

Facility: James A. Fitzpatrick										Date of Exam: September 2012								
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	4	2	4	N/A			3	4	N/A		3	20					
	2	1	2	1				2	1			0	7					
	Tier Totals	5	4	5				5	5			3	27					
2. Plant Systems	1	4	1	4	2	1	2	3	1	2	3	3	26					
	2	2	1	0	2	2	0	0	2	2	1	0	12					
	Tier Totals	6	2	4	4	3	2	3	3	4	4	3	38					
3. Generic Knowledge and Abilities Categories					1		2		3		4		10	1	2	3	4	
					2		3		3		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).
 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 ± 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.
 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/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
 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.
 5. 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.
 6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
 - 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. Refer to Section D.1.b of ES-401 for the applicable K/As.
 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; 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 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
 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.

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)						Form ES-401-1	
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			X				AK3.05 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION : Reduced loop operating requirements: Plant-Specific	3.2	1
295003 Partial or Complete Loss of AC / 6					X		AA2.02 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Reactor power / pressure / and level	4.2	2
295004 Partial or Complete Loss of DC Pwr / 6	X						AK1.05 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Loss of breaker protection	3.3	3
295005 Main Turbine Generator Trip / 3						X	2.1.31 - Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.	4.6	4
295006 SCRAM / 1					X		AA2.01 - Ability to determine and/or interpret the following as they apply to SCRAM: Reactor power	4.5	5
295016 Control Room Abandonment / 7				X			AA1.01 - Ability to operate and/or monitor the following as they apply to CONTROL ROOM ABANDONMENT: RPS	3.8	6
295018 Partial or Complete Loss of CCW / 8	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: Effects on component/system operations	3.5	7
295019 Partial or Complete Loss of Inst. Air / 8				X			AA1.02 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Instrument air system valves: Plant-Specific	3.3	8
295021 Loss of Shutdown Cooling / 4					X		AA2.03 - Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING: Reactor water level	3.5	9
295023 Refueling Acc / 8					X		AA2.03 - Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS: Airborne contamination levels	3.3	10
295024 High Drywell Pressure / 5	X						EK1.01 - Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE: Drywell integrity: Plant-Specific	4.1	11
295025 High Reactor Pressure / 3						X	2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.	4.2	12
295026 Suppression Pool High Water Temp. / 5	X						EK1.02 - Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Steam condensation	3.5	13

295028 High Drywell Temperature / 5		X					EK2.03 - Knowledge of the interrelations between HIGH DRYWELL TEMPERATURE and the following: Reactor water level indication	3.6	14
295030 Low Suppression Pool Wtr Lvl / 5			X				EK3.02 - Knowledge of the reasons for the following responses as they apply to LOW SUPPRESSION POOL WATER LEVEL: HPCI operation: Plant-Specific	3.5	15
295031 Reactor Low Water Level / 2		X					EK2.03 - Knowledge of the interrelations between REACTOR LOW WATER LEVEL and the following: Low pressure core spray	4.2	16
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1			X				EK3.05 - Knowledge of the reasons for the following responses as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: Cold shutdown boron weight: Plant-Specific	3.2	17
295038 High Off-site Release Rate / 9				X			EA1.01 - Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Stack Gas Monitoring System: Plant-Specific	3.9	18
600000 Plant Fire On Site / 8			X				AK3.04 - Knowledge of the reasons for the following responses as they apply to PLANT FIRE ON SITE: Actions contained in the abnormal procedure for plant fire on site	2.8	19
700000 Generator Voltage and Electric Grid Disturbances / 6						X	2.4.11 - Knowledge of abnormal condition procedures.	4.0	20
K/A Category Totals:	4	2	4	3	4	3	Group Point Total:		20

ES-401		BWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)						Form ES-401-1	
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	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to LOSS OF MAIN CONDENSER VACUUM: Loss of heat sink	3.6	21
295009 Low Reactor Water Level / 2					X		AA2.01 - Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL: Reactor water level	4.2	22
295015 Incomplete SCRAM / 1			X				AK3.01 - Knowledge of the reasons for the following responses as they apply to INCOMPLETE SCRAM: Bypassing rod insertion blocks	3.4	23
295020 Inadvertent Cont. Isolation / 5 & 7		X					AK2.01 - Knowledge of the interrelations between INADVERTENT CONTAINMENT ISOLATION and the following: Main steam system	3.6	24
295022 Loss of CRD Pumps / 1				X			AA1.03 - Ability to operate and/or monitor the following as they apply to LOSS OF CRD PUMPS: Recirculation system: Plant-Specific	2.7	25
295029 High Suppression Pool Wtr Lvl / 5		X					EK2.06 - Knowledge of the interrelations between HIGH SUPPRESSION POOL WATER LEVEL and the following: SRVs and discharge piping	3.4	26
500000 High CTMT Hydrogen Conc. / 5				X			EA1.02 - Ability to operate and monitor the following as they apply to HIGH CONTAINMENT HYDROGEN CONTROL: Primary containment oxygen instrumentation	3.3	27
K/A Category Point Totals:	1	2	1	2	1	0	Group Point Total:		7

ES-401		BWR Examination Outline Plant Systems - Tier 2/Group 1 (RO)											Form ES-401-1	
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										X		A4.09 - Ability to manually operate and/or monitor in the control room: System flow	4.1	28
205000 Shutdown Cooling											X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	29
206000 HPCI			X									K3.01 - Knowledge of the effect that a loss or malfunction of the HIGH PRESSURE COOLANT INJECTION SYSTEM will have on following: Reactor water level control: BWR-2,3,4	4.0	30
206000 HPCI									X			A3.03 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: System lineup: BWR-2,3,4	3.9	31
209001 LPCS	X											K1.02 - Knowledge of the physical connections and/or cause-effect relationships between LOW PRESSURE CORE SPRAY SYSTEM and the following: Torus/suppression pool	3.4	32
211000 SLC					X							K5.07 - Knowledge of the operational implications of the following concepts as they apply to STANDBY LIQUID CONTROL SYSTEM: Tank heater operation	2.7	33
211000 SLC						X						K6.03 - Knowledge of the effect that a loss or malfunction of the following will have on the STANDBY LIQUID CONTROL SYSTEM: A.C. power	3.2	34
212000 RPS							X					A1.08 - Ability to predict and/or monitor changes in parameters associated with operating the REACTOR PROTECTION SYSTEM controls including: Valve position	3.4	35
212000 RPS											X	2.4.9 - Knowledge of low power/shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.	3.8	36
215003 IRM				X								K4.01 - Knowledge of INTERMEDIATE RANGE MONITOR (IRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Rod withdrawal blocks	3.7	37
215003 IRM							X					A1.06 - Ability to predict and/or monitor changes in parameters associated with operating the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM controls including: Lights and alarms	3.3	38

215004 Source Range Monitor										X		A3.03 - Ability to monitor automatic operations of the SOURCE RANGE MONITOR (SRM) SYSTEM including: RPS status	3.6	39
215005 APRM / LPRM		X										K2.02 - Knowledge of electrical power supplies to the following: APRM channels	2.6	40
217000 RCIC								X				A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) controls including: RCIC flow	3.7	41
218000 ADS			X									K3.02 - Knowledge of the effect that a loss or malfunction of the AUTOMATIC DEPRESSURIZATION SYSTEM will have on following: Ability to rapidly depressurize the reactor	4.5	42
223002 PCIS/Nuclear Steam Supply Shutoff	X											K1.14 - Knowledge of the physical connections and/or cause-effect relationships between PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF and the following: Containment drainage system	2.8	43
239002 SRVs								X				A2.01 - Ability to (a) predict the impacts of the following on the RELIEF/SAFETY VALVES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck open vacuum breakers	3.0	44
259002 Reactor Water Level Control										X		A4.01 - Ability to manually operate and/or monitor in the control room: All individual component controllers in the manual mode	3.8	45
261000 SGTS				X								K4.02 - Knowledge of STANDBY GAS TREATMENT SYSTEM design feature(s) and/or interlocks which provide for the following: Charcoal bed decay heat removal	2.6	46
262001 AC Electrical Distribution										X		A4.05 - Ability to manually operate and/or monitor in the control room: Voltage, current, power, and frequency on A.C. buses	3.3	47
262001 AC Electrical Distribution										X		2.1.20 - Ability to interpret and execute procedure steps.	4.6	48
262002 UPS (AC/DC)			X									K3.08 - Knowledge of the effect that a loss or malfunction of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) will have on following: Computer operation: Plant-Specific	2.7	49
263000 DC Electrical Distribution	X											K1.04 - Knowledge of the physical connections and/or cause-effect relationships between D.C. ELECTRICAL DISTRIBUTION and the following: Ground detection	2.6	50
264000 EDGs			X									K3.01 - Knowledge of the effect that a loss or malfunction of the EMERGENCY GENERATORS (DIESEL/JET) will have on following: Emergency core cooling systems	4.2	51

300000 Instrument Air	X															K1.04 - Knowledge of the connections and / or cause-effect relationships between INSTRUMENT AIR SYSTEM and the following: Cooling water to compressor	2.8	52
400000 Component Cooling Water						X										K6.04 - Knowledge of the effect that a loss or malfunction of the following will have on the CCWS: Pumps	3.0	53
K/A Category Point Totals:	4	1	4	2	1	2	3	1	2	3	3	Group Point Total:						26

ES-401		BWR Examination Outline Plant Systems - Tier 2/Group 2 (RO)											Form ES-401-1	
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				X								K4.12 - Knowledge of CONTROL ROD DRIVE HYDRAULIC SYSTEM design feature(s) and/or interlocks which provide for the following: Controlling CRD system flow	2.9	54
201006 RWM					X							K5.13 - Knowledge of the operational implications of the following concepts as they apply to ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT SPECIFIC): Insert block: P-Spec (Not-BWR6)	3.5	55
202002 Recirculation Flow Control									X			A3.02 - Ability to monitor automatic operations of the RECIRCULATION FLOW CONTROL SYSTEM including: Lights and alarms	3.4	56
215001 Traversing In-core Probe				X								K4.01 - Knowledge of TRAVERSING IN-CORE PROBE design feature(s) and/or interlocks which provide for the following: Primary containment isolation: Mark-I&II (Not-BWR1)	3.4	57
216000 Nuclear Boiler Inst.	X											K1.09 - Knowledge of the physical connections and/or cause-effect relationships between NUCLEAR BOILER INSTRUMENTATION and the following: Redundant reactivity control/alternate rod insertion: Plant-Specific	3.7	58
223001 Primary CTMT and Aux.	X											K1.15 - Knowledge of the physical connections and/or cause-effect relationships between PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES and the following: HPCI: Plant-Specific	3.5	59
226001 RHR/LPCI: CTMT Spray Mode		X										K2.02 - Knowledge of electrical power supplies to the following: Pumps	2.9	60
233000 Fuel Pool Cooling/Cleanup								X				A2.09 - Ability to (a) predict the impacts of the following on the FUEL POOL COOLING AND CLEAN-UP; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A.C. electrical power failures	2.7	61
259001 Reactor Feedwater					X							K5.03 - Knowledge of the operational implications of the following concepts as they apply to REACTOR FEEDWATER SYSTEM: Turbine operation: TDRFPs-Only	2.8	62

272000 Radiation Monitoring										X		A3.08 - Ability to monitor automatic operations of the RADIATION MONITORING SYSTEM including: Meter indications	2.9	63
290003 Control Room HVAC											X	A4.01 - Ability to manually operate and/or monitor in the control room: Initiate/reset system	3.2	64
290002 Reactor Vessel Internals										X		A2.05 - Ability to (a) predict the impacts of the following on the REACTOR VESSEL INTERNALS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: †Exceeding thermal limits	3.7	65
K/A Category Point Totals:	2	1	0	2	2	0	0	2	2	1	0	Group Point Total:		12

Facility: James A. Fitzpatrick			Date of Exam: September 2012			
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.37	Knowledge of procedures, guidelines, or limitations associated with reactivity management.	4.3	66		
	2.1.1	Knowledge of conduct of operations requirements.	3.8	67		
	Subtotal			2		
2. Equipment Control	2.2.12	Knowledge of surveillance procedures.	3.7	68		
	2.2.43	Knowledge of the process used to track inoperable alarms.	3.0	69		
	2.2.35	Ability to determine Technical Specification Mode of Operation.	3.6	70		
	Subtotal			3		
3. Radiation Control	2.3.11	Ability to control radiation releases.	3.8	71		
	2.3.7	Ability to comply with radiation work permit requirements during normal or abnormal conditions.	3.5	72		
	2.3.5	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	2.9	73		
	Subtotal			3		
4. Emergency Procedures / Plan	2.4.50	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	4.2	74		
	2.4.6	Knowledge of EOP mitigation strategies.	3.7	75		
	Subtotal			2		
Tier 3 Point Total				10		

Tier / Group	Randomly Selected K/A	Reason for Rejection
The following topics / K/As were excluded from the systematic and random sampling process:		
1 / 1	295027 High Containment Temperature	This topic applies to plants with Mark III containments only. The facility has a Mark I containment.
1 / 2	295011 High Containment Temperature	This topic applies to plants with Mark III containments only. The facility has a Mark I containment.
2 / 1	207000 Isolation (Emergency) Condenser	This system is not installed at the facility.
2 / 1	209002 HPCS	This system is not installed at the facility.
2 / 2	201004 RSCS	This system is no longer installed at the facility.
2 / 2	201005 RCIS	This system is not installed at the facility.
G	2.2.3 Knowledge of the design, procedural, and operational differences between units.	This K/A applies to multi-unit facilities only.
G	2.2.4 Ability to explain the variations in control board/control room layouts, systems, instrumentation, and procedural actions between units at a facility.	This K/A applies to multi-unit facilities only.

The following K/As were rejected following the systematic and random sampling process:		
1 / 1	<p>295004 Partial or Complete Loss of DC Pwr</p> <p>AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Automatic load shedding: Plant-Specific</p>	<p>The facility does not have automatic load shedding features in response to partial or complete loss of D.C. power.</p> <p>Randomly re-selected AK1.05 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Loss of breaker protection</p>
1 / 1	<p>295016 Control Room Abandonment</p> <p>AA1.03 Ability to operate and/or monitor the following as they apply to CONTROL ROOM ABANDONMENT: RPIS</p>	<p>The facility does not have any method to operate and/or monitor RPIS following Control Room Abandonment.</p> <p>Randomly re-selected AA1.01 - Ability to operate and/or monitor the following as they apply to CONTROL ROOM ABANDONMENT: RPS</p>
1 / 1	<p>295038 High Off-site Release Rate</p> <p>EA1.07 Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Control room ventilation: Plant-Specific</p>	<p>Rejected EA1.07 due to over-sampling with Q64 (290003 Control Room HVAC A4.01 - Ability to manually operate and/or monitor in the control room: Initiate/reset system)</p> <p>Randomly re-selected EA1.01 - Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Stack Gas Monitoring System: Plant-Specific</p>
1 / 2	<p>295020 Inadvertent Cont. Iso.</p> <p>AK1.05 Knowledge of the operational implications of the following concepts as they apply to INADVERTENT CONTAINMENT ISOLATION: Loss of drywell/containment cooling</p>	<p>Rejected AK1.05 based on no system relationship between PCIS and loss of drywell/containment cooling at JAF.</p> <p>Randomly re-selected AK2.01 - Knowledge of the interrelations between INADVERTENT CONTAINMENT ISOLATION and the following: Main steam system (Note: Tier 1 totals were balanced by selecting from K2 Category)</p>

Facility: James A. FitzpatrickScenario No.: NRC-1Op-Test No.: 12-2

Examiners: _____ Operators: _____

Initial Conditions: Reactor power is approximately 100%. APRM A is bypassed. CRD Pump A is out of service for maintenance. Feedwater level control is selected to level column A.

Turnover: Swap Feedwater level control from level column A to B. Then lower Reactor power to 95% with recirculation flow in preparation for Turbine Valve testing.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N - BOP	Swap Feedwater Level Control from Level Column A to B OP-2A
2	N/A	R - BOP	Lower Reactor Power to 95% with Recirculation Flow OP-65, RAP-7.3.16
3	RR10:A	I - BOP	RWR MG A Speed Controller Failure Low AOP-8, AOP-32, OP-27
4	SW05:B SW15	C - BOP	Service Water Pump Trip with Failure to Auto-Start AOP-10
5	FW19:A	C - All	Trip of Condensate Pump A AOP-41, RAP-7.3.16, OP-65
6	FW19: (B-C)	C - All	Trip of Condensate Pumps B and C AOP-41, AOP-1
7	RP01:A RP09	I - ATC	Automatic Scram and ARI Fail to Insert Control Rods AOP-1
8	RR15:A	M - All	Coolant Leak Inside Containment AOP-39, EOP-2, EOP-4
9	HP07 Override	C - All	HPCI Injection Valve Fails to Open EOP-2

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

Facility: James A. Fitzpatrick		Scenario No.: NRC-1	Op-Test No.: 12-2
1. Total malfunctions (5-8) Events 3, 4, 5, 6, 7, 8, 9	7		
2. Malfunctions after EOP entry (1-2) Event 9	1		
3. Abnormal events (2-4) Events 3, 4, 5, 6	4		
4. Major transients (1-2) Event 8	1		
5. EOPs entered/requiring substantive actions (1-2) EOP-2, EOP-4	2		
6. EOP contingencies requiring substantive actions (0-2) EOP-2 Alternate Level Control, Emergency Depress	2		
7. Critical tasks (2-3)	2		
CRITICAL TASK DESCRIPTIONS: CT-1: Given the need for a Reactor scram and failure of automatic actions to insert control rods, the crew will manually scram the Reactor, in accordance with AOP-1. CT-2: Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain RPV water level above the Top of Active Fuel (TAF), the crew will initiate actions for an RPV Blowdown before RPV water level lowers below -19", in accordance with EOP-2.			

Facility: James A. FitzpatrickScenario No.: NRC-2Op-Test No.: 12-2

Examiners: _____ Operators: _____

Initial Conditions: Reactor power is approximately 85%. RCIC is out of service for maintenance.

Turnover: Raise Reactor power to 90% with Recirculation flow.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R - BOP	Raise Reactor Power to 90% with Recirculation Flow OP-65, RAP-7.3.16
2	RD06:B	C - ATC	CRD Pump B Trips AOP-69
3	TU04:E,F	C - BOP	Turbine Vibrations AOP-66, RAP-7.3.16
4	MC01	C - ATC	Loss of Main Condenser Vacuum AOP-31, RAP-7.3.16, AOP-1
5	RP01AA RP01BA RP09	M - All	Failure of RPS and ARI to Actuate EOP-2, EOP-3
6	SL03:A,B	C - All	SLC Discharge Relief Valves Lift EOP-3
7	EG01 TC04	C - All	Main Generator Trip and One Turbine Bypass Valve Fails Closed EOP-3
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor			

Facility: James A. Fitzpatrick		Scenario No.: NRC-2	Op-Test No.: 12-2
1. Total malfunctions (5-8) Events 2, 3, 4, 5, 6, 7	6		
2. Malfunctions after EOP entry (1-2) Events 6 & 7	2		
3. Abnormal events (2-4) Events 2, 3, 4	3		
4. Major transients (1-2) Event 5	1		
5. EOPs entered/requiring substantive actions (1-2) EOP-2	1		
6. EOP contingencies requiring substantive actions (0-2) EOP-3	1		
7. Critical tasks (2-3)	2		
CRITICAL TASK DESCRIPTIONS: CT-1: Given a failure to scram with Reactor power above 2.5%, the crew will terminate and prevent all RPV injection except SLC, RCIC and CRD, in accordance with EOP-3. CT-2: Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.			

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Examination Level: <u>RO</u>		Operating Test Number: <u>12-2</u>
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, P 2010 NRC	Manually Calculate Core Thermal Power RAP-7.3.3, K/A 2.1.7
Conduct of Operations	S, N	Perform HPCI Lineup Verification Per ST-4B ST-4B, K/A 2.1.31
Equipment Control	R, N	Determine Tagout Boundary For RBCLC Pump Work EN-OP-102, K/A 2.2.13
Radiation Control		
Emergency Procedures/Plan	S, N	Conduct Emergency Announcement And Protected Area Evacuation OP-63, K/A 2.4.43
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, (S)imulator, or Class(R)oom (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)		

Facility: <u>James A. Fitzpatrick</u>		Date of Examination: <u>September 2012</u>
Exam Level: <u>RO</u>		Operating Test No.: <u>12-2</u>
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. EDG Load Run With Governor Failure K/A 264000 A4.04, ST-9BB	S, M, A, EN 2010 NRC	6
b. Switching Relay Room Supply and Exhaust Fans K/A 288000 A4.01, OP-56	S, D, P, EN 2012 NRC	9
c. Start Recirculation Pump With High Vibrations K/A 202001 A4.01, OP-27	S, D, A	1
d. Initiate RCIC In Pressure Control With Speed Failure K/A 217000 A4.01, OP-19	S, D, P, A, L 2010 NRC	4
e. Restore ESW After Injection Into RBCLC K/A 400000 A4.01, OP-21, OP-40	S, N	8
f. Core Spray Loop A Shutdown K/A 209001 A4.01, OP-14	S, N, EN, L	2
g. Perform APRM Gain Adjustment K/A 215005 A4.06, ST-5D	S, D	7
h. Initiate Torus Cooling With LPCI Signal Present K/A 219000 A4.02, OP-13B	S, D, EN, L	5
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Restore H2/O2 Monitors Following Isolation K/A 223002 A2.09, EP-2, OP-37	D, A, E, L	5
j. Cross-tie Fire Protection System to Inject to RHR Service Water K/A 295031 EA1.08, EP-8	D, E, L	8
k. RCIC Turbine Trip/Throttle Valve Reset With Tappet Failure K/A 217000 A2.02, OP-19	R, M, A, E, L	2
<p>[@] All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must 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	$\leq 9 / \leq 8 / \leq 4$
(E)mergency or abnormal in-plant	$\geq 1 / \geq 1 / \geq 1$
(EN)gineered safety feature	- / - / ≥ 1 (control room system)
(L)ow-Power / Shutdown	$\geq 1 / \geq 1 / \geq 1$
(N)ew or (M)odified from bank including 1(A)	$\geq 2 / \geq 2 / \geq 1$
(P)revious 2 exams	$\leq 3 / \leq 3 / \leq 2$ (randomly selected)
(R)CA	$\geq 1 / \geq 1 / \geq 1$
(S)imulator	