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May 20, 2003
JAFP-03-0071

Mr. J. Williams, Examiner/Inspector
United States Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

SUBJECT **James A. FitzPatrick Nuclear Power Plant**
Docket No. 50-333
Licensed Operator Initial Examination Outlines

Dear Sir:

In accordance with NUREG-1021 Draft Revision 9, please find the attached Initial License Examination written and operating outlines. Random sampling for written test items was completed per ES-401, Attachment 1.

Should you have any question concerning this report, please direct them to Mr. Richard DeVercelly, Senior Operations Instructor, at (315) 349-6074.

Very truly yours,

T.A. SULLIVAN

TAS:PJB:SR:sr
Enclosure

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SAMPLE PLAN CHANGES 5/20/03

RO Emergency Plan JPM

- Originally to perform an EAP-1.1 off site notification communicator function.
- In reviewing, it was determined that this JPM was too similar to a JPM performed in the last NRC examination.
- The K/A 2.4.43 was retained and the JPM changed to complete a related emergency communication function, which activates the ERO per EAP-17.

RO/SRO JPM (c) to conduct Emergency Rod In Functional Test

- Upon further review it was discovered that this JPM was an alternate path JPM
- This brings the total to 5 Alternate Path JPM's. Still within the guidance of 4-6.
- Walkthrough Outline pages 1, 3, 5 and 7 updated th reflect alternate path status.

LOI-03-01 NRC/AUDIT EXAMINATION
OVERLAP MATRIX

NRC ITEM NUMBER		TIER/ GROUP	AUDIT ITEM NUMBER		TIER/ GROUP	NUREG-1123 K/A
RO	SRO		RO	SRO		
1	2	1/1	21	24	1/2	2.3.2
8	9	1/1	7	8	1/1	2.2.26
12	13	1/1	13	16	1/1	295025 EA1.07
	14	1/1	67	89	3	2.1.23
16	19	1/1	38	50	2/1	2.4.48
24	28	1/2	71	93	3	2.3.10
31	39	2/1	72	95	3	2.3.1
	42	1/2		56	3	2.3.9
	42	1/2	26	31	1/2	2.3.9
69	91	3	69	91	3	2.2.12
71	93	3		56	3	2.3.9
71	93	3	26	31	1/2	2.3.9
72	95	3	72	95	3	2.3.1
	72	3		1	1/1	2.2.32
	74	3	35	47	2/1	2.3.4
	100	3		61	3	2.4.22
	100	3	25	29	1/2	2.4.22
SRO Admin JPM "LCO"		N/A		14	1/2	2.1.12
SRO Admin JPM "ST Results"		N/A	69	91	3	2.2.12
RO Admin JPM "ST Results"		N/A	69	91	3	2.2.12
RO Admin JPM "ST-5D/E"		N/A	5	6	1/1	2.1.7
RO Admin JPM "E-Plan"		N/A	RO Admin JPM "E-Plan"		N/A	2.4.43

Facility:	James A FitzPatrick	Date of Exam:	7/21-25/3	~~Exam Level:~~

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 *	~~Point~~ Total	K	A	A 2	G *	Total
1. Emergency & Abnormal Plant Evolutions	1	4	4	2				3	4			3	~~26~~20	1	0	5	2	8
	2	0	2	1				2	1			1	~~17~~7	1	0	2	1	4
	Tier Totals	4	6	3				5	5			4	~~43~~27	2	0	7	3	12
2. Plant Systems	1	5	2	4	0	1	1	1	2	4	1	5	~~23~~26	3	0	0	1	4
	2	1	1	1	2	1	1	1	1	1	2	0	~~13~~12	0	1	1	0	2
	~~3~~	--	--	--	--	--	--	--	--	--	--	--	~~4~~	--	--	--	--	
	Tier Totals	6	3	5	2	2	2	2	3	5	3	5	~~40~~38	3	1	1	1	6
3. Generic Knowledge and Abilities Categories		~~Cat~~ 1			~~Cat~~ 2			~~Cat~~ 3			~~Cat~~ 4		~~17~~10	1	2	3	4	7
		2			3			2			3			0	2	2	3	

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.
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 ~~100~~ 75 points and the SRO-only exam must total 25 points.
3. Select topics from many systems and evolutions; avoid selecting more than two ~~or three~~ K/A topics from a given system or evolution unless they relate to plant-specific priorities.
4. Systems/evolutions within each group are identified on the associated outline.
5. The shaded areas are not applicable to the category/tier.
6.* The generic (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. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.
7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the ~~SRO~~ applicable license level, and the point totals for each system and category. ~~K/As below 2.5 should be justified on the basis of plant-specific priorities.~~ Enter the group and tier totals for each category in the table above; summarize all the SRO-only knowledge and non-A2 ability categories in the columns labeled "K" and "A." Use duplicate pages for RO and SRO-only exams.
8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.
9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 1 (~~RO~~ / SRO)							Form ES-401-1 10CRF-55.43 b related topics	
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~~							NOT RANDOMLY SELECTED		
295003 Partial or Complete Loss of AC / 6					1		**Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER :** (CFR: 41.10 / 43.5 / 45.13) AA2.05 Whether a partial or complete loss of A.C. power has occurred	4.2	S1
~~295004 Partial or Total Loss of DC Pwr / 6~~							NOT RANDOMLY SELECTED		
~~295005 Main Turbine Generator Trip / 3~~							NOT RANDOMLY SELECTED		
~~295006 SCRAM / 1~~							NOT RANDOMLY SELECTED		
295016 Control Room Abandonment / 7						1	2.1.23 **Ability to perform specific system and integrated plant procedures during different modes of plant operation.** (CFR: 45.2 / 45.6) Link to 10CFR-55.43(b)(6)	4.0	S14
~~295018 Partial or Total Loss of CCW / 8~~							NOT RANDOMLY SELECTED		
295019 Partial or Total Loss of Inst. Air / 8					1		**Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR :**(CFR: 41.10 / 43.5 / 45.13) AA2.01 Instrument air system pressure	3.6	S15
~~295021 Loss of Shutdown Cooling / 4~~							NOT RANDOMLY SELECTED		
295023 Refueling Acc Cooling Mode / 8	1						**Knowledge of the operational implications of the following concepts as they apply to REFUELING ACCIDENTS :**(CFR: 41.8 to 41.10) AK1.01 Radiation exposure hazards Also 10CFR-55.43(b)(4)	4.1	S27
~~295024 High Drywell Pressure / 5~~							NOT RANDOMLY SELECTED		
295025 High Reactor Pressure / 3					1		**Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE:** (CFR: 41.10 / 43.5 / 45.13) EA2.05 Decay heat generation	3.6	S30
~~295026 Suppression Pool High Water Temp. / 5~~							NOT RANDOMLY SELECTED		
~~295027 High Containment Temperature / 5~~							N/A JAF MARK III ONLY		
~~295028 High Drywell Temperature / 5~~							NOT RANDOMLY SELECTED		

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 1 (~~RO~~ / SRO)						Form ES-401-1 10CRF-55.43 b related topics		
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
295030 Low Suppression Pool Wtr Lvl / 5					1		**Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL :**(CFR: 41.10 / 43.5 / 45.13) EA2.04 Drywell/ suppression chamber differential pressure: Mark-I&II	3.7	S34
~~295031 Reactor Low Water Level / 2~~							NOT RANDOMLY SELECTED		
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1					1	1	**Ability to determine and/or interpret the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN :** (CFR: 41.10 / 43.5 / 45.13) EA2.05 Control rod position	4.3	S35
							2.2.10 **Knowledge of the process for determining if the margin of safety / as defined in the basis of any technical specification is reduced by a proposed change / test or experiment.** (CFR: 43.3 / 45.13) Link to 10CFR-55.43(b)(2)	3.3	S38
~~295038 High Off-site Release Rate / 9~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~600000 Plant Fire On Site / 8~~							NOT RANDOMLY SELECTED		
K/A Category Totals:	1	0	0	0	5	2			~~20~~/8

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 2 (~~RO~~ / SRO)							Form ES-401-1 10CRF-55.43 b related topics	
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~~							NOT RANDOMLY SELECTED		
~~295007 High Reactor Pressure / 3~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295008 High Reactor Water Level / 2~~							NOT RANDOMLY SELECTED		
~~295009 Low Reactor Water Level / 2~~							NOT RANDOMLY SELECTED		
~~295010 High Drywell Pressure / 5~~							NOT RANDOMLY SELECTED		
~~295011 High Containment Temp / 5~~							N/A JAF MARK III ONLY		
~~295012 High Drywell Temperature / 5~~							NOT RANDOMLY SELECTED		
~~295013 High Suppression Pool Temp. / 5~~							NOT RANDOMLY SELECTED		
295014 Inadvertent Reactivity Addition / 1	1						**Knowledge of the operational implications of the following concepts as they apply to INADVERTENT REACTIVITY ADDITION :** (CFR: 41.8 to 41.10) AK1.01 Prompt critical Also 10CFR-55.43(b)(6)	3.8	S40
~~295015 Incomplete SCRAM / 1~~							NOT RANDOMLY SELECTED		
~~295017 High Off-site Release Rate / 9~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295020 Inadvertent Cont. Isolation / 5 & 7~~							NOT RANDOMLY SELECTED		
295022 Loss of CRD Pumps / 1					1		**Ability to determine and/or interpret the following as they apply to LOSS OF CRD PUMPS :** (CFR: 41.10 / 43.5 / 45.13) AA2.02 CRD system status	3.4	S41
~~295029 High Suppression Pool Wtr Lvl / 5~~							NOT RANDOMLY SELECTED		
~~295032 High Secondary Containment Area Temperature / 5~~							NOT RANDOMLY SELECTED		
~~295033 High Secondary Containment Area Radiation Levels / 9~~							NOT RANDOMLY SELECTED		
~~295034 Secondary Containment Ventilation High Radiation / 9~~							NOT RANDOMLY SELECTED		
295035 Secondary Containment High Differential Pressure / 5						1	**2.3.9 Knowledge of the process for performing a containment purge.** (CFR: 43.4 / 45.10)	3.4	S42
295036 Secondary Containment High Sump/Area Water Level / 5					1		**Ability to determine and/or interpret the following as they apply to SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL:** (CFR: 41.10 / 43.5 / 45.13) EA2.01 Operability of components within the affected area.	3.2	S43
~~500000 High CTMT Hydrogen Conc. / 5~~							NOT RANDOMLY SELECTED		
K/A Category Point Totals	1	0	0	0	2	1	Group Point Total:		~~7~~/4

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1(~~RO~~ / SRO)											Form ES-401-1 10CRF-55.43 b related topics		
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~~												NOT RANDOMLY SELECTED		
~~205000 Shutdown Cooling~~												NOT RANDOMLY SELECTED		
~~206000 HPCI~~												NOT RANDOMLY SELECTED		
~~207000 Isolation (Emergency) Condenser~~												N/A JAF NO ISOLATION CONDENSER SYSTEM		
~~209001 LPCS~~												NOT RANDOMLY SELECTED		
~~209002 HPCS~~												N/A JAF NO HIGH PRESSURE CORE SPRAY SYSTEM		
211000 SLC			1									**Knowledge of the effect that a loss or malfunction of the STANDBY LIQUID CONTROL SYSTEM will have on following:** (CFR: 41.7 / 45.4) K3.02 Core spray line break detection system: Plant-Specific Link to 10CFR-55.43(b)(2)	3.2	S52
~~212000 RPS~~												NOT RANDOMLY SELECTED		
~~215003 IRM~~												NOT RANDOMLY SELECTED		
~~215004 Source Range Monitor~~												NOT RANDOMLY SELECTED		
215005 APRM / LPRM											1	2.1.34 **Ability to maintain primary and secondary plant chemistry within allowable limits.** (CFR: 41.10 / 43.5 / 45.12)	2.9	S55
217000 RCIC		1										**Knowledge of electrical power supplies to the following:** (CFR: 41.7) K2.04 Gland seal compressor (vacuum pump) Link to 10CFR-55.43(b)(2)	2.6	S56
~~218000 ADS~~												NOT RANDOMLY SELECTED		
223002 PCIS/Nuclear Steam Supply Shutoff		1										**Knowledge of electrical power supplies to the following:** (CFR: 41.7) K2.01 Logic power supplies Link to 10CFR-55.43(b)(5)	2.7	S59
~~239002 SRVs~~												NOT RANDOMLY SELECTED		
~~259002 Reactor Water Level Control~~												NOT RANDOMLY SELECTED		
~~261000 SGTS~~												NOT RANDOMLY SELECTED		

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1(~~RO~~ / SRO)											Form ES-401-1 10CRF-55.43 b related topics		
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~~												NOT RANDOMLY SELECTED		
~~262002 UPS (AC/DC)~~												NOT RANDOMLY SELECTED		
~~263000 DC Electrical Distribution~~												NOT RANDOMLY SELECTED		
~~264000 EDGs~~												NOT RANDOMLY SELECTED		
~~300000 Instrument Air~~												NOT RANDOMLY SELECTED		
~~400000 Component Cooling Water~~												NOT RANDOMLY SELECTED		
K/A Category Point Totals	0	2	1	0	0	0	0	0	0	0	1	Group Point Total:		~~26~~/4

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 2 (~~RO~~ / SRO)											Form ES-401-1 10CRF-55.43 b related topics		
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~~												NOT RANDOMLY SELECTED		
~~201002 RMCS~~												NOT RANDOMLY SELECTED		
~~201003 Control Rod and Drive Mechanism~~												NOT RANDOMLY SELECTED		
~~201004 RSCS~~												N/A JAF RSCS PROVIDES ROD SELECT BACKLIGHTING ONLY		
~~201005 RCIS~~												N/A JAF BWR-6 ONLY		
~~201006 RWM~~												NOT RANDOMLY SELECTED		
~~202001 Recirculation~~												NOT RANDOMLY SELECTED		
~~202002 Recirculation Flow Control~~												NOT RANDOMLY SELECTED		
~~204000 RWCU~~												NOT RANDOMLY SELECTED		
~~214000 RPIS~~												NOT RANDOMLY SELECTED		
~~215001 Traversing In-core Probe~~												NOT RANDOMLY SELECTED		
~~215002 RBM~~												NOT RANDOMLY SELECTED		
~~216000 Nuclear Boiler Inst.~~												NOT RANDOMLY SELECTED		
~~219000 RHR/LPCI: Torus/Pool Cooling Mode~~												NOT RANDOMLY SELECTED		
~~223001 Primary CTMT and Aux.~~												NOT RANDOMLY SELECTED		
~~226001 RHR/LPCI: CTMT Spray Mode~~												NOT RANDOMLY SELECTED		
~~230000 RHR/LPCI: Torus/Pool Spray Mode~~												NOT RANDOMLY SELECTED		
~~233000 Fuel Pool Cooling/Cleanup~~												NOT RANDOMLY SELECTED		
~~234000 Fuel Handling Equipment~~												NOT RANDOMLY SELECTED		
239001 Main and Reheat Steam								1				**Ability to (a) predict the impacts of the following on the MAIN AND REHEAT STEAM SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:** (CFR: 41.5 / 45.6) A2.01 Malfunction of reactor turbine pressure regulating system Link to 10CFR-55.43(b)(5)	3.9	S61
~~239003 MSIV Leakage Control~~												NOT RANDOMLY SELECTED		
~~241000 Reactor/Turbine Pressure Regulator~~												NOT RANDOMLY SELECTED		
~~245000 Main Turbine Gen. / Aux.~~												NOT RANDOMLY SELECTED		
~~256000 Reactor Condensate~~												NOT RANDOMLY SELECTED		
~~259001 Reactor Feedwater~~												NOT RANDOMLY SELECTED		
~~268000 Radwaste~~												NOT RANDOMLY SELECTED		

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 2 (~~RO~~ / SRO)											Form ES-401-1 10CRF-55.43 b related topics		
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	#
271000 Offgas							1					**Ability to predict and/or monitor changes in parameters associated with operating the OFFGAS SYSTEM controls including:** (CFR: 41.5 / 45.5) A1.06 Filter differential pressure Link to 10CFR-55.43	2.5	S67
~~272000 Radiation Monitoring~~												NOT RANDOMLY SELECTED		
~~286000 Fire Protection~~												NOT RANDOMLY SELECTED		
~~288000 Plant Ventilation~~												NOT RANDOMLY SELECTED		
~~290001 Secondary CTMT~~												NOT RANDOMLY SELECTED		
~~290003 Control Room HVAC~~												NOT RANDOMLY SELECTED		
~~290002 Reactor Vessel Internals~~												NOT RANDOMLY SELECTED		
K/A Category Point Totals	0	0	0	0	0	0	1	1	0	0	0	Group Point Total:		~~1~~2/2

ES-401	Generic Knowledge and Abilities Outline (Tier 3) SRO Only 10CRF-55.43 b related topics	Form ES-401-~~53~~
Facility: James A FitzPatrick	Date of Exam: 7/21-25/03	~~Exam Level:~~

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.11	RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	Subtotal					0
2. Equipment Control	2.2.17	RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION				
	2.2.6	**Knowledge of the process for making changes in procedures as described in the safety analysis report.** (CFR: 43.3 / 45.13)			3.3	S70
	2.2.32	**Knowledge of the effects of alterations on core configuration.** (CFR: 43.6)			3.3	S72
	2.2.	NOT RANDOMLY SELECTED				
	2.2.	NOT RANDOMLY SELECTED				
	2.2.	NOT RANDOMLY SELECTED				
	Subtotal					2
3. Radiation Control	2.3.4	**Knowledge of radiation exposure limits and contamination control / including permissible levels in excess of those authorized.** (CFR: 43.4 / 45.10)			3.1	S74
	2.3.6	**Knowledge of the requirements for reviewing and approving release permits.** (CFR: 43.4 / 45.10)			3.1	S76
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	Subtotal					2

ES-401	Generic Knowledge and Abilities Outline (Tier 3) SRO Only 10CRF-55.43 b related topics			Form ES-401-~~5~~3		
Facility: James A FitzPatrick	Date of Exam: 7/21-25/03			~~Exam Level:~~		
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
4. Emergency Procedures / Plan	2.4.47	RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION				
	2.4.16	**Knowledge of EOP implementation hierarchy and coordination with other support procedures.** (CFR: 41.10 / 43.5 / 45.13)			4.0	S94
	2.4.30	**Knowledge of which events related to system operations/status should be reported to outside agencies.** (CFR: 43.5 / 45.11)			3.6	S96
	2.4.22	**Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.** (CFR: 43.5 / 45.12)			4.0	S100
	2.4.	NOT RANDOMLY SELECTED				
	2.4.	NOT RANDOMLY SELECTED				
	Subtotal					3
Tier 3 Point Total ~~(RO/SRO)~~				~~13~~10		~~17~~7

Tier / Group	Randomly Selected K/A	Reason for Rejection See Notes Below
1/~~1~~2	500000 EA1.04	No JAF procedural direction to operate Drywell Recirculation (Cooling) Fans to control containment hydrogen. Note 1
1/~~2~~1	295019 AK1.XX	No K/A's exist under AK1. Note 1
2/~~1~~2	226001 K5.01	Importance rating at 2.2 (<2.5) and no plant priority to justify. Note 1
2/~~1~~2	290001 K1.06	N/A JAF BWR-6 only. Note 1
2/2	201001 K2.07	Importance rating at 2.1 (<2.5) and no plant priority to justify. Note 1
2/2	271000 K2.01	Importance rating at 1.5 (<2.5) and no plant priority to justify. Note 1
2/~~3~~2	215001 K2.01	Importance rating at 2.1 (<2.5) and no plant priority to justify. Note 1
2/~~3~~2	215001 A2.04	Importance rating at 2.0 (<2.5) and no plant priority to justify. Note 1
2/2	271000 A1.04	Importance rating at 2.4 (<2.5) and no plant priority to justify. Note 2
	Note 1:	Rejected during generation of revision 8 outline. Strike out indicates change in tier/group from rev 8 to rev 9.
	Note 2:	Rejected during conversion from rev 8 to pilot rev 9 outline. Tier/group is as described in rev 9.

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 1 (RO / SRO)							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						1	2.3.2 **Knowledge of facility ALARA program.** (CFR: 41.12 / 43.4 / 45.9 / 45.10)	2.5/2.9	1/2
295003 Partial or Complete Loss of AC / 6					1		**Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER :** (CFR: 41.10 / 43.5 / 45.13) AA2.01 Cause of partial or complete loss of A.C. power	3.4/3.7	2/3
295004 Partial or Total Loss of DC Pwr / 6		1					**Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following:** (CFR: 41.7 / 45.8) AK2.01 Battery charger	3.1/3.1	3/4
295005 Main Turbine Generator Trip / 3		1					**Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following:** (CFR: 41.7 / 45.8) AK2.07 Reactor pressure control	3.6/3.7	4/5
295006 SCRAM / 1	1						**Knowledge of the operational implications of the following concepts as they apply to SCRAM :** (CFR: 41.8 to 41.10) AK1.03 Reactivity control	3.7/4.0	5/6
295016 Control Room Abandonment / 7		1					**Knowledge of the interrelations between CONTROL ROOM ABANDONMENT and the following:** (CFR: 41.7 / 45.8) AK2.03 Control room HVAC	2.9/3.1	6/7
295018 Partial or Total Loss of CCW / 8	1						**Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER :** (CFR: 41.8 to 41.10) AK1.01 Effects on component/system operations	3.5/3.6	7/8
295019 Partial or Total Loss of Inst. Air / 8						1	2.2.26 **Knowledge of refueling administrative requirements.** (CFR: 43.5 / 45.13)	2.5/3.7	8/9

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 1 (RO / SRO)							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	#
295021 Loss of Shutdown Cooling / 4				1			**Ability to operate and/or monitor the following as they apply to LOSS OF SHUTDOWN COOLING :** (CFR: 41.7 / 45.6) AA1.04 Alternate heat removal methods	3.7/3.7	9/10
295023 Refueling Acc Cooling Mode / 8			1				**Knowledge of the reasons for the following responses as they apply to REFUELING ACCIDENTS :** (CFR: 41.5 / 45.6) AK3.02 Interlocks associated with fuel handling equipment	3.4/3.8	10/11
295024 High Drywell Pressure / 5	1						**Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE** : (CFR: 41.8 to 41.10) EK1.01 Drywell integrity: Plant-Specific	4.1/4.2	11/12
295025 High Reactor Pressure / 3				1	1		**Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE:** (CFR: 41.7 / 45.6) EA1.07 ARI/RPT/ATWS: Plant-Specific	4.1/4.1	12/13
							Ability to determine and/or interpret the following as they apply to HIGH REACTOR PRESSURE: (CFR: 41.10 / 43.5 / 45.13) EA2.06 Reactor water level	3.7/3.8	13/16
295026 Suppression Pool High Water Temp. / 5	1						**Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE :** (CFR: 41.8 to 41.10) EK1.01 Pump NPSH	3.0/3.4	14/17
~~295027 High Containment Temperature / 5~~							N/A JAF. MARK III ONLY		
295028 High Drywell Temperature / 5					1		**Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE :** (CFR: 41.10 / 43.5 / 45.13) EA2.01 Drywell temperature	4.0/4.1	15/18

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 1 (RO / SRO)							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	#
295030 Low Suppression Pool Wtr Lvl / 5						1	2.4.48 **Ability to interpret control room indications to verify the status and operation of system / and understand how operator actions and directives affect plant and system conditions.** (CFR: 43.5 / 45.12)	3.5/3.8	16/19
295031 Reactor Low Water Level / 2			1				**Knowledge of the reasons for the following responses as they apply to REACTOR LOW WATER LEVEL :** (CFR: 41.5 / 45.6) EK3.01 Automatic depressurization system actuation	3.9/4.2	17/20
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1					1		**Ability to determine and/or interpret the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN :** (CFR: 41.10 / 43.5 / 45.13) EA2.02 Reactor water level	4.1/4.2	18/21
295038 High Off-site Release Rate / 9		1					**Knowledge of the interrelations between HIGH OFF-SITE RELEASE RATE and the following:** (CFR: 41.7 / 45.8) EK2.02 Offgas system	3.6/3.8	19/22
600000 Plant Fire On Site / 8 Note 1				1			**Ability to operate and / or monitor the following as they apply to PLANT FIRE ON SITE:** AA1.06 Fire alarm	3.0/3.0	20/23
Note 1: Randomly selected during conversion from rev 8 to pilot rev 9 outline									
K/A Category Totals:	4	4	2	3	4	3			20/~~8~~

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 2 (RO / SRO)							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					1		**Ability to determine and/or interpret the following as they apply to LOSS OF MAIN CONDENSER VACUUM :** (CFR: 41.10 / 43.5 / 45.13) AA2.01 Condenser vacuum/absolute pressure	2.9/3.1	21/24
295007 High Reactor Pressure / 3		1					**Knowledge of the interrelations between HIGH REACTOR PRESSURE and the following:** (CFR: 41.7 / 45.8) AK2.04 LPCS	3.2/3.3	22/25
~~295008 High Reactor Water Level / 2~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295009 Low Reactor Water Level / 2~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295010 High Drywell Pressure / 5~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295011 High Containment Temp / 5~~							N/A JAF MARK III ONLY		
~~295012 High Drywell Temperature / 5~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295013 High Suppression Pool Temp. / 5~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
295014 Inadvertent Reactivity Addition / 1		1					**Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following:** (CFR: 41.7 / 45.8) AK2.07 Reactor power	3.9/3.9	23/26
~~295015 Incomplete SCRAM / 1~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295017 High Off-site Release Rate / 9~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295020 Inadvertent Cont. Isolation / 5 & 7~~							NOT RANDOMLY SELECTED		
~~295022 Loss of CRD Pumps / 1~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295029 High Suppression Pool Wtr Lvl / 5~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
295032 High Secondary Containment Area Temperature / 5						1	2.3.10 **Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.** (CFR: 43.4 / 45.10)	2.9/3.3	24/28

ES-401	BWR ~~SRO~~ Examination Outline Emergency and Abnormal Plant Evolutions – Tier 1/Group 2 (RO / SRO)							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	#
295033 High Secondary Containment Area Radiation Levels / 9				1			**Ability to operate and/or monitor the following as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS :** (CFR: 41.7 / 45.6) EA1.05 Affected systems so as to isolate damaged portions	3.9/4.0	25/29
~~295034 Secondary Containment Ventilation High Radiation / 9~~							RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~295035 Secondary Containment High Differential Pressure / 5~~							NOT RANDOMLY SELECTED		
295036 Secondary Containment High Sump/Area Water Level / 5			1				**Knowledge of the reasons for the following responses as they apply to SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL :** (CFR: 41.5 / 45.6) EK3.01 Emergency depressurization	2.6/2.8	26/31
500000 High CTMT Hydrogen Conc. / 5				1			**Ability to operate and monitor the following as they apply to HIGH CONTAINMENT HYDROGEN CONTROL:** (CFR: 41.7 / 45.6) EA1.06 Drywell sprays	3.3/3.4	27/32
K/A Category Point Totals	0	2	1	2	1	1	Group Point Total:		7/4

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1 (RO / SRO)												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							1			1		**Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) controls ncluding:** (CFR: 41.5 / 45.5) A1.05 Suppression pool level	3.8/3.7	28/33
												Ability to manually operate and/or monitor in the control room: (CFR: 41.7 / 45.5 to 45.8) A4.11 Indicating lights and alarms	3.7/3.5	29/36
205000 Shutdown Cooling			1									**Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) will have on following:** (CFR: 41.7 / 45.4) K3.04 Recirculation loop temperatures	3.7/3.7	30/37
206000 HPCI	1										1	2.3.1 **Knowledge of 10 CFR: 20 and related facility radiation control requirements.** (CFR: 41.12 / 43.4. 45.9 / 45.10)	2.6/3.0	31/39
												Knowledge of the physical connections and/or cause effect relationships between HIGH PRESSURE COOLANT INJECTION SYSTEM and the following: (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.07 D.C. power: BWR-2,3,4	3.7/3.8	32/44
~~207000 Isolation (Emergency) Condenser~~												N/A JAF. NO ISOLATION CONDENSER SYSTEM		
209001 LPCS											1	2.2.13 **Knowledge of tagging and clearance procedures.** (CFR: 41.10 / 45.13)	3.6/3.8	33/45

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1 (RO / SRO)												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	#
209001 LPCS continued			1									**Knowledge of the effect that a loss or malfunction of the LOW PRESSURE CORE SPRAY SYSTEM will have on following:** (CFR: 41.7 / 45.4) K3.02 ADS logic	3.8/3.9	34/46
~~209002 HPCS~~												N/A JAF. NO HIGH PRESSURE CORE SPRAY SYSTEM		
211000 SLC											1	2.1.9 **Ability to direct personnel activities inside the control room.** (CFR: 45.5 / 45.12 / 45.13)	2.5/4.0	35/47
212000 RPS					1							**Knowledge of the operational implications of the following concepts as they apply to REACTOR PROTECTION SYSTEM :** (CFR: 41.5 / 45.3) K5.02 Specific logic arrangements	3.3/3.4	36/48
215003 IRM									1			**Ability to monitor automatic operations of the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM including:** (CFR: 41.7 / 45.7) A3.04 Control rod block status	3.5/3.5	37/49
215004 Source Range Monitor									1			**Ability to monitor automatic operations of the SOURCE RANGE MONITOR (SRM) SYSTEM including:** (CFR: 41.7 / 45.7) A3.04 Control rod block status	3.6/3.6	38/50
215005 APRM / LPRM									1			**Ability to monitor automatic operations of the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM including:** (CFR: 41.7 / 45.7) A3.02 Full core display	3.5/3.5	39/51
217000 RCIC			1						1			**Knowledge of the effect that a loss or malfunction of the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) will have on following:** (CFR: 41.7 / 45.4) K3.01 Reactor water level	3.7/3.7	40/53

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1 (RO / SRO)											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	#
217000 RCIC continued									(J)			**Ability to monitor automatic operations of the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) including:** (CFR: 41.7 / 45.7) A3.06 Lights and alarms	3.5/3.4	41/54
218000 ADS	1											**Knowledge of the physical connections and/or cause effect relationships between AUTOMATIC DEPRESSURIZATION SYSTEM and the following:** (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.06 Safety/relief valves	3.9/3.9	42/57
223002 PCIS/Nuclear Steam Supply Shutoff								1			1	**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:** (CFR: 41.5 / 45.6) A2.04 Process radiation monitoring system failures	2.9/3.2	43/58
												2.1.10 **Knowledge of conditions and limitations in the facility license.**(CFR: 43.1 / 45.13)	2.7/3.9	44/60
239002 SRVs	1											**Knowledge of the physical connections and/or cause effect relationships between RELIEF/SAFETY VALVES and the following:** (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.01 Nuclear boiler	3.8/3.9	45/62

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1 (RO / SRO)											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	#
259002 Reactor Water Level Control	1											**Knowledge of the physical connections and/or cause effect relationships between REACTOR WATER LEVEL CONTROL SYSTEM and the following:** (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.13 Condensate system	3.2/3.2	46/63
261000 SGTS			1									**Knowledge of the effect that a loss or malfunction of the STANDBY GAS TREATMENT SYSTEM will have on following:** (CFR: 41.7 /45.6) K3.05 Secondary containment radiation/ contamination levels	3.2/3.5	47/64
262001 AC Electrical Distribution		1										**Knowledge of electrical power supplies to the following:** (CFR: 41.7) K2.01 Off-site sources of power	3.3/3.6	48/65
262002 UPS (AC/DC)											1	2.2.13 **Knowledge of tagging and clearance procedures.** (CFR: 41.10 / 45.13)	3.6/3.8	49/66
263000 DC Electrical Distribution								1				**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:** (CFR: 41.5 / 45.6) A2.01 Grounds	2.8/3.2	50/68
264000 EDGs						1						**Knowledge of the effect that a loss or malfunction of the following will have on the EMERGENCY GENERATORS (DIESEL/JET) :** (CFR: 41.7 / 45.7) K6.02 Fuel oil pumps	3.6/3.6	51/69

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 1 (RO / SRO)												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	#
300000 Instrument Air	1											**Knowledge of the connections and / or cause effect relationships between INSTRUMENT AIR SYSTEM and the following:** (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.05 Main Steam Isolation Valve air	3.1/3.2	52/71
400000 Component Cooling Water		1										**Knowledge of electrical power supplies to the following:** (CFR: 41.7) K2.01 CCW pumps	2.9/3.0	53/73
K/A Category Point Totals	5	2	4	0	1	1	1	2	4	1	5	Group Point Total:		26/~~4~~

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 2 (RO / SRO)												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		1										**Knowledge of electrical power supplies to the following:** (CFR: 41.7) K2.03 Backup SCRAM valve solenoids	3.5/3.6	54/75
~~201002 RMCS~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
201003 Control Rod and Drive Mechanism								1				**Ability to (a) predict the impacts of the following on the CONTROL ROD AND DRIVE MECHANISM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:** (CFR: 41.5 / 45.6) A2.01 Stuck rod	3.4/3.6	55/77
~~201004 RSCS~~												N/A JAF. RSCS PROVIDES ROD SELECT BACKLIGHTING ONLY		
~~201005 RCIS~~												N/A JAF. BWR-6 ONLY		
201006 RWM										1		**Ability to manually operate and/or monitor in the control room:** (CFR: 41.7 / 45.5 to 45.8) A4.06 Selected rod position indication:P-Spec(Not-BWR6)	3.2/3.2	56/78
~~202001 Recirculation~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~202002 Recirculation Flow Control~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
204000 RWCU				1								**Knowledge of REACTOR WATER CLEANUP SYSTEM design feature(s) and/or interlocks which provide for the following:** (CFR: 41.7) K4.03 Over temperature protection for system components	2.9/2.9	57/79
214000 RPIS										1		**Ability to monitor automatic operations of the ROD POSITION INFORMATION SYSTEM including:** (CFR: 41.7 / 45.7) A3.02 Alarm and indicating lights	3.2/3.1	58/80

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 2 (RO / SRO)												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	#
~~215001 Traversing In-core Probe~~												NOT RANDOMLY SELECTED		
215002 RBM							1					**Ability to predict and/or monitor changes in parameters associated with operating the ROD BLOCK MONITOR SYSTEM controls including:** (CFR: 41.5 / 45.5) A1.01 Trip reference: BWR-3,4,5	2.7/2.8	59/81
216000 Nuclear Boiler Inst.						1						**Knowledge of the effect that a loss or malfunction of the following will have on the NUCLEAR BOILER INSTRUMENTATION :** (CFR: 41.7 / 45.7) K6.01 A.C. electrical distribution	3.1/3.3	60/82
												1 of 2 RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~219000 RHR/LPCI: Torus/Pool Cooling Mode~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~223001 Primary CTMT and Aux.~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
226001 RHR/LPCI: CTMT Spray Mode	1											**Knowledge of the physical connections and/or cause effect relationships between RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE and the following:** (CFR: 41.2 to 41.9 / 45.7 to 45.8) K1.12 Suppression pool (spray penetration): Plant-Specific	3.0/3.0	61/83
230000 RHR/LPCI: Torus/Pool Spray Mode										1		**Ability to manually operate and/or monitor in the control room:** (CFR: 41.7 / 45.5 to 45.8) A4.02 Spray valves	3.8/3.6	62/84
233000 Fuel Pool Cooling/Cleanup				1								**Knowledge of FUEL POOL COOLING AND CLEAN-UP design feature(s) and/or interlocks which provide for the following:** (CFR: 41.7) K4.03 Maintenance of adequate pool temperature	2.8/3.1	63/85

ES-401	BWR ~~SRO~~ Examination Outline Plant Systems – Tier 2/Group 2 (RO / SRO)												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	#
~~234000 Fuel Handling Equipment~~												NOT RANDOMLY SELECTED		
~~239001 Main and Reheat Steam~~												NOT RANDOMLY SELECTED		
~~239003 MSIV Leakage Control~~												NOT RANDOMLY SELECTED		
241000 Reactor/Turbine Pressure Regulator					1							**Knowledge of the operational Implications of the following concepts as they apply to REACTOR/TURBINE PRESSURE REGULATING SYSTEM :** (CFR: 41.5 / 45.3) K5.05 Turbine inlet pressure vs. turbine load	2.8/2.9	64/86
~~245000 Main Turbine Gen. / Aux.~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~256000 Reactor Condensate~~												NOT RANDOMLY SELECTED		
~~259001 Reactor Feedwater~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~268000 Radwaste~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~271000 Offgas~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~272000 Radiation Monitoring~~												NOT RANDOMLY SELECTED		
~~286000 Fire Protection~~												NOT RANDOMLY SELECTED		
~~288000 Plant Ventilation~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
290001 Secondary CTMT			1									**Knowledge of the effect that a loss or malfunction of the SECONDARY CONTAINMENT will have *on following:*** (CFR: 41.7 / 45.4) K3.01 †Off-site radioactive release rates	4.0/4.4	65/87
~~290003 Control Room HVAC~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
~~290002 Reactor Vessel Internals~~												RANDOMLY DE-SELECTED DURING REV 8 TO REV 9 CONVERSION		
K/A Category Point Totals	1	1	1	2	1	1	1	1	1	2	0	Group Point Total:		12/2

ES-401	Generic Knowledge and Abilities Outline (Tier 3)		Form ES-401-~~5~~3			
Facility: James A. FitzPatrick	Date of Exam: 7/21-25/03		~~Exam Level:~~			
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.32	**Ability to explain and apply system limits and precautions.** (CFR: 41.10 / 43.2 / 45.12)	3.4	66	3.8	88
	2.1.29	**Knowledge of how to conduct and verify valve lineups.** (CFR: 41.10 / 45.1 / 45.12)	3.4	67	3.3	89
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	2.1.	NOT RANDOMLY SELECTED				
	Subtotal			2		
2. Equipment Control	2.2.1	**Ability to perform pre-startup procedures for the facility / including operating those controls associated with plant equipment that could affect reactivity.** (CFR: 45.1)	3.7	68	3.6	90
	2.2.12	**Knowledge of surveillance procedures.** (CFR: 41.10 / 45.13)	3.0	69	3.4	91
	2.2.34	**Knowledge of the process for determining the internal and external effects on core reactivity.** (CFR: 43.6)	2.8	70	3.2	92
	2.2.	NOT RANDOMLY SELECTED				
	2.2.	NOT RANDOMLY SELECTED				
	2.2.	NOT RANDOMLY SELECTED				
	Subtotal			3		
3. Radiation Control	2.3.9	**Knowledge of the process for performing a containment purge.** (CFR: 43.4 / 45.10)	2.5	71	3.4	93
	2.3.1	**Knowledge of 10 CFR: 20 and related facility radiation control requirements.** (CFR: 41.12 / 43.4. 45.9 / 45.10)	2.6	72	3.0	95
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	2.3	NOT RANDOMLY SELECTED				
	Subtotal			2		

ES-401	Generic Knowledge and Abilities Outline (Tier 3)		Form ES-401-~~5~~3			
Facility: James A. FitzPatrick	Date of Exam: 7/21-25/03		~~Exam Level:~~			
			RO		SRO-Only	
4. Emergency Procedures / Plan	2.4.15	**Knowledge of communications procedures associated with EOP implementation.** (CFR: 41.10 / 45.13)	3.0	73	3.5	97
	2.4.26	**Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.** (CFR: 43.5 / 45.12)	2.9	74	3.3	98
	2.4.39	**Knowledge of the RO's responsibilities in emergency plan implementation.** (CFR: 45.11)	3.3	75	3.1	99
	2.4.	NOT RANDOMLY SELECTED				
	2.4.	NOT RANDOMLY SELECTED				
	2.4.	NOT RANDOMLY SELECTED				
	Subtotal			3		
Tier 3 Point Total ~~(RO/SRO)~~				~~13~~10		~~17~~ 10

Tier / Group	Randomly Selected K/A	Reason for Rejection See Note Below
3	2.2.18	Importance rating at 2.3 (<2.5) and no plant priority to justify
3	2.2.15	Importance rating at 2.2 (<2.5) and no plant priority to justify
3	2.2.10	Importance rating at 1.9 (<2.5) and no plant priority to justify
3	2.2.7	Importance rating at 2.0 (<2.5) and no plant priority to justify
3	2.3.3	Importance rating at 1.8 (<2.5) and no plant priority to justify
3	2.3.7	Importance rating at 2.0 (<2.5) and no plant priority to justify
3	2.3.8	Importance rating at 2.3 (<2.5) and no plant priority to justify
3	2.3.6	Importance rating at 2.1 (<2.5) and no plant priority to justify
1/2	295008 G2.3.3	Importance rating at 1.8 (<2.5) and no plant priority to justify
1/2	295008 G2.3.8	Importance rating at 2.3 (<2.5) and no plant priority to justify
1/~~2~~–1	295019 G2.2.10	Importance rating at 1.9 (<2.5) and no plant priority to justify
2/1	209001 G2.2.5	Importance rating at 1.6 (<2.5) and no plant priority to justify
2/1	211000 G2.1.5	Importance rating at 2.3 (<2.5) and no plant priority to justify
1/1	295024 EA1.21	N/A JAF No LPCI Loop Select Logic
1/~~3~~ 1	295023 AK3.05	N/A JAF BWR-1 Only
1/~~3~~ 1	295023 AK3.04	N/A JAF No procedural controls linking refueling accidents to non-coincident scrams
2/~~1~~ 2	201001 K2.07	Importance rating at 2.0 (<2.5) and no plant priority to justify
2/~~1~~ 2	201002 K2.01	Importance rating at 2.1 (<2.5) and no plant priority to justify
2/~~1~~ 2	201002 K2.02	Importance rating at 2.1 (<2.5) and no plant priority to justify
2/~~1~~ 2	202002 K4.05	N/A JAF No recirc flow control system design features or interlocks that limit speed mismatch
2/~~1~~ 2	202002 K4.09	N/A JAF BWR-5 and 6 Only
2/~~1~~ 2	202002 K4.04	Importance rating at 2.4 (<2.5) and no plant priority to justify
2/1	203000 A1.07	Importance rating at 2.4 (<2.5) and no plant priority to justify
2/1	223002 K2.01	Importance rating at 2.4 (<2.5) and no plant priority to justify
2/1	223002 K5.XX	No K5 K/A's for system
2/1	259002 K1.07	N/A JAF No cause effect relationship between RWM and FWLC
2/1	259002 K1.10	N/A JAF No FWCI/HPCI Sytem
2/1	264000 K6.05	N/A JAF No Jet Engine Emergency Generators
2/2	201004 K2.XX	No K2 K/A's for system
2/~~2~~ 1	300000 K1.01	Importance rating at 2.4 (<2.5) and no plant priority to justify
2/~~3~~ 2	233000 K4.08	N/A JAF BWR-6 only
2/~~3~~ 2	233000 K4.02	Importance rating at 2.4 (<2.5) and no plant priority to justify
2/~~3~~ 2	268000 K4.XX	No K4 K/A's for system
2/2	201004 A2.02	N/A JAF RSCS provides Rod Select Backlighting Only
3	2.2.13	Rejected during outline review due to oversampling
3	2.3.4	Rejected during outline review due to oversampling
	Note	All rejected during generation of revision 8 outline. No additional rejections during rev 8 to rev 9 conversion. Strike out indicates change in tier/group from rev 8 to rev 9.

SROI JPM MATRIX

	CONTROL ROOM SYSTEMS (7 JPM"s) 7 DIFFERENT SECTION 1.9 SAFETY FUNCTIONS								IN PLANT SYSTEMS (3 JPM"s) 3 DIFFERENT SECTION 1.9 SAFETY FUNCTIONS			ADMIN TOPICS (5 JPM"s)				
JPM ID	A	B	C	D	E	F	G	H	I	J	K	OPS	OPS	EQUIP	RAD	E-PLAN
JPM NUMBER	20601005	23901003A	20101007	20004240A	NEW	20202001	21201009F	RO ONLY	20004234A	20101014	20004233A	NEW	NEW	NEW	NEW	NEW
JPM BRIEF DESCRIPTION	HPCI P/C	REOPEN MSIV'S	EMERG ROD IN	RESET GP. 1	SGT AUTO INIT	JET PUMP OPER.	RESET RPS		EOP O/R BPV's	DISARM CRD	PULL SRV FUSES	LCO	AOP-43	ST RESULTS	RW DISCH.	CLASSIFY EVENT
SAFETY FUNCTION	2	3	1	5	9	4	7		4	1	3					
SIMULATOR DUPLICATION	NO	NO	NO	NO	NO	NO	NO		NO	NO	NO	NO	NO	NO	NO	NO
DIRECT FROM BANK (≤ 80%)		✓	✓	✓		✓	✓		✓	✓	✓					
MODIFIED FROM BANK	✓															
NEW					✓							✓	✓	✓	✓	✓
FROM LAST LOI EXAM (≤ 30%)				✓		✓	✓				✓					
S/D OR LOW POWER (≥ 1)	✓	✓	✓	✓			✓									
ALT. PATH (4-6)	✓		✓		✓	✓	✓									
EOP/AOP ACTION (≥ 1)									✓		✓					
RCA ENTRY (≥ 1)										✓						
LINKED TO SIM EXAM																✓

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Facility: James A. FitzPatrick	Date of Examination: 21-25 July, 2003
Examination Level (circle one): ~~RO~~ / SRO	Operating Test Number:

Administrative Topic ~~/Subject Description~~ (see Note)	Describe activity to be performed ~~method of evaluation:~~ ~~1. ONE Administrative JPM, OR~~ ~~2. TWO Administrative Questions~~
~~A.1~~ Conduct of Operations	Given plant conditions, apply technical specifications and complete LCO tracking documentation. Possible references include T/S, AP-03.11 and AP-12.08 K/A 2.1.12 IR 4.0
Conduct of Operations	Given plant conditions of a fire assess the need for control room evacuation and direct the appropriate actions of AOP-43 K/A 2.1.20 IR 4.2
~~A.2~~ Equipment Control	Given surveillance test results, evaluate the level I and level II acceptance criteria and identify the required actions per T/S, AP-03.11 and AP-19.01 K/A 2.2.12 IR 3.4
~~A.3~~ Radiation Control	Given a partially completed worksheet, complete a Radwaste liquid release approval per OP-49. Perform in Simulator K/A 2.3.6 IR 3.1
~~A.4~~ Emergency Plan	Classify the event following examination scenario 1(2) per IAP-2 K/A 2.4.41 IR 4.1.

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

Facility: James A. FitzPatrick Date of Examination: 21-25 July, 2003
Exam Level (circle one): ~~RO~~ / SRO(I) / ~~SRO(U)~~ Operating Test No.:

~~B.1~~ Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a) 20601005. Manually initiate HPCI in pressure control. Modify to require alternate paths of turbine trip reset and injection for level control. Plant conditions shutdown with MSIV's closed.	M, S, L, A	2 206000 A4.05 4.4
b) 23901003A. Open MSIV's with RPV pressurized. Plant conditions shutdown with MSIV's closed.	D, S, L	3 239001 A4.04 3.7
c) 20101007 Conduct emergency rod in control rod insertion. Plant condition shutdown.	D, A, S, L	1 201002 A4.02 3.5
d) 20004240A Reset PCIS Group I Isolation. Plant conditions shutdown with MSIV's closed	D, S, L	5 223002 A4.03 3.5
e) "NEW" Verify SGT "A" train initiation ("B" failed to initiate). Rx Bldg D/P will require startup of "B" train. Plant conditions any.	N, A, S	9 261000 A 4.06 3.6
f) 20202001. Perform Jet Pump Operability Test (ST-23C) with Jet Pump Failure malfunction inserted. Plant conditions at power with 2 recirculation loops.	D, A, S	4 202001 K5.02 3.2
g) 21201009F. Reset RPS scram with scram valve fail to close. Plant conditions scrammed from full power.	D, A, S, L	7 212000 A4.14 3.8
h) RO ONLY		

Facility: James A. FitzPatrick		Date of Examination: 21-25 July, 2003
Exam Level (circle one): ~~RO~~ / SRO(I) ~~/ SRO(U)~~		Operating Test No.:
~~B.2 Facility Walk-Through~~ In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i) 20004234A EOP isolation/interlock override of Main Turbine Bypass Valves. Actions performed in Relay Room	D	4 295037 EK3.06 4.1
j) 20101014 Electrically disarm a control rod drive. Actions conducted in Rx Bldg on 272' elevation	D, R	1 201003 A2.02 3.8
k) 20004233A Close an SRV remotely by removing fuses. Actions conducted in Relay Room.	D	3 239002 A2.03 4.2
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA		

RO JPM MATRIX

	CONTROL ROOM SYSTEMS (8 JPM"s) 8 DIFFERENT SECTION 1.9 SAFETY FUNCTIONS								IN PLANT SYSTEMS (3 JPM"s) 3 DIFFERENT SECTION 1.9 SAFETY FUNCTIONS			ADMIN TOPICS (4 JPM"s)				
JPM ID	A	B	C	D	E	F	G	H	I	J	K	OPS	OPS	EQUIP	RAD	E-PLAN
JPM TITLE	20601005	23901003A	20101007	20004240A	NEW	20202001	21201009F	26402003B	20004234A	20101014	20004233A	NEW	NEW	NEW	NOT SEL.	NEW
JPM BRIEF DESCRIPTION	HPCI P/C	REOPEN MSIV'S	EMERG ROD IN	RESET GP. 1	SGT AUTO INIT	JET PUMP OPER.	RESET RPS	S/D EDG LOAD TEST	EOP O/R BPV's	DISARM CRD	PULL SRV FUSES	ALARM TEST	ST-5D/E	ST RESULTS		EAP-17
SAFETY FUNCTION	2	3	1	5	9	4	7	6	4	1	3					
SIMULATOR DUPLICATION	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO		NO
DIRECT FROM BANK (≤ 80%)		✓	✓	✓		✓	✓	✓	✓	✓	✓					
MODIFIED FROM BANK	✓															
NEW					✓							✓	✓	✓		✓
FROM LAST LOI EXAM (≤ 30%)				✓		✓	✓				✓					
S/D OR LOW POWER (≥ 1)	✓	✓	✓	✓			✓									
ALT PATH (4-6)	✓		✓		✓	✓	✓									
EOP/AOP ACTION (≥ 1)									✓		✓					
RCA ENTRY (≥ 1)										✓						
LINKED TO SIM EXAM																

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Facility: James A. FitzPatrick	Date of Examination: 21-25 July, 2003
Examination Level (circle one): RO / ~~SRO~~	Operating Test Number:

Administrative Topic ~~/Subject Description~~ (see Note)	Describe activity to be performed ~~method of evaluation:~~ ~~1. ONE Administrative JPM, OR~~ ~~2. TWO Administrative Questions~~
~~A.1~~ Conduct of Operations	Conduct weekly alarm test per OP-63 Perform in Simulator K/A 2.1.16 IR 2.9
Conduct of Operations	Perform Core Performance Daily Surveillance (ST-5E) and APRM AGAF adjustments (ST-5D) Perform in Simulator K/A 2.1.7 IR 3.7
~~A.2~~ Equipment Control	Given surveillance test results, evaluate the level I and level II acceptance criteria. K/A 2.2.12 IR 3.0
~~A.3~~ Radiation Control	
~~A.4~~ Emergency Plan	2.4.43/39 NEW IR=2.8/3.3 As the Emergency Communications Aid, activate the ERO per EAP-17 Attachment 4

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

Facility: James A. FitzPatrick Date of Examination: 21-25 July, 2003
Exam Level (circle one): RO / ~~SRO(I) / SRO(U)~~ Operating Test No.:

~~B.1~~ Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a) 20601005. Manually initiate HPCI in pressure control. Modify to require alternate paths of turbine trip reset and injection for level control. Plant conditions shutdown with MSIV's closed.	M, S, L, A	2 206000 A4.05 4.4
b) 23901003A. Open MSIV's with RPV pressurized. Plant conditions shutdown with MSIV's closed.	D, S, L	3 239001 A4.04 3.8
c) 20101007 Conduct emergency rod in control rod insertion. Plant condition shutdown.	D, A, S, L	1 201002 A4.02 3.5
d) 20004240A Reset PCIS Group I Isolation. Plant conditions shutdown with MSIV's closed	D, S, L	5 223002 A4.03 3.6
e) "NEW" Verify SGT "A" train initiation ("B" failed to initiate). Rx Bldg D/P will require startup of "B" train. Plant conditions any.	N, A, S	9 261000 A 4.06 3.3
f) 20202001. Perform Jet Pump Operability Test (ST-23C) with Jet Pump Failure malfunction inserted. Plant conditions at power with 2 recirculation loops.	D, A, S	4 202001 K5.02 3.1
g) 21201009F. Reset RPS scram with scram valve fail to close. Plant conditions scrammed from full power.	D, A, S, L	7 212000 A4.14 3.8
h) RO ONLY. 26402003B EDG shutdown from load testing. Plant condition any	D, S	6 264000 A4.04 3.7

Facility: James A. FitzPatrick	Date of Examination: 21-25 July, 2003
Exam Level (circle one): RO / ~~SRO(I) / SRO(U)~~	Operating Test No.:

~~B.2 Facility Walk-Through~~ In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i) 20004234A EOP isolation/interlock override of Main Turbine Bypass Valves. Actions performed in Relay Room	D	4 295037 EK3.06 3.8
j) 20101014 Electrically disarm a control rod drive. Actions conducted in Rx Bldg on 272' elevation	D, R	1 201003 A2.02 3.7
k) 20004233A Close an SRV remotely by removing fuses. Actions conducted in Relay Room.	D	3 239002 A2.03 4.1

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

OPERATING TEST NO.: 21-25 July, 2003

Applicant Type	Evolution Type	Minimum Number	Scenario Number							
			1		2		3		4	
			RO	BOP	RO	BOP	RO	BOP	RO	BOP
RO	Reactivity	1*			6					
	Normal	1*		2						
	Instrument / Component	4*		5,6, 7	(7)					
	Major	1		7	7					
As RO In Scenario 1 or 2	Reactivity	1*	3			5				
	Normal	0	1			2				
	Instrument / Component	2*	4,7			1,4				
	Major	1	7			7				
SRO-I										
As SRO In Scenario 2 or 1	Reactivity	0								
	Normal	1*	1, 2		2					
	Instrument / Component	2*	4,5, 6,7		1,3, 4,7					
	Major	1	7		7					
SRO-U	Reactivity	0								
	Normal	1*								
	Instrument / Component	2*								
	Major	1								

Instructions:
(1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.
(2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.45.d) but must be significant per Section C.2.a of Appendix D. *Reactivity and normal evolutions may be replaced with additional instrument or component malfunctions on a one-for-one basis.
(3) Whenever practical, both instrument and component malfunctions should be included; only those that require verifiable actions that provide insight to the applicant's competence count toward the minimum requirement.

Author: Richard W. DeVercelly

NRC Reviewer: J. H Williams

TRANSIENT AND EVENT CREDIT MATRIX

		SCENARIO 1										SCENARIO 2										SCENARIO 3						TOTALS							
		EVENT										EVENT										EVENT						REQUIRED				ACTUAL			
		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10	2	3	4	5	6	7	R	N	I/C	M	R	N	I/C	M
SROI 1	RO											I			C	R		M										1	0	2	1	1	0	2	1
	SRO	N	N		C	C		M	C	C	C																	0	1	2	1	0	2	5	1
SROI 2	RO											I			C	R		M										1	0	2	1	1	0	2	1
	SRO	N	N		C	C		M	C	C	C																	0	1	2	1	0	2	5	1
SROI 3	RO											I			C	R		M										1	0	2	1	1	0	2	1
	SRO	N	N		C	C		M	C	C	C																	0	1	2	1	0	2	5	1
SROI 4	RO	N		R	C			M	C																			1	0	2	1	1	1	2	1
	SRO											I		C	C			M	C									0	1	2	1	0	0	4	1
SROI 5	RO	N		R	C			M	C																			1	0	2	1	1	1	2	1
	SRO											I		C	C			M	C									0	1	2	1	0	0	4	1
SROI 6	RO	N		R	C			M	C																			1	0	2	1	1	1	2	1
	SRO											I		C	C			M	C									0	1	2	1	0	0	4	1
RO 1	RO		N			C		M		C	C						R	M	C									1	1	4	1	1	1	4	2
RO 2	RO		N			C		M		C	C						R	M	C									1	1	4	1	1	1	4	2

R = Reactivity Manipulation N = Normal Evolution I/C = Instrument/Component Failure M = Major Transient

		RUN 1	RUN 2	RUN 3
DAY 1	Control Room Supervisor	SROI-1	SROI-2	SROI-3
	SNO-1Reactor Controls Operator	SROI-4	SROI-5	SROI-6
SCENARIO 1	SNO-2 BOP Operator	RO-1	RO-2	SURROGATE
DAY 2	Control Room Supervisor	SROI-4	SROI-5	SROI-6
	SNO-1Reactor Controls Operator	RO-1	RO-2	SURROGATE
SCENARIO 2	SNO-2 BOP Operator	SROI-1	SROI-2	SROI-3

Facility:	James A. FitzPatrick	Scenario No.:	1-1	Op-Test No.:	21-25 July, 2003
Examiners:		Operators:	SRO	SROI-1	
			RO	SROI-4	
			BOP	RO-1	

Initial Conditions: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN

Turnover: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN. Reactor Engineer startup guidance. Maintenance standing by to swap running CBP's.

Event No.	Malf. No.	Event Type*	Event Description
1		N	Reactor Mode Switch to RUN
2		N	Swap running Condensate Booster Pumps
3		R	Continue startup with Rod Withdrawal
4	RD10(XX-YY)	C	Stuck rod until drive d/p is raised
5	CU02 CU07	C	RWCU Pump Trip/ RWCU System Leak into Reactor Building
6	ED24(X)		RWCU-15 Closure results in Loss of MCC-152
7	CU07 severity inc.	M	EOP-5 entry for non-isolable leak into Reactor Building. Manual Scram and Anticipate/ED required by EOP-5
8	RD13(XX-YY)	C	One rod fails to scram (Preset)
9	TC04(X)	C	BPV's fail to closed after opening
10	AD07(X,Y)	C	2 ADS SRV's will fail to open (Preset)

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

Anticipated EAL SAE-4.1.1 or SAE 3.4.1

Facility:	James A. FitzPatrick	Scenario No.:	1-2	Op-Test No.:	21-25 July, 2003
Examiners:		Operators:	SRO	SROI-2	
			RO	SROI-5	
			BOP	RO-2	

Initial Conditions: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN

Turnover: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN. Reactor Engineer startup guidance. Maintenance standing by to swap running CBP's.

Event No.	Malf. No.	Event Type*	Event Description
			SEE SCENARIO 1-1

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

Facility:	James A. FitzPatrick	Scenario No.:	1-3	Op-Test No.:	21-25 July, 2003
Examiners:		Operators:	SRO	SROI-3	
			RO	SROI-6	
			BOP	SURROGATE	

Initial Conditions: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN

Turnover: Reactor startup in progress, 10% CTP, RMS in STARTUP, ready to go to RUN. Reactor Engineer startup guidance. Maintenance standing by to swap running CBP's.

Event No.	Malf. No.	Event Type*	Event Description
			SEE SCENARIO 1-1

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

Facility: James A. FitzPatrick Scenario No.: 2-1 Op-Test No.: 21-25 July, 2003

Examiners: Operators: SRO SROI-4

RO RO-1

BOP SROI-1

Initial Conditions: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Turnover: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Event No.	Malf. No.	Event Type*	Event Description
1	RR19(X)	I	FWLC Controlling Instrument Upscale Failure (slow ramp) (Trigger for BOP Operator initial action)
2			Swap level instrument input and return to Automatic FWLC
3	TU04(X)	C	Step change in Turbine Vibration, AOP-66
4	MC01	C	Slow loss of condenser vacuum, AOP-31
5		R	AOP-31 power reduction with recirculation flow
6		R	AOP-31 power reduction with rod insertion
7	RD22(X) MC01 severity inc.	M	Manual Scram with partial ATWS (SDV Hydraulic Lock) at > 2.5% CTP. RMCS success path. Loss of Main Condenser (HPCI and SRV's for pressure/level control)
8	RD01(X)	C	SDIV Vent or Drain Fails Open (Preset)
		Notes	
		1	ATWS is an IPE dominant accident sequence
		2	HPCI is an IPE risk reduction system
		3	SLC initiation is an IPE key operator action

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

Anticipated EAL SAE-2.2.2

Facility:	James A. FitzPatrick	Scenario No.: 2-2	Op-Test No.: 21-25 July, 2003
Examiners:		Operators:	SRO SROI-5
			RO RO-2
			BOP SROI-2

Initial Conditions: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Turnover: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Event No.	Malf. No.	Event Type*	Event Description
			SEE SCENARIO 2-1

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

Facility:	James A. FitzPatrick	Scenario No.: 2-3	Op-Test No.: 21-25 July, 2003
Examiners:		Operators:	SRO SROI-6
			RO SURROGATE
			BOP SROI-3

Initial Conditions: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Turnover: ~ 90% CTP, Rod pattern exchange just completed. Return to 100% CTP using recirculation flow

Event No.	Malf. No.	Event Type*	Event Description
			SEE SCENARIO 2-1

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

Facility: James A. FitzPatrick Scenario No.: 3 Op-Test No.: 21-25 July, 2003

Examiners: Operators: SRO

RO

BOP

Initial Conditions: 100% CTP

Turnover: Maintenance standing by to observe RB (TB or SW) pump swap

Event No.	Malf. No.	Event Type*	Event Description
1		N	RB (TB or SW) pump swap
2	NM11(XX-YY-ZZ)	I	LPRM Upscale failure, Bypass and reset
3	OG04	C	Combustion in SJAE Off-Gas, AOP-5
4		R	AOP-5 power reduction with recirculation
5		R	AOP-5 power reduction with rod insertion, Fire is out
6	PC07	M	Steam leak in D/W, EOP-2 and 4, Drywell Sprays
Preset	RD13(XX-YY)	C	1 rod fail to scram
7	ED18(X)	C	Loss of 10500 bus on fast transfer

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

Anticipated EAL NUE 8.2.1 and Alert 3.1.1

Facility: James A. FitzPatrick Scenario No.: 4 Op-Test No.: 21-25 July, 2003

Examiners: Operators: SRO

RO

BOP

Initial Conditions: 75% CTP

Turnover: Return to 100% CTP

Event No.	Malf. No.	Event Type*	Event Description
1	MFXX ANXX	I/C	Seismic Event (Crywolf RFPT vibration alarm)
2	RR23(X)	I	Flow unit downscale failure, Bypass and reset.
3	FW05(X)	C	RFPT High Vibration (Requires rapid power reduction)
4		R	Power Reduction using recirculation flow
5		R	Power reduction using rods
6		N	Remove RFPT from service
7	MS05(X) RP13	M	MSL Break in TB with failure to Auto Isolate, Manual Scram, Manually Isolate, RCIC and SRV's
8	RFI-HPXX	C	HPCI start failure (AOP breaker trip on startup) (Preset)
9	AD07(X,Y,Z)	C	Several SRV's fail to open (Preset)
		Notes	
		1	RCIC is an IPE risk reduction system
		2	RCIC for L/C upon HPCI failure is an IPE key operator action

* (N)ormal, (M)ajor

Anticipated EAL Alert 8.4.4 and SAE 3.4.1