Facility:	James A. Fitzpatrick	Date of Exam:	September 2014

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 & Plant Evolutions	1	3	4	3				3	3			4	20	3	4		7
	2	1	2	1				1	1			1	7	1	2		3
	Tier Totals	4	6	4				4	4			5	27	4	6		10
2. Plant Systems	1	3	2	3	3	2	3	2	1	2	3	2	26	2	3		5
	2	2	0	1	1	1	1	1	2	1	1	1	12	0	2	1	3
	Tier Totals	5	2	4	4	3	4	3	3	3	4	3	38	4		4	8
3. Generic Knowledge & Abilities Categories		1			2			3			4		10	1	2	3	4	7
		3			2			2			3			1	2	2	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 that are not included on the outline should be added. Refer to section D.1.b of ES-401, for guidance regarding 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 KAs 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/A's
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) 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 10CFR55.43

JAF 14-2 NRC Exam
Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295030 Low Suppression Pool Water Level / 5					X		EA2.03 - Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL: Reactor pressure	3.9	76
295019 Partial or Complete Loss of Instrument Air / 8					X		AA2.02 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Status of safety-related instrument air system loads (see AK2.1 - AK2.19)	3.7	77
295028 High Drywell Temperature / 5					X		EA2.05 - Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE: Torus/suppression chamber pressure: Plant-Specific	3.8	78
295038 High Off-site Release Rate / 9						X	2.4.4 - Emergency Procedures / Plan: Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	4.7	79
700000 Generator Voltage and Electric Grid Disturbances						X	2.2.37 - Ability to determine operability and/or availability of safety related equipment.	4.6	80
295016 Control Room Abandonment / 7						X	2.4.11 - Emergency Procedures / Plan: Knowledge of abnormal condition procedures.	4.2	81
295023 Refueling Accidents / 8						X	2.4.41 - Emergency Procedures / Plan: Knowledge of the emergency action level thresholds and classifications.	4.6	82
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Natural circulation	3.5	39
295023 Refueling Accidents / 8	X						AK1.03 - Knowledge of the operational implications of the following concepts as they apply to REFUELING ACCIDENTS: Inadvertent criticality	3.7	40
600000 Plant Fire On-site / 8	X						AK1.02 - Knowledge of the operation applications of the following concepts as they apply to Plant Fire On Site: Fire Fighting	2.9	41
295006 SCRAM / 1		X					AK2.07 - Knowledge of the interrelations between SCRAM and the following: Reactor pressure control	4.0	42
295030 Low Suppression Pool Water Level / 5		X					EK2.07 - Knowledge of the interrelations between LOW SUPPRESSION POOL WATER LEVEL and the following: Downcomer/horizontal vent submergence	3.5	43
295004 Partial or Complete Loss of DC Power / 6		X					AK2.01 - Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following: Battery charger	3.1	44
295016 Control Room Abandonment / 7			X				AK3.03 - Knowledge of the reasons for the following responses as they apply to CONTROL ROOM ABANDONMENT: Disabling control room controls	3.5	45
295025 High Reactor Pressure / 3			X				EK3.03 - Knowledge of the reasons for the following responses as they apply to	3.8	46

JAF 14-2 NRC Exam
Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
							HIGH REACTOR PRESSURE: HPCI operation: Plant-Specific		
295031 Reactor Low Water Level / 2			X				EK3.05 - Knowledge of the reasons for the following responses as they apply to REACTOR LOW WATER LEVEL: Emergency depressurization	4.2	47
295003 Partial or Complete Loss of AC Power / 6				X			AA1.02 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Emergency generators	4.2	48
295019 Partial or Complete Loss of Instrument 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	49
295038 High Off-site Release Rate / 9				X			EA1.07 - Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Control room ventilation: Plant-Specific	3.6	50
295024 High Drywell Pressure / 5					X		EA2.02 - Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Drywell temperature	3.9	51
295018 Partial or Complete Loss of CCW / 8					X		AA2.04 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: System flow	2.9	52
295021 Loss of Shutdown Cooling / 4					X		AA2.07 - Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING: Reactor recirculation flow	2.9	53
700000 Generator Voltage and Electric Grid Disturbances						X	2.4.30 - Emergency Procedures / Plan: Knowledge of events related to system operation / status that must be reported to internal organizations or external agencies, such as the state, the NRC, or the transmission system operator.	2.7	54
295005 Main Turbine Generator Trip / 3						X	2.1.20 - Conduct of Operations: Ability to interpret and execute procedure steps.	4.6	55
295026 Suppression Pool High Water Temperature / 5						X	2.4.18 - Emergency Procedures / Plan: Knowledge of the specific bases for EOPs.	3.3	56
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	57
295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown / 1						X	2.4.4 - Emergency Procedures / Plan: Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	4.5	58
K/A Category Totals:	3	4	3	3	3/3	4/4	Group Point Total:		20/7

JAF 14-2 NRC Exam
Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2

EAPE # / Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
295015 Incomplete SCRAM / 1					X		AA2.02 - Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM: Control rod position	4.2	83
295036 Secondary Containment High Sump/Area Water Level / 5						X	2.4.47 - Emergency Procedures / Plan: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	4.2	84
295009 Low Reactor Water Level / 2						X	2.4.31 - Emergency Procedures / Plan: Knowledge of annunciator alarms, indications, or response procedures.	4.1	85
295029 High Suppression Pool Water Level / 5	X						EK1.01 - Knowledge of the operational implications of the following concepts as they apply to HIGH SUPPRESSION POOL WATER LEVEL: Containment integrity	3.4	59
295002 Loss of Main Condenser Vacuum / 3		X					AK2.05 - Knowledge of the interrelations between LOSS OF MAIN CONDENSER VACUUM and the following: Feedwater system	2.7	60
295009 Low Reactor Water Level / 2			X				AK3.01 - Knowledge of the reasons for the following responses as they apply to LOW REACTOR WATER LEVEL: Recirculation pump run back: Plant-Specific	3.2	61
295010 High Drywell Pressure / 5				X			AA1.01 - Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE: Drywell ventilation/cooling	3.4	62
295020 Inadvertent Containment Isolation / 5 & 7					X		AA2.03 - Ability to determine and/or interpret the following as they apply to INADVERTENT CONTAINMENT ISOLATION: Reactor power	3.7	63
500000 High Containment Hydrogen Concentration / 5						X	2.1.31 - Conduct of Operations: Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.	4.6	64
295008 High Reactor Water Level / 2		X					AK2.09 - Knowledge of the interrelations between HIGH REACTOR WATER LEVEL and the following: Reactor water cleanup system (ability to drain): Plant-Specific	3.1	65
K/A Category Totals:	1	2	1	1	1/1	1/2	Group Point Total:		7/3

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
259002 Reactor Water Level Control System								X				A2.01 - Ability to (a) predict the impacts of the following on the REACTOR WATER LEVEL CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of any number of main steam flow inputs	3.4	86
223002 PCIS/Nuclear Steam Supply Shutoff								X				A2.11 - Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Standby liquid initiation	3.9	87
262001 AC Electrical Distribution											X	2.2.38 - Equipment Control: Knowledge of conditions and limitations in the facility license.	4.5	88
215003 IRM											X	2.1.25 - Conduct of Operations: Ability to interpret reference materials, such as graphs, curves, tables, etc.	4.2	89
215005 APRM / LPRM											X	2.1.7 - Conduct of Operations: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.7	90
203000 RHR/LPCI: Injection Mode	X											K1.01 - Knowledge of the physical connections and/or cause-effect relationships between RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) and the following: Condensate storage and transfer system: Plant-Specific	2.8	1
400000 Component Cooling Water	X											K1.04 - Knowledge of the physical connections and / or cause-effect relationships between CCWS and the following: Reactor coolant system, in order to determine source (s)	2.9	2
209001 LPCS		X										K2.02 - Knowledge of electrical power supplies to the following: Valve power	2.5	3
212000 RPS		X										K2.01 - Knowledge of electrical power supplies to the following: RPS motor-generator sets	3.2	4

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
262002 UPS (AC/DC)			X									K3.11 - Knowledge of the effect that a loss or malfunction of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) will have on following: MSIVs: Plant-Specific	2.8	5
205000 Shutdown Cooling			X									K3.02 - Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) will have on following: Reactor water level: Plant-Specific	3.2	6
223002 PCIS/Nuclear Steam Supply Shutoff				X								K4.06 - Knowledge of PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF design feature(s) and/or interlocks which provide for the following: Once initiated, system reset requires deliberate operator action	3.4	7
215004 Source Range Monitor				X								K4.04 - Knowledge of SOURCE RANGE MONITOR (SRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Changing detector position	2.8	8
259002 Reactor Water Level Control					X							K5.03 - Knowledge of the operational implications of the following concepts as they apply to REACTOR WATER LEVEL CONTROL SYSTEM: Water level measurement	3.1	9
218000 ADS					X							K5.01 - Knowledge of the operational implications of the following concepts as they apply to AUTOMATIC DEPRESSURIZATION SYSTEM: ADS logic operation	3.8	10
261000 SGTS						X						K6.05 - Knowledge of the effect that a loss or malfunction of the following will have on the STANDBY GAS TREATMENT SYSTEM: Reactor protection system: Plant-Specific	3.1	11
217000 RCIC						X						K6.03 - Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC): Suppression pool water supply	3.5	12
264000 EDGs							X					A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the EMERGENCY GENERATORS (DIESEL/JET) controls including: Lube oil temperature	3.0	13

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
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	14
263000 DC Electrical Distribution			X									K3.03 - Knowledge of the effect that a loss or malfunction of the D.C. ELECTRICAL DISTRIBUTION will have on following: Systems with D.C. components (i.e. valves, motors, solenoids, etc.)	3.4	15
215005 APRM / LPRM								X				A2.07 - Ability to (a) predict the impacts of the following on the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions: Recirculation flow channels flow mismatch	3.2	16
206000 HPCI									X			A3.02 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: System Flow: BWR-2,3,4	3.8	17
239002 SRVs									X			A3.04 - Ability to monitor automatic operations of the RELIEF/SAFETY VALVES including: Acoustical monitor noise: Plant-Specific	3.6	18
211000 SLC										X		A4.07 - Ability to manually operate and/or monitor in the control room: Lights and alarms	3.6	19
300000 Instrument Air										X		A4.01 - Ability to manually operate and/or monitor in the control room: Pressure gauges	2.6	20
262001 AC Electrical Distribution											X	2.4.21 - Emergency Procedures / Plan: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.0	21
217000 RCIC											X	2.4.2 - Emergency Procedures / Plan: Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.	4.5	22

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
263000 DC Electrical Distribution	X											K1.01 - Knowledge of the physical connections and/or cause-effect relationships between D.C. ELECTRICAL DISTRIBUTION and the following: A.C. electrical distribution	3.3	23
211000 SLC				X								K4.08 - Knowledge of STANDBY LIQUID CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: System initiation upon operation of SBLC control switch	4.2	24
206000 HPCI										X		A4.09 - Ability to manually operate and/or monitor in the control room: Suppression pool level: BWR-2,3,4	3.8	25
259002 Reactor Water Level Control						X						K6.01 - Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR WATER LEVEL CONTROL SYSTEM: Plant air systems	3.2	26
K/A Category Totals:	3	2	3	3	2	3	2	1/2	2	3	2/3	Group Point Total:		26/5

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
202002 Recirculation Flow Control								X				A2.09 - Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation flow mismatch: Plant-Specific	3.3	91
245000 Main Turbine Generator and Auxiliary Systems											X	2.4.50 - Emergency Procedures / Plan: Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	4.0	92
288000 Plant Ventilation Systems								X				A2.01 - Ability to (a) predict the impacts of the following 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: High drywell pressure: Plant-Specific	3.4	93
233000 Fuel Pool Cooling/Cleanup	X											K1.14 - Knowledge of the physical connections and/or cause-effect relationships between FUEL POOL COOLING AND CLEAN-UP and the following: Reactor building ventilation	2.5	27
259001 Reactor Feedwater	X											K1.20 - Knowledge of the physical connections and/or cause-effect relationships between REACTOR FEEDWATER SYSTEM and the following: Main steam system: TDRFPs-Only	3.1	28
239001 Main and Reheat Steam			X									K3.02 - Knowledge of the effect that a loss or malfunction of the MAIN AND REHEAT STEAM SYSTEM will have on following: Condenser	3.1	29
202002 Recirculation Flow Control				X								K4.03 - Knowledge of RECIRCULATION FLOW CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: Signal failure detection: Plant-Specific	3.0	30
241000 Reactor/Turbine Pressure Regulating System					X							K5.03 - Knowledge of the operational Implications of the following concepts as they apply to REACTOR/TURBINE PRESSURE REGULATING SYSTEM: Reactor power vs. reactor pressure	3.5	31

JAF 14-2 NRC Exam
Written Examination Outline
Plant Systems – Tier 2 Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A2	A 3	A 4	G		Imp.	Q#
286000 Fire Protection						X						K6.01 - Knowledge of the effect that a loss or malfunction of the following will have on the FIRE PROTECTION SYSTEM: A.C. electrical distribution: Plant-Specific	3.1	32
272000 Radiation Monitoring							X					A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the RADIATION MONITORING SYSTEM controls including: Lights, alarms, and indications associated with normal operations	3.2	33
234000 Fuel Handling Equipment								X				A2.01 - Ability to (a) predict the impacts of the following on the FUEL HANDLING EQUIPMENT; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Interlock failure	3.3	34
288000 Plant Ventilation Systems									X			A3.01 - Ability to monitor automatic operations of the PLANT VENTILATION SYSTEMS including: Isolation/initiation signals	3.8	35
271000 Offgas										X		A4.09 - Ability to manually operate and/or monitor in the control room: Offgas system controls/components	3.3	36
290003 Control Room HVAC											X	2.4.47 - Emergency Procedures / Plan: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	4.2	37
215001 Traversing In-core Probe								X				A2.01 - Ability to (a) predict the impacts of the following on the TRAVERSING IN-CORE PROBE; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low reactor water level: Mark-I&II(Not-BWR1)	2.7	38
K/A Category Totals:	2	0	1	1	1	1	1	2/2	1	1	1/1	Group Point Total:		12/3

Facility:	James A. Fitzpatrick		Date: September 2014			
Category	K/A #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.34	Knowledge of primary and secondary plant chemistry limits.			3.5	94
	2.1.32	Ability to explain and apply all system limits and precautions.	3.8	66		
	2.1.26	Knowledge of industrial safety procedures (such as rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen and hydrogen).	3.4	67		
	2.1.30	Ability to locate and operate components, including local controls.	4.4	75		
	Subtotal			3		1
2. Equipment Control	2.2.18	Knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritizaion, etc.			3.9	95
	2.2.40	Ability to apply technical specifications for a system.			4.7	99
	2.2.1	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.	4.5	68		
	2.2.43	Knowledge of the process used to track inoperable alarms.	3.0	69		
	Subtotal			2		2
3. Radiation Control	2.3.14	Knowledge of radiation or containment hazards that may arise during normal, abnormal, or emergency conditions or activities.			3.8	96
	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	100
	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	2.9	70		

	2.3.12	Knowledge of Radiological Safety Principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.2	71		
	Subtotal			2		2
4. Emergency Procedures / Plan	2.4.35	Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.			4.0	97
	2.4.30	Knowledge of events related to system operation / status that must be reported to internal organizations or external agencies, such as the state, the NRC, or the transmission system operator.			4.1	98
	2.4.21	Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.0	72		
	2.4.27	Knowledge of "fire in the plant" procedures.	3.4	73		
	2.4.28	Knowledge of procedures relating to a security event (non-safeguards information).	3.2	74		
	Subtotal			3		2
Tier 3 Point Total				10		7

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:		
2 / 2	Question 91 202002 Recirculation Flow Control A2.08 - Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: FCV lockup: BWR-5,6	The facility is a BWR-4 and does not have Recirculation flow control valves (FCVs). Randomly re-selected K/A 202002 Recirculation Flow Control A2.01 - Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation pump trip
2 / 2	Question 28 259001 Reactor Feedwater K2.01 - Knowledge of electrical power supplies to the following: Reactor feedwater pump(s): Motor-Driven-Only	The facility has steam-driven Feedwater pumps, not motor-driven Feedwater pumps. Randomly re-selected K/A 259001 Reactor Feedwater K1.20 - Knowledge of the physical connections and/or cause-effect relationships between REACTOR FEEDWATER SYSTEM and the following: Main steam system: TDRFPs-Only
2 / 2	Question 31 241000 Reactor/Turbine Pressure Regulating System K5.07 - Knowledge of the operational Implications of the following concepts as they apply to REACTOR/TURBINE PRESSURE REGULATING SYSTEM: Unitized actuator operation: Fermi-Only	The facility does not have a unitized actuator as part of the Reactor/Turbine Pressure Regulating System. Randomly re-selected K/A 241000 Reactor/Turbine Pressure Regulating System K5.03 - Knowledge of the operational Implications of the following concepts as they apply to REACTOR/TURBINE PRESSURE REGULATING SYSTEM: Reactor power vs. reactor pressure

2 / 1	Question 17 206000 HPCI A3.08 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: Condensate storage tank level: BWR-2,3,4	Unable to be develop a question for the randomly selected K/A without overlapping with Question 12. Randomly reselected K/A 206000 HPCI A3.02 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including: System Flow: BWR-2,3,4
2 / 1	Question 21 262001 AC Electrical Distribution 2.4.41 - Emergency Procedures / Plan: Knowledge of the emergency action level thresholds and classifications.	Unable to develop a question at the correct license level for the randomly selected generic K/A related to the given system. Randomly reselected K/A 262001 AC Electrical Distribution 2.4.21 - Emergency Procedures / Plan: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.
2 / 1	Question 23 263000 DC Electrical Distribution K5.01 - Knowledge of the operational implications of the following concepts as they apply to D.C. ELECTRICAL DISTRIBUTION: Hydrogen generation during battery charging	Unable to develop a question without overlap with question on last NRC exam. Resampling to limit overlap. Randomly reselected K/A 263000 DC Electrical Distribution K1.01 - Knowledge of the physical connections and/or cause-effect relationships between D.C. ELECTRICAL DISTRIBUTION and the following: A.C. electrical distribution

2 / 2	Question 30 202002 Recirculation Flow Control K4.01 - Knowledge of RECIRCULATION FLOW CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: Scoop tube break: Plant-Specific	The facility does not have a design feature or interlock specifically related to break of a scoop tube. Randomly re-selected K/A 202002 Recirculation Flow Control K4.03 - Knowledge of RECIRCULATION FLOW CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: Signal failure detection: Plant-Specific
1 / 1	Question 58 295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown 2.4.47 - Emergency Procedures / Plan: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	The randomly selected generic K/A is oversampled on this exam (Questions 37, 58, 84, 89). Randomly re-selected K/A 295037 SCRAM Conditions Present and Reactor Power Above APRM Downscale or Unknown 2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.
1 / 2	Question 61 295009 Low Reactor Water Level AK3.02 - Knowledge of the reasons for the following responses as they apply to LOW REACTOR WATER LEVEL: Reactor feedpump runout flow control: Plant-Specific	The facility does not have a specific Feedwater pump run-out flow control feature. Randomly re-selected K/A 295009 Low Reactor Water Level AK3.01 - Knowledge of the reasons for the following responses as they apply to LOW REACTOR WATER LEVEL: Recirculation pump run back: Plant-Specific.

1 / 1	Question 81 295016 Control Room Abandonment 2.2.42 - Equipment Control: Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	The randomly selected generic K/A does not support developing an operationally relevant question for the randomly selected abnormal plant evolution. Randomly re-selected K/A 295016 Control Room Abandonment 2.4.11 - Emergency Procedures / Plan: Knowledge of abnormal condition procedures.
2 / 1	Question 89 215003 IRM 2.4.47 - Emergency Procedures / Plan: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	The randomly selected generic K/A is oversampled on this exam. Randomly re-selected K/A 215003 IRM 2.1.25 - Emergency Procedures / Plan: Ability to interpret reference materials, such as graphs, curves, tables, etc.
3	Question 94 2.1.45 - Ability to identify and interpret diverse indications to validate the response of another indicator.	The randomly selected generic K/A does not support developing a written question at the appropriate license level and is tested extensively during the operating portion of the examination. Randomly re-selected K/A 2.1.34 – Knowledge of primary and secondary plant chemistry limits.
2 / 2	Question 91 202002 Recirculation Flow Control A2.01 - Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation pump trip	Unable to develop an appropriate SRO-level question for the randomly selected K/A. Randomly re-selected K/A 202002 Recirculation Flow Control A2.09 - Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Recirculation flow mismatch: Plant-Specific.

1 / 1	Question 80 700000 Generator Voltage and Electric Grid Disturbances 2.4.45 - Ability to prioritize and interpret the significance of each annunciator or alarm.	The randomly selected generic K/A does not support developing an operationally relevant question without testing minutia for the randomly selected abnormal plant evolution. Randomly re-selected K/A 700000 Generator Voltage and Electric Grid Disturbances 2.2.37 - Ability to determine operability and/or availability of safety related equipment.
2 / 1	Question 15 263000 DC Electrical Distribution A2.01 - Ability to (a) predict the impacts of the following on the D.C. ELECTRICAL DISTRIBUTION; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Grounds	Unable to write an operationally discriminating question for the randomly selected K/A. Randomly re-selected K/A 263000 DC Electrical Distribution K3.03 - Knowledge of the effect that a loss or malfunction of the D.C. ELECTRICAL DISTRIBUTION will have on following: Systems with D.C. components (i.e. valves, motors, solenoids, etc.).

Facility: James A. Fitzpatrick
Examination Level: RO

Date of Examination: September 2014
Operating Test Number: 14-2

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, D, S 14-1 NRC	Perform RHR Lineup Verification K/A 2.1.29 (4.1), ST-2AN
Conduct of Operations	M, R	Re-activation of RO License K/A 2.1.4 (3.3), ODSO-30
Equipment Control	M, R	Perform ST-23C, Jet Pump Operability – Two Loop K/A 2.2.12 (3.7), ST-23C
Radiation Control	D, R	Determine Worker Exposure for Emergent Work K/A 2.3.4 (3.2), EN-RP-201
Emergency Procedures/Plan		

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: James A. Fitzpatrick		Date of Examination: September 2014
Examination Level: SRO		Operating Test Number: 14-2
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, D, R 12-1 NRC	Verify Fuel Movement Sheets K/A 2.1.35 (3.9), OSP-66.001
Conduct of Operations	D, R	Re-activation of SRO License K/A 2.1.4 (3.8), ODSO-30
Equipment Control	M, R	Review ST-23C, Jet Pump Operability – Two Loop K/A 2.2.12 (4.1), ST-23C
Radiation Control	D, R	Determine Visitor RCA Access Requirements K/A 2.3.4 (3.7), EN-RP-201, EN-RP-202
Emergency Procedures/Plan	M, R	Classify General Emergency, Determine PARs, and Perform Event Notification K/A 2.4.44 (4.4), IAP-1, IAP-2
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: James A. Fitzpatrick		Date of Examination: September 2014
Exam Level: RO/SRO		Operating Test No.: 14-2
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. Restore CRD to Normal Alignment Following ATWS, CRD Controller Fails in Automatic K/A 201001 A2.07 (3.2/3.1), EP-3, OP-25	P, D, A, S 2014-1 NRC	1
b. Restore ESW After Injection Into RBCLC K/A 400000 A4.01 (3.1/3.0), OP-21, OP-40	P, D, S 2012-2 NRC	8
c. Start First Feedwater Pump K/A 259001 A4.02 (3.9/3.7), OP-2A	N, L, S	2
d. Start EDGs A and C Due to Hurricane Warning K/A 264000 A4.04 (3.7/3.7), OP-22	N, EN, S	6
e. Restore Shutdown Cooling After Isolation, RHR Pump Trips K/A 205000 A4.01 (3.7/3.7), AOP-30	M, A, L, S	4
f. Manually Isolate Reactor Building Ventilation, Low Reactor Building D/P K/A 261000 A4.06 (3.3/3.6), OP-51A, OP-20	M, A, EN, S	9
g. Reset Group 2 Isolation, Restore RWCU K/A 223002 A4.03 (3.6/3.5), AOP-15, OP-28	M, EN, S	5
h. **(RO Only)** Perform Rod Worth Minimizer On-Line Diagnostic Test K/A 201006 A4.02 (2.9/2.9), ST-20A	N, S	7
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Vent Torus to Lower Primary Containment Pressure K/A 295010 AA1.05 (3.1/3.4), EP-6	D, A, E	5
j. Lineup SLC Test Tank for Injection K/A 295031 EA1.08 (3.8/3.9), EP-8	D, R, E	2
k. Electrically Disarm a CRD HCU K/A 201003 A2.02 (3.7/3.8), OP-25	D, R	1

@	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.

* 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
(EN)gineered safety feature	- / - / ≥1 (control room system)
(L)ow-Power / Shutdown	≥ 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: James A. Fitzpatrick Scenario No.: NRC-1 Op-Test No.: 14-2

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: The plant is operating at approximately 90% power. RCIC is out of service for maintenance. Torus cooling is in service on RHR loop A.

Turnover: Secure Torus cooling per OP-13B sections F.1 and F.7.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Shutdown Torus Cooling OP-13B
2	SW04:A	C – SRO	RHRSW Pump A Trip ARP 09-3-1-25, Technical Specifications
3	NM14:B	I – ATC, SRO	APRM B Fails Upscale OP-16, ARP 09-5-1-4
4	HP05	I – BOP, SRO	HPCI Inadvertent Initiation AOP-77, AOP-32, Technical Specifications
5	FW05:A FW01:A	C – BOP R – ATC, SRO	Feedwater Pump A High Vibration and Pump Trip ARP 09-6-4-11, AOP-41
6	RR15:A MS02:A	M – All	Loss of Coolant Accident EOP-2, EOP-4
7	FW01:B HP02	C – All	Feedwater Pump B Trip, HPCI Trip EOP-2
8	ED43:A ED43:B	C – All	Loss of Offsite Power AOP-72

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

Facility: James A. Fitzpatrick Scenario No.: NRC-2 Op-Test No.: 14-2

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: The plant is operating at approximately 99% power. Air Compressor B is out of service for maintenance. Core Spray pump A is ready for full flow testing. Main Generator reactive load is at minimum per Power Control request.

Turnover: Perform Core Spray full flow testing per ST-3PA, starting at step 8.7.6.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Perform Core Spray Full Flow Test ST-3PA
2	Override	C – BOP, SRO	Core Spray Pump Overload ARP 09-3-1-31, Technical Specifications
3	RD06 RD09	C – ATC, SRO	Control Rod Drive Pump Trip, One Control Rod Drive Accumulator Low Pressure AOP-69, ARP-09-5-1-43, Technical Specifications
4	TU04 MC01	R – ATC C – ATC, SRO	Main Turbine Bearing High Vibration; Loss of Main Condenser Vacuum AOP-66, AOP-31, AOP-1
5	RP01AB RP01BB RP09	M – All	Failure of RPS and ARI to Actuate EOP-2, EOP-3
6	SL02 SL01 RR13	C – ATC, SRO	First SLC Squib Valve Fails to Fire, Second SLC Pump Trips, Recirculation Pumps Fail to Automatically Trip EOP-3
7	EG01 TC04	C – BOP, SRO	Main Generator Trip, Two Turbine Bypass Valves Fail Closed EOP-3

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

Facility: James A. Fitzpatrick Scenario No.: NRC-3 Op-Test No.: 14-2

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: The plant is operating at approximately 100% power. Air Compressor B is out of service for maintenance.

Turnover: Swap RBCLC pumps per OP-40 section G.1. Then lower Reactor power to 95% using Recirculation flow.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Swap RBCLC Pumps OP-40
2	N/A	R – ATC, SRO	Lower Reactor Power to 95% Using Recirculation Flow OP-27
3	RR23:B	I – All	Recirc Flow Unit Failure OP-16, Technical Specifications
4	ED21:A	C – BOP, SRO	Electrical Fault on Bus L-15 AOP-18A, Technical Specifications
5	AD06:C	C – BOP, SRO	SRV C Inadvertently Opens AOP-36
6	AD06:C MS16:G	M – All	SRV C Re-Opens, SRV Tailpipe Break Into Torus Airspace AOP-36, AOP-1, EOP-2, EOP-4
7	TC11	I – ATC, SRO	Main Turbine Fails to Trip AOP-1
8	RH01 Remotes Overrides	C – BOP, SRO	RHR Pump Trip, RHR Pump Suction Valve Fails Closed, RHRSW Crossties Fail Closed EOP-4, EOP-2

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

Facility: James A. Fitzpatrick Scenario No.: NRC-4 Op-Test No.: 14-2

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: The plant is operating at approximately 65% power. Circulating Water pump C is ready to be returned to service following maintenance.

Turnover: Start Circulating Water pump C per OP-4 section D.17. Then, raise Reactor power using Recirculation flow per the provided reactivity instruction.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Start Circulating Water Pump C OP-4
2	N/A	R – ATC, SRO	Raise Reactor Power with Recirculation Flow OP-27
3	Override	I – ATC, SRO	Recirculation Pump B Runs High OP-27, Technical Specifications
4	Override	C – BOP, SRO	Loss of Steam Packing Exhauster A ARP 09-7-3-43, OP-24D
5	SW01:B	C – BOP, SRO	Loss of RBCLC Flow to Recirculation Pump B OP-27, AOP-8, Technical Specifications
6	MS05	M – All	Main Steam Leak into Turbine Building AOP-40, AOP-1, EOP-2
7	RP12	I – ATC, SRO	All MSIVs Fail to Automatically Close AOP-40
8	FW03/04 RD06 Override	M – All	Loss of High Pressure Injection EOP-2
9	Override HP02	I – BOP, SRO	HPCI Flow Controller Failure in Automatic, HPCI Trips OP-15, EOP-2
10	RC02 RC03 AD01	I - All	RCIC Fails to Automatically Initiate, RCIC Trips, ADS Fails to Automatically Initiate OP-19, EOP-2

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