW / 8		1					Interrelations between PARTIAL OR COMPLETE LOSS OF CCW and the System Loads	3.3	1
295019 Partial or Total Loss of Inst. Air / 8				3			Operate/monitor Inst. Air compressor pwr. supplies as applied to PART/COMPLETE LOSS OF IA	3.0	1
295019 Partial or Total Loss of Inst. Air / 8						*	2.4.21 - Knowledge of the parameters and logic used to assess the status of safety functions (SRO)	4.3	1
295021 Loss of Shutdown Cooling / 4	1						Operational implications of decay heat as it applies to LOSS OF SHUTDOWN COOLING	3.6	1
295023 Refueling Acc / 8	1						Operational implications of radiation exposure hazards as applied to REFUELING ACCIDENTS	3.6	1
295024 High Drywell Pressure / 5		9					Interrelations between HIGH DRYWELL PRESSURE and Spr Pool makeup	2.9	1
295025 High Reactor Pressure / 3						*	2.4.1 - EOP entry conditions and immediate actions steps	4.3	1
295026 Suppression Pool High Water Temp. / 5				3			Operate/monitor temperature monitoring as applied to SUPPR POOL HIGH WATER TEMPERATURE	3.9	1
295026 Suppression Pool High Water Temp. / 5					1		Operate/monitor Suppression Pool cooling as it applies to SUPPR POOL HIGH WTR TEMP (SRO)	4.1	1
295027 High Containment Temperature / 5	3						Operational implications of Containment Integrity as it applies to HIGH CNTMT TEMPERATURE	3.8	1
295028 High Drywell Temperature / 5	2						Operational implications of Equip environmental quality as it applies to HIGH DW TEMPERATURE	2.9	1
295030 Low Suppression Pool Wtr Lvl / 5	3						Operational implications of Heat Capacity as they apply to LOW SUPPR WATER LEVEL	3.8	1
295030 Low Suppression Pool Wtr Lvl / 5						*	2.1.32 - Ability to explain and apply system limits and precautions (SRO)	3.8	1
295031 Reactor Low Water Level / 2				4			Operate and/or monitor HPCS as it applies to RPV LOW WATER LEVEL	4.3	1
295031 Reactor Low Water Level / 2						*	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits (SRO)	3.7	1
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1		5					Interrelations between SCRAM CONDITION PRESENT AND RX POWER ABOVE APRM DNSC OR UNKNOWN and CRDH	4.0	1
295038 High Off-site Release Rate / 9			3				Reasons for control room ventilation isolation as it applies to HIGH OFF-SITE RELEASE RATE	3.7	1
295038 High Off-site Release Rate / 9						*	2.3.10 - Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure (SRO)	3.3	1

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
600000 Plant Fire On Site / 8					3		Determine and interpret fire alarms as they apply to PLANT FIRE ON SITE	2.8	1
K/A Category Totals:	5	7	1	3	2/ 3	2/ 4	Group Point Total:		20/ 7



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	#	
295002 Loss of Main Condenser Vac / 3										
295007 High Reactor Pressure / 3										
295008 High Reactor Water Level / 2										
295009 Low Reactor Water Level / 2					1		Determine and/or interpret reactor water level as it applies to LOW REACTOR WATER LEVEL	4.2	1	
295010 High Drywell Pressure / 5				2			Ability to operate/monitor the drywell floor and equipment drain sumps as they apply to HIGH DRYWELL PRESSURE	3.6	1	
295011 High Containment Temp / 5										
295012 High Drywell Temperature / 5										
295013 High Suppression Pool Temp. / 5										
295014 Inadvertent Reactivity Addition / 1										
295015 Incomplete SCRAM / 1			1				Reasons for bypassing rod insertion blocks as they apply to INCOMPLETE SCRAM	3.4	1	
295017 High Off-site Release Rate / 9						*	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits. (SRO)	3.5	1	
295020 Inadvertent Cont. Isolation / 5 & 7				3			Operate/monitor the containment vent system as it applies to INADVERTENT CONTAINMENT ISOL	2.9	1	
295022 Loss of CRD Pumps / 1					1		Ability to determine/interpret accumulator presure as it applies to LOSS OF CRD PUMPS (SRO)	3.6	1	
295029 High Suppression Pool Wtr Lvl / 5										
295032 High Secondary Containment Area Temperature / 5		5					Interrelations between HIGH SECONDARY CONTAINMENT AREA TEMPERATURE and temperature sensitive instrumentation	3.2	1	
295033 High Secondary Containment Area Radiation Levels / 9										
295034 Secondary Containment Ventilation High Radiation / 9					2		Determine/interpret the cause of high radiation levels as they apply to SECONDARY CONTAINMENT VENT HIGH RADIATION	3.7	1	
295035 Secondary Containment High Differential Pressure / 5						*	2.1.7 - Ability to evaluate plant performance an make operational judgements based on operating characteristics/reactor behavior/and instrument interpretation (SRO)	4.4	1	
295036 Secondary Containment High Sump/Area Water Level / 5										
500000 High CTMT Hydrogen Conc. / 5		2					Operate/monitor SBGT/FRVS as they apply to SECONDARY CONTAINMENT HIGH DIFF PRESS	3.8	1	
K/A Category Point Totals:	0	2	1	2	2 / 1	0 / 2	Group Point Total:	7/3		

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	G	K/A Topic(s)	IR	#
203000 RHR/LPCI: Injection Mode											*	2.1.32 - Ability to explain and apply system limits and precautions	3.4	1
203000 RHR/LPCI: Injection Mode								3				Ability to predict the impacts of valve closure on the RHR/LPCI INJECTION MODE and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	3.3	1
205000 Shutdown Cooling								*				12 - Ability to predict the impacts of inadequate system flow in the SHUTDOWN COOLING SYSTEM (RHR) and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations	2.9	1
206000 HPCI														
207000 Isolation (Emergency) Condenser														
209001 LPCS			3					1				K3.03 - Electrical power supplies to the initiation logic A2.01 - Predict the impact of pump trips on the LPCS and based on those predictions use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations	2.6/ 2.7	2
209002 HPCS									1			Monitor automatic operations of the HPCS including valve operation	3.3	1
211000 SLC				3		4					*	K4.03 - Knowledge of SLC system design features/interlocks which provide for keeping sodium pentaborate in solution K6.04 - Effect that a loss or malfunction of the core spray system will have on the SLC system 2.1.12 - Ability to apply technical specifications for a system (SRO)	3.8/ 2.7/ 4.0	2 / 1
212000 RPS					2							Knowledge of the operational implications of the specific logic arrangements as they apply to RPS	3.3	1
215003 IRM	1		3									K1.01 - Knowledge of the physical connections and/or cause-effect relationships between IRM and RPS K3.03 - Effect that a loss or malfunction of the IRM will have on the RC&IS	3.9/ 3.7	2
215004 Source Range Monitor				5								SRM design features and/or interlocks which provide for alarm seal-in	2.5	1
215005 APRM / LPRM				6		3						K4.06 - APRM/LPRM design features/interlocks which provide for the effects of detector aging on LPRM/APRM readings K6.03 - Effect that a loss or malfunction of the detectors will have on the APRM/LPRM System	2.6/ 3.1	2
217000 RCIC					6							Knowledge of the operational implications of turbine operations as they apply to RCIC	2.9	1
218000 ADS									8			Monitor automatic operations of the ADS including reactor pressure	4.2	1
223002 PCIS/Nuclear Steam Supply Shutoff			*					5				K3.15 - Effect that a loss or malfunction of the PCIS will have on RCIC A2.05 - Ability to predict the impacts of nuclear boiler instrument failures on NS4, and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	3.4/ 3.6	1 / 1
239002 SRVs		1					1					K2.01- Knowledge of electrical power supplies to the SRV solenoids A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the RELIEF/SAFETY VALVES controls including tail pipe temperature	2.8/ 3.3	2
259002 Reactor Water Level Control		1										Knowledge of electrical power supplies to the Reactor water level control system circuits	2.4*	1
261000 SGTS										2		Ability to manually operate and/or monitor Suction valves in the control room	3.1	1

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	G	K/A Topic(s)	IR	#
262001 AC Electrical Distribution								*				Ability to (a) predict the impacts of exceeding current limitations on the A.C. ELECTRICAL DISTRIBUTION ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations.	2.9	1
262002 UPS (AC/DC)				1				1				K4.01 Knowledge of UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) design feature(s) and/or interlocks which provide for transfer from preferred power to alternate power supplies A2.01 - Ability to (a) predict the impacts of Under voltage on the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	3.1/ 2.6	1 / 1
263000 DC Electrical Distribution										2		Ability to manually operate and/or monitor Battery voltage indicator in the control room	3.2	1
264000 EDGs					6							Knowledge of the operational implications of Load sequencing as it applies to EDGs	3.4	1
300000 Instrument Air							*				*	K6.12 - Knowledge of the effect that a loss or malfunction of breakers, relays and disconnects will have on the INSTRUMENT AIR SYSTEM 2.2.17 - Knowledge of the process for managing maintenance activities during power operations. (SRO)	2.9/ 3.5	1 / 1
400000 Component Cooling Water										1		Ability to manually operate and / or monitor CCW indications and control in the control room	3.1	1
K/A Category Point Totals:	1	2	3	4	3	3	1	3 / 3	2	3	1 / 2	Group Point Total:		2 6 / 5

Plant Systems - Tier 2/Group 2 (RO / SRO)														
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)	IR	#
201001 CRD Hydraulic									4			Ability to monitor automatic operations of the CONTROL ROD DRIVE HYDRAULIC SYSTEM including System flow	2.8	1
201002 RMCS														
201003 Control Rod and Drive Mechanism							3					Ability to predict and/or monitor changes in parameters associated with operating the CONTROL ROD AND DRIVE MECHANISM controls including CRD drive water flow	2.9	1
201004 RSCS														
201005 RCIS														
201006 RWM														
202001 Recirculation				*								*K4.13 - Knowledge of RECIRCULATION System design feature(s) and/or interlocks which provide for End of cycle recirculation pump trip	3.7	1
202002 Recirculation Flow Control														
204000 RWCU														
214000 RPIS								1				Ability to (a) predict the impacts of Failed reed switches on the ROD POSITION INFORMATION SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	3.1	1
215001 Traversing In-core Probe														
215002 RBM														
216000 Nuclear Boiler Inst.					6							Knowledge of the operational implications of Rapid vessel depressurization effects on vessel level indications as they apply to NUCLEAR BOILER INSTRUMENTATION	3.4	1
219000 RHR/LPCI: Torus/Pool Cooling Mode														
223001 Primary CTMT and Aux.														
226001 RHR/LPCI: CTMT Spray Mode											*	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1
230000 RHR/LPCI: Torus/Pool Spray Mode														
233000 Fuel Pool Cooling/Cleanup														
234000 Fuel Handling Equipment							1					Ability to predict and/or monitor changes in parameters associated with operating the FUEL HANDLING EQUIPMENT controls including Spent fuel pool level	3.1	1
239001 Main and Reheat Steam							*					A1.10 - Ability to predict and/or monitor changes in parameters associated with operating the MAIN AND REHEAT STEAM SYSTEM controls including Reactor Power	3.8	1
239003 MSIV Leakage Control														
241000 Reactor/Turbine Pressure Regulator					3							Knowledge of the operational Implications of Reactor power vs. reactor pressure as it applies to REACTOR/TURBINE PRESSURE REGULATING SYSTEM	3.5	1
245000 Main Turbine Gen. / Aux.				5								Knowledge of MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS design feature(s) and/or interlocks which provide for Turbine protection	2.9	1
256000 Reactor Condensate								8				Ability to (a) predict the impacts of High feedwater heater level on the REACTOR CONDENSATE SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	3.1	1

Plant Systems - Tier 2/Group 2 (RO / SRO)															
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)	IR	#	
259001 Reactor Feedwater															
268000 Radwaste										1		Ability to manually operate and/or monitor Sump integrators in the control room	3.4	1	
271000 Offgas															
272000 Radiation Monitoring															
286000 Fire Protection															
288000 Plant Ventilation			3					4				K3.03 - Knowledge of the effect that a loss or malfunction of the PLANT VENTILATION SYSTEMS will have on following Auxiliary building temperature A2.04 - Ability to (a) predict the impacts of High radiation on the PLANT VENTILATION SYSTEMS ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations (SRO)	2.5 / 3.7	1	
290001 Secondary CTMT															
290003 Control Room HVAC															
290002 Reactor Vessel Internals											*	2.2.24 - Ability to analyze the affect of maintenance activities on LCO status.	2.6	1	
K/A Category Point Totals:	0	0	1	2	2	0	3	0/3	1	1	2	Group Point Total:		12/3	

ES-401		Generic Knowledge and Abilities Outline (Tier 3)			Form ES-401-3	
Facility: Perry U1				Date of Exam: 11 / 29 / 2004		
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements.	3.7	1		
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1		
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.			4.0	1
	2.1.6	Ability to supervise and assume a management role during plant transients and upset conditions.			4.3	1
	2.1.					
	Subtotal			2		2
2. Equipment Control	2.2.22	Knowledge of limiting conditions for operations and safety limits.	3.4	1		
	2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	2.5	1		
	2.2.21	Knowledge of pre and post maintenance operability requirements.			3.5	1
	2.2.26	Knowledge of refueling administrative requirements.			3.7	1
	2.2.					
	2.2.					
	Subtotal			2		2
3. Radiation Control	2.3.5	Knowledge of use and function of personnel monitoring equipment.	2.3	1		
	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1		
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	1		
	2.3.8	Knowledge of the process for performing a planned gaseous radioactive release.			3.2	1
	2.3.					
	2.3.					
	Subtotal			3		1
4. Emergency Procedures / Plan	2.4.15	Knowledge of communications procedures associated with EOP implementation.	3.0	1		
	2.4.26	Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.	2.9	1		
	2.4.31	Knowledge of annunciators alarms and indications / and use of the response instructions.	3.3	1		
	2.4.30	Knowledge of which events related to system operations/status should be reported to outside agencies.			3.6	1
	2.4.46	Ability to verify that the alarms are consistent with the plant conditions.			3.6	1
	2.4.					
	Subtotal			3		2
Tier 3 Point Total				10		7

Facility: Perry Nuclear Power Plant			Date of Exam: 11/29/03			
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements	3.7	1		
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications	3.4	1		
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.			4.0	1
	2.1.6	Ability to supervise and assume a management role during pant transients and upset conditions			4.3	1
	Subtotal			2		2
2. Equipment Control	2.2.22	Knowledge of limiting conditions for operations and safety limits	3.4	1		
	2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits	2.5	1		
	2.2.26	Knowledge of refueling administrative requirements			3.7	1
	Subtotal			2		1
3. Radiation Control	2.3.5	Knowledge of use and function of personnel monitoring equipment	2.3	1		
	2.3..9	Knowledge of the process for performing a containment purge	2.5	1		
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure	2.9	1		
	2.3.8	Knowledge of the process for performing a planned gaseous radioactive release			3.2	1
	Subtotal			3		1
4. Emergency Procedures / Plan	2.4.15	Knowledge of communications procedures associated with EOP implementation	3.0	1		
	2.4.26	Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage	2.9	1		
	2.4.31	Knowledge of annunciators alarms and indications / and use of the response instructions	3.3	1		
	2.4.30	Knowledge of which events related to system operations/status should be reported to outside agencies			3.6	1
	2.4.46	Ability to verify that the alarms are consistent with the plant conditions			3.6	1
	2.4.					
	Subtotal			3		2
Tier 3 Point Total				10		7

Facility: Perry U1 Scenario No.: 1 Op-Test No.: 2004301

Examiners: D. McNeil (D. Reeser - Cert) Operators: \_\_\_\_\_  
M. Bielby \_\_\_\_\_  
C. Phillips \_\_\_\_\_

Initial Conditions: Mode 2, Reactor Critical at the POAH, Hot reactor startup in progress (approx. 400 degrees F and 265 psig), a RFPT is in service on low flow control. MFP tagged out of service.

Turnover: Reactor startup is progress; reactor is critical at the point of adding heat. Temp ~400 degrees F Rx pressure ~265 psig. Planned activities include continued heat-up and entry to Mode 1 per IOI-0002 (section 4.6)

Event No.	Malf. No.	Event Type*	Event Description
1	None	R <sub>(RO/SRO)</sub>	Establish and maintain Heat-up rate.
2	CV03 ( F024B)	C <sub>(BOP)</sub>	RHR Pump B Low Discharge Pressure Condition (Tech Spec)
3	None	N <sub>(BOP)</sub>	Shift RFPT to Startup Level Controller
4	CU02, MVO6 on G33F053	C <sub>(RO/SRO)</sub>	Small Isolable RWCU leak; Containment Isolation valve fails to fully close. (Tech Spec)
5	TC04	C <sub>(RO/BOP/SRO)</sub>	Short-circuit in Bypass Valve Jack control circuit results in depressurization above reactor capacity resulting in excessive cooldown. Reduce steam loss, shutdown the reactor and isolate MSIVs. (SCRAM & Activities to minimize cooldown)
6	RD15, PC04	M	Several control rods fail to insert, shutdown criteria not met but reactor is sub-critical. Security calls to report a bomb threat. Explosion in RHR C Pump Room. SP Leak.
7	RD13	C <sub>(BOP)</sub>	CRD Pump Suction Filter clogs preventing recharge of scram accumulators. (Restores CRD after bypassing filters)

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



Facility: Perry U1 Scenario No.: 2 Op-Test No.: 2004301

Examiners: D. McNeil (D. Reeser - Cert) Operators: \_\_\_\_\_  
M. Bielby \_\_\_\_\_  
C. Phillips \_\_\_\_\_

Initial Conditions: Mode 1, 100% RTP EOC, RCIC Isolated, MFP tagged out of service.  
Winter Weather Advisory in effect. RPV Head inner Omega seal failed.

Turnover: Plant at 100% RTP, MFP tagged OOS for bearing replacement, and RCIC was  
isolated on the last shift due a steam leak on the FO45 valve. The RPV Head inner seal  
failed several weeks ago and will be replaced at the next outage. A Winter Weather  
Advisory is in effect. Plans are to reduce power to approx. 92% to perform Main Turbine  
Valve Exercise surveillance.

Event No.	Malf. No.	Event Type*	Event Description
0	TH03A	Initial Condition	RPV Head inner Omega seal fails
1	None	R (RO/SRO)	Reduce power to 92% with RR Flow
2	NM04C	C (RO/SRO)	APRM C fails to 0% (Tech Spec)
3	None	N	Perform Main Turbine Valve Exercise
4	OBE, FW10, MV06	C (BOP/SRO)	Earthquake exceeding OBE; CST rupture, HPCS Suppression Pool Suction Valve fails shut due to mechanical binding. (Tech Spec)
5	SSE, FW08B, TH03B	C (RO/SRO)	Earthquake exceeding SSE; RFPT B bearing oil line break, RPV Head Outer seal fails. (Reactor coolant leak to DW)
6	OBE/SSE, MC03, MV05	M	CW expansion joint rupture/loss of CW/loss of vacuum, Turbine Trip/ RFPT A Trips/Group 1 Isolation, Reactor Scram, HPCS Min Flow valve fails open. (No high pressure injection except CRD & SLC)
7	RD14	C (BOP)	CRDH Discharge Filter clogged.

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