

Facility: <u>Indian Point 2</u>		Date of Examination: <u>July 6, 2001</u>
Examination Level (circle one): <b>SRO-I</b>		Operating Test Number: _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	1. Perform a manual Quadrant Power Tilt Calculation (JPM).
	Shift Staffing Requirements	2. Take appropriate actions when shift complement falls below minimum manning requirements (JPM).
A.2	Tagging and Clearances	Verify the boundary for a proposed equipment tag out (JPM).
A.3	Radiation exposure limits and contamination control, including permissible levels in excess of those authorized	Calculate and Record a <i>Gas</i> <sup>(1)</sup> Radioactive Release (JPM).
A.4	Emergency action levels and classifications	Classify Emergency Events requiring Emergency Plan Implementation (JPM).

(1) Replaced original JPM (Liquid Radioactive Release) because it could not be made discriminatory. The facility requires minimum dilution flows of 100,000 GPM. With this large dilution flowrate, no discriminatory "Critical" steps could be developed. The candidates could miscalculate all the release numbers and still not violate any limits that could be tied to "Critical" steps.

Facility: <u>Indian Point 2</u>		Date of Examination: <u>July 6, 2001</u>
Examination Level (circle one): <b>SRO-U</b>		Operating Test Number: _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Plant Parameter Verification	1. Perform a manual Quadrant Power Tilt Calculation (JPM).
	Shift Staffing Requirements	2. Take appropriate actions when shift complement falls below minimum manning requirements (JPM).
A.2	Tagging and Clearances	Verify the boundary for a proposed equipment tag out (JPM).
A.3	Radiation exposure limits and contamination control, including permissible levels in excess of those authorized	Calculate and Record a <i>Gas<sup>(1)</sup></i> Radioactive Release (JPM).
A.4	Emergency action levels and classifications	Classify Emergency Events requiring Emergency Plan Implementation (JPM).

(1) Replaced original JPM (Liquid Radioactive Release) because it could not be made discriminatory. The facility requires minimum dilution flows of 100,000 GPM. With this large dilution flowrate, no discriminatory "Critical" steps could be developed. The candidates could miscalculate all the release numbers and still not violate any limits that could be tied to "Critical" steps.

Facility: <u>Indian Point 2</u> Exam Level (circle one): <b>SRO-I</b>	Date of Examination: <u>July 6, 2001</u> Operating Test No.: _____	
<b>B.1 Control Room Systems</b>		
<b>System / JPM Title</b>	<b>Type Code*</b>	<b>Safety Function</b>
a. Perform the Immediate Operator actions of E-0, Reactor Trip or Safety Injection – Automatic and Manual Trip Unsuccessful.	D,A,S	7
b. Actions for controlling Pressurizer Pressure or Level channel failure.	D,S	3
c. Manually initiate Containment Spray during E-0.	N,A,S	5
d. Fill a Safety Injection Accumulator.	D,S	2
e. Synchronize the main generator to the grid.	N,S,L	6
f. Emergency borate the Reactor Coolant System.	D,A,S	1
g. Establish Reactor Coolant System feed and bleed.	N,A,S	4P
<b>B.2 Facility Walk-Through</b>		
a. Establish backup cooling to the SI and RHR pumps.	N,A,L,R	8
b. <i>Locally start AFW pump, P22 following a CCR Evacuation<sup>(1)</sup></i>	D	4S
c. <i>Locally close MSIVs<sup>(2)</sup></i>	N	4P
* 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		

(1) Replaced original JPM (trip the Turbine locally) because it was non-discriminatory. There was only 1 critical step, and that was to turn the local trip lever to TRIP.

(2) Replaced original JPM (Manually isolate Containment Pressure Relief valves PCV-1191 and 1192 because it was non-discriminatory. There were only 2 manual isolation valves in the JPM that needed closed.

ES-301 Control Room Systems and Facility Walk-Through Test Outline Form ES-301-2(R8,S1)

Facility: <u>Indian Point 2</u>		Date of Examination: <u>July 6, 2001</u>	
Exam Level (circle one): <b>SRO-U</b>		Operating Test No.: _____	
<b>B.1 Control Room Systems</b>			
System / JPM Title	Type Code*	Safety Function	
a. Manually initiate Containment Spray during E-0.	N,A,S	5	
b. Synchronize the main generator to the grid.	N,S,L	6	
c. Establish Reactor Coolant System feed and bleed.	N,A,S	4P	
<b>B.2 Facility Walk-Through</b>			
a. Establish backup cooling to the SI and RHR pumps.	N,A,L,R	8	
b. <i>Locally start AFW pump, P22 following a CCR Evacuation<sup>(1)</sup></i>	D	4S	
* 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			

(1) Replaced original JPM (trip the Turbine locally) because it was non-discriminatory. There was only 1 critical step, and that was to turn the local trip lever to TRIP.

Facility: **Indian Point 2** Date of Exam: **7/6/01** Scenario Numbers: **1 / 2 / 3 / 4** Operating Test No.:

QUALITATIVE ATTRIBUTES		Initials		
		a	b*	c#
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	2/3	1	
2.	The scenarios consist mostly of related events.	2/3	1	
3.	Each event description consists of <ul style="list-style-type: none"> <li>the point in the scenario when it is to be initiated</li> <li>the malfunction(s) that are entered to initiate the event</li> <li>the symptoms/cues that will be visible to the crew</li> <li>the expected operator actions (by shift position)</li> <li>the event termination point (if applicable)</li> </ul>	2/3	1	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.	2/3	1	
5.	The events are valid with regard to physics and thermodynamics.	2/3	1	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	2/3	1	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	N/A	N/A	
8.	The simulator modeling is not altered.	2/3	1	
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	2/3	1	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.4 of ES-301.	2/3	1	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios). <i>FOOTNOTE #1</i>	*	*	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	2/3	1	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	2/3	1	
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes	--	--
1.	Total malfunctions (5-8)	6 / 7 / 6 / 7	2/3	1
2.	Malfunctions after EOP entry (1-2)	2 / 2 / 2 / 2	2/3	1
3.	Abnormal events (2-4)	4 / 3 / 2 / 3	2/3	1
4.	Major transients (1-2)	2 / 2 / 1 / 1	2/3	1
5.	EOPs entered/requiring substantive actions (1-2)	1 / 1 / 2 / 1	2/3	1
6.	EOP contingencies requiring substantive actions (0-2)	1 / 1 / 0 / 1	2/3	1
7.	Critical tasks (2-3)	3 / 3 / 3 / 2	2/3	1

OPERATING TEST NO.:

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1				
	Normal	1				
	Instrument / Component	4				
	Major	1				

As RO	Reactivity	1	2	4	1	1
	Normal	0	--	1	--	--
	Instrument / Component	2	1,3,4 6	2,3, 5,7	2,3, 4,6	2,3,4,5 7
	Major	1	5,7	6,8	5,7	6,8
SRO-I	Reactivity	0	--	--	--	--
	Normal	1	2	1,4	1	1
	Instrument / Component	2	1,3,4 6	2,3, 5,7	2,3, 4,6	2,3,4,5 7
	Major	1	5,7	6,8	5,7	6,8

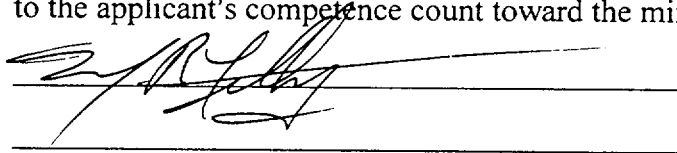
SRO-U	Reactivity	0				
	Normal	1				
	Instrument / Component	2				
	Major	1				

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.4.d) but must be significant per Section C.2.a of Appendix D.
- (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:

NRC Reviewer:



Facility: <b>Indian Point 2</b>				Date of Exam: <b>7/6/01</b> Exam Level: <b>SRO</b>		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers technically accurate and applicable to facility			(u)	/	
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available			(u)	/	
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401			(u)	(u)	
4.	Question selection and duplication from the last two NRC licensing exams appears consistent with a systematic sampling process					
5.	Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed; or <input type="checkbox"/> the audit exam was completed before the license exam was started; or <input checked="" type="checkbox"/> the examinations were developed independently; or <input type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)			(u)	/	
6.	Bank use meets limits (no more than 75 percent from the bank at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New	(u)	/
		1	1	99		
7.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory	C/A		(u)	/
		46	54			
8.	References/handouts provided do not give away answers			(u)	/	
9.	Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the Tier to which they are assigned; deviations are justified			(u)	/	
10.	Question psychometric quality and format meet ES, Appendix B, guidelines			(u)	/	
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet			(u)	/	

**DNA SRO ONLY EXAM**

	Printed Name / Signature	Date
a. Author	<u>RICHARD C. WHITEHOUSE</u>	<u>5/24/2001</u>
b. Facility Reviewer (*)	<u>EARL R. LIBBY</u>	<u>5/24/2001</u>
c. NRC Chief Examiner (#)		
d. NRC Regional Supervisor		

Note: \* The facility reviewer's initials/signature are not applicable for NRC-developed examinations.  
 # Independent NRC reviewer initial items in Column "c;" chief examiner concurrence required.

Facility: Indian Point 2			Date of Exam: July 6, 2001										Exam Level: SRO	
Tier	Group	K/A Category Points											Point Total	
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *		
1. Emergency & Abnormal Plant Evolutions	1	0	5	6					5	5			3	24
	2	2	4	3 (1)					2 (1)	3			2	16
	3	0	0	1					1	1			0	3
	Tier Totals	2	9	10 (1)					8 (1)	9			5	43
2. Plant Systems	1	1	1	2 (1)	2 (1)	2	1	3	1	2	2	2	19	
	2	2	1	3	3	2	1	1	1	1	2	0	17	
	3	0	0	2	1	0	0	0	1	0	0	0	4	
	Tier Totals	3	2	7 (1)	6 (1)	4	2	4	3	3	4	2	40	
3. Generic Knowledge and Abilities					Cat 1		Cat 2		Cat 3		Cat 4		17	
					5		5		3		4			
<p>Note:</p> <ol style="list-style-type: none"> <li>Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).</li> <li>The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by <math>\pm 1</math> from that specified in the table based on NRC revisions. The final exam must total 100 points.</li> <li>Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.</li> <li>Systems/evolutions within each group are identified on the associated outline.</li> <li>The shaded areas are not applicable to the category/tier.</li> <li>* The generic 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.</li> <li>On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO 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 tier totals for each category in the table above.</li> </ol>														



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## PWR SRO Examination Outline

Form ES-401-3 R8, S1

## Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1 1					✓		AA2.05 Ability to determine and interpret the following as they apply to the Continuous Rod Withdrawal: Uncontrolled rod withdrawal from available indications.	4.6	1.0
000003 Dropped Control Rod / 1 2		✓					AK2.05 Knowledge of the interrelations between the Dropped Control Rod and the following: Control rod drive power supplies and logic circuits	2.8	1.0
000005 Inoperable/Stuck Control Rod / 1 3			✓				K3.04 Knowledge of the reasons for the following responses as they apply to the Inoperable/Stuck Control Rods: Tech Spec limits for inoperable rods	4.1	1.0
000011 Large Break LOCA / 3 4						✓	2.4.6 Knowledge of symptom based EOP mitigation strategies.	4.0	1.0
W/E04 LOCA Outside Containment / 3 5			✓				EK3.2 Knowledge of the reasons for the following responses as they apply to the LOCA Outside Containment: Normal, Abnormal, and Emergency Operating Procedures associated with the LOCA Outside Containment.	4.0	1.0
W/E01 & E02 Rediagnosis & SI Termination / 3 6						✓	2.4.18 Knowledge of specific bases for EOPs.	3.6	1.0
000015/17 RCP Malfunctions / 4 7		✓					AK2.07 Knowledge of the interrelations between the Reactor Coolant Pump Malfunctions and the following: RCP Seals	2.9	1.0
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4 8				✓			(E09) EA1.2 Ability to operate and/or monitor the following as they apply to the (Natural Circulation Operations): Operating behavior characteristics of the facility.	3.9	1.0
000024 Emergency Boration / 1 9		✓					AK2.01 Knowledge of the interrelations between Emergency Boration and the following: Valves.	2.7	1.0
000026 Loss of Component Cooling Water / 8 10					✓		AA2.01 Ability to determine and interpret the following as they apply to the Loss of CCW: Location of a leak in the CCWS.	3.5	1.0
000029 Anticipated Transient w/o Scram / 1 11				✓			EA1.12 Ability to operate and/or monitor the following as they apply to a ATWS: M/G set power supply and reactor trip breakers.	4.0	1.0
	12		✓				EK3.12 Knowledge of the reasons for the following responses as they apply to the ATWS: Actions contained in the EOPs for ATWS.	4.7	1.0
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4 13		✓					EK2.1 Knowledge of the interrelations between Uncontrolled Depressurization of all SGs and the following: Components, and functions of control and safety systems, including instrumentation, signals interlocks, failure modes, and automatic and manual features.	3.7	1.0
CE/A11; W/E08 RCS Overcooling - PTS / 4 14			✓				EK3.2 Knowledge of the reasons for the following responses as they apply to PTS: Normal, abnormal, and emergency operating procedures associated with PTS.	4.0	1.0
000051 Loss of Condenser Vacuum / 4 15					✓		AA2.02 Ability to determine and interpret the following as they apply to the Loss of condenser vacuum: Conditions requiring reactor and/or turbine trip.	4.1	1.0
000055 Station Blackout / 6 16					✓		EA2.02 Ability to determine or interpret the following as they apply to a Station Blackout: RCS core cooling through natural circulation cooling to S/G cooling.	4.6	1.0
000057 Loss of Vital AC Elec. Inst. Bus / 6 17				✓			AA1.06 Ability to operate an/or monitor the following as they apply to the Loss of Vital AC Instrument Bus: Manual control of components for which automatic control is lost.	3.5	1.0
000059 Accidental Liquid RadWaste Rel. / 9 18				✓			AA1.01 Ability to operate and/or monitor the following as they apply to the Accidental Liquid Waste release: Radioactive effluent monitor.	3.5	1.0

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## PWR SRO Examination Outline

Form ES-401-3 R8, S1

## Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000062 Loss of Nuclear Service Water / 4 19			✓				AK3.02 Knowledge of the reason for the following responses as they apply to the loss of Nuclear Service Water: The automatic actions (alignments) within the nuclear service water resulting from the actuation of the ESFAS.	3.9	1.0
000067 Plant Fire On-site / 9 20					✓		AA2.03 Ability to determine and interpret the following as they apply to the Plant Fire on site: Fire alarm.	3.5	1.0
000068 (BW/A06) Control Room Evac. / 8 21			✓				AK3.13 Knowledge of the reasons for the following as they apply to the Control Room Evacuation: Performing a shutdown margin calculation, including boron needed and boration time.	3.9	1.0
000069 (W/E14) Loss of CTMT Integrity 5 22				✓			AA1.03 Ability to operate and / or monitor the following as they apply to the Loss of Containment Integrity: Fluid system penetrating containment.	3.0	1.0
000074 (W/E06&E07) Inad. Core Cooling / 4 23		✓					EK2.01 Knowledge of the interrelations between the following and the Inadequate Core Cooling: RCP	3.8	1.0
BW/E03 Inadequate Subcooling Margin / 4									
000076 High Reactor Coolant Activity / 9 24						✓	2.1.12 Ability to apply Technical Specifications for a system.	4.0	1.0
BW/A02&A03 Loss of NNI-X/Y / 7									
K/A Category Totals:	0	5	6	5	5	3	Group Point Total:		24

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## PWR SRO Examination Outline

Form ES-401-3 (R8, S1)

## Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000007 (BW/E02&E10; CE/E02) Reactor Trip-Stabilization-Recovery / 1 (2) 25		✓					EK2.03 Knowledge of the interrelations between a reactor trip and the following: Reactor trip status panel.	3.6	1.0
BW/A01 Plant Runback / 1									
BW/A04 Turbine Trip / 4									
000008 Pressurizer Vapor Space Accident / 3 26		✓					AK2.01 Knowledge of the interrelations between the Pressurizer vapor space accident and the following: Valves	2.7	1.0
000009 Small Break LOCA / 3 27					✓		EA2.33 Ability to determine and interpret the following as they apply to a small break LOCA: RCS water inventory balance and Tech-Spec limits.	3.8	1.0
BW/E08; W/E03 LOCA Cooldown - Depress. / 4 28						✓	2.4.6 Knowledge of symptom based EOP mitigation strategies.	4.0	1.0
W/E11 Loss of Emergency Coolant Recirc. / 4 29	✓						EK1.3 Knowledge of the operational implications of the following concepts as they apply to the Loss of Emergency Coolant Recirculation: Annunciators and conditions indicating signals, and remedial actions associated with the Loss of emergency coolant recirculation.	4.0	1.0
000022 Loss of Reactor Coolant Makeup / 2 30			✓				AK3.02 Knowledge of the reasons for the following responses as they apply to the Loss of Reactor Coolant Pump Makeup: Actions contained in SOPs and EOPs for RCPs, loss of makeup, loss of charging, and abnormal charging.	3.8	1.0
000025 Loss of RHR System / 4 31		✓					AK2.02 Knowledge of the interrelations between the Loss of Residual Heat Removal System and the following: RHR Pumps.	3.2	1.0
000027 Pressurizer Pressure Control System Malfunction / 3 32				✓			AA1.01 Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunction: Pressurizer heaters, sprays, and PORVs.	3.9	1.0
000032 Loss of Source Range NI / 7 33					✓		AA2.06 Ability to determine and interpret the following as they apply to the Loss of Source Range Nuclear Instrumentation: Confirmation of reactor trip.	4.1	1.0
000033 Loss of Intermediate Range NI / 7 (2) 25		✓					<b>NOT SELECTED: AK2.02 Knowledge of the interrelations between the Loss of Intermediate Range Nuclear Instrumentation and the following: Sensors and detectors.</b>	2.6	1.0
000037 Steam Generator Tube Leak / 3 34			✓				AK3.07 Knowledge of the reasons for the following responses as they apply to the Steam Generator Tube Leak: Actions contain in EOP for S/G tube leak.	4.4	1.0
000038 Steam Generator Tube Rupture / 3 35	✓						EK1.04 Knowledge of the operational implications of the following concepts as they apply to the SGTR: Natural Circulation.	4.2	1.0

PWR SRO Examination Outline										Form ES-401-3 (R8, S1)	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2											
E/APE # / Name / Safety Function	K <sub>1</sub>	K <sub>2</sub>	K <sub>3</sub>	A <sub>1</sub>	A <sub>2</sub>	G	K/A Topic(s)	Imp.	Points		
000054 (CE/E06) Loss of Main Feedwater / 4 36				✓			AA1.01 Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater: AFW controls, including the use of alternate AFW sources.	4.4	1.0		
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4 37					✓		EA2.1 Ability to determine and interpret the following as they apply to the Loss of Secondary Heat Sink: Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	4.4	1.0		
000058 Loss of DC Power / 6							NOT SELECTED				
000060 Accidental Gaseous Radwaste Rel. / 9 38		✓					AK2.02 Knowledge of the interrelations between the Accidental Gaseous Radwaste Release and the following: Auxiliary building ventilation system.	3.1	1.0		
000061-ARM System Alarms / 7 (2) 39				✓			AA1.01 Ability to operate and / or monitor the following as they apply to the Area Radiation Monitoring System Alarms: Automatic detection.	3.6	1.0		
W/E16 High Containment Radiation / 9 40						✓	2.4.4 Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1.0		
000065 Loss of Instrument Air / 8 (2) 39			✓				<del>NOT SELECTED</del> AK3.08 Knowledge of the reasons for the following responses as they apply to the Loss of Instrument Air: Actions contained in EOP for loss of instrument air.	3.9	1.0		
CE/E09 Functional Recovery											
K/A Category Point Totals:	2	4	3	2	3	2	Group Point Total:		16		

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Emergency and Abnormal Plant Evolutions - Tier 1/Group 3									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2							NOT SELECTED.		
000036 (BW/A08) Fuel Handling Accident / 8 41				✓			AA1.04 Ability to operate and / or monitor the following as they apply to the Fuel Handling Incidents: Fuel handling equipment during an incident.	3.7	1.0
000056 Loss of Off-site Power / 6 42			✓				AK3.02 Knowledge of the reasons for the following responses as they apply to the Loss of Offsite Power: Actions contained in EOP for loss of offsite power.	4.7	1.0
BW/E13&E14 EOP Rules and Enclosures									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
CE/A16 Excess RCS Leakage / 2									
W/E13 Steam Generator Over-pressure /							NOT SELECTED.		
W/E15 Containment Flooding / 5 43					✓		EA2.2 Ability to determine and interpret the following as they apply to the Containment Flooding: Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	3.3	1.0
K/A Category Point Totals:	0	0	1	1	1	0	Group Point Total:		3

Form ES-401-3 (R8, S1)													
PWR SRO Examination Outline													
Plant Systems - Tier 2/Group 1													
System # / Name	K <sub>1</sub>	K <sub>2</sub>	K <sub>3</sub>	K <sub>4</sub>	K <sub>5</sub>	K <sub>6</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	G	K/A Topic(s)	Imp. Points
001 Control Rod Drive									✓			A3.07 Ability to monitor automatic operation of the RCS, including: Boration/dilution.	3.7 1.0
003 Reactor Coolant Pump						✓						K6.02 Knowledge of the effect of a loss or malfunction of the following will have on the RCS: RCP seals and seal water supply.	3.1 1.0
004 Chemical and Volume Control					✓							K5.01 Knowledge of the operational implications of the following concepts as they apply to the CVCS: Importance of oxygen control in RCS.	3.3 1.0
013 Engineered Safety Features Actuation							✓					A1.01 Ability to predict and / or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ESFAS controls including: RCS pressure and temperature.	4.2 1.0
014 Rod Position Indication											✓	2.2.22 Knowledge of limiting conditions for operations and safety limits.	4.1 1.0
015 Nuclear Instrumentation			✓									K3.01 Knowledge of the effect that a loss or malfunction of the NIS will have on the following: RPS.	4.3 1.0
017 In-core Temperature Monitor	✓											K1.02 Knowledge of the physical connections and / or cause effect relationships between the In-Core Temperature Monitor system and the following systems: RCS	3.5 1.0
022 Containment Cooling				✓								K4.03 Knowledge of the CCS design feature(s) and/or interlocks which provide for the following: Automatic containment isolation.	4.0 1.0
(2) 51			✓									K3.01 Knowledge of the effect that a loss or malfunction of the CCS will have on the following: Containment equipment subject to damage by high or low temperature, humidity, and pressure.	3.2 1.0
025 Ice Condenser													
026 Containment Spray									✓			A3.01 Ability to monitor automatic operation of the CSS, including: Pump starts and correct MOV positioning.	4.5 1.0
056 Condensate				✓								K4.14 Knowledge of Condensate System design features(s) and / or interlock(s) which provide for the following: MF-W pump NPSII	2.6 1.0

ES-401

## PWR SRO Examination Outline

Form ES-401-3 (R8, S1)

## Plant Systems - Tier 2/Group 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)	Imp.	Points
059 Main Feedwater 54								✓				A2.01 Ability to (a) predict the impacts of the following malfunctions or operations on the MFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Feedwater actuation of AFW system. (55.43)	3.6	1.0
061 Auxiliary/Emergency Feedwater 55					✓							K5.01 Knowledge of the operational implications of the following concepts as they apply to the AFW: Relationship between AFW flow and RCS heat transfer.	3.9	1.0
56							✓					A1.04 Ability to predict and / or monitor changes in parameters (to prevent exceeding design limits) associated with operating the AFW controls including: AFW source tank level.	3.9	1.0
063 DC Electrical Distribution 57											✓	2.4.11 Knowledge of abnormal condition procedures.	3.6	1.0
58				✓								K4.02 Knowledge of DC electrical system design feature(s) and / or interlocks which will provide for the following: breaker interlocks, permissives, bypasses, and cross-ties..	3.2	1.0
068 Liquid Radwaste 59										✓		A4.03 Ability to manually operate and / or monitor in the control room: Stoppage of release if limits exceeded.	3.8	1.0
071 Waste Gas Disposal 60										✓		A4.26 Ability to manually operate and / or monitor in the control room: Authorized waste gas release, conducted in compliance with radioactive gas discharge permit.	3.9	1.0
072 Area Radiation Monitoring 61							✓					A1.01 Ability to predict and / or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ARM system controls including: Radiation levels.	3.6	1.0
62		✓										K2.01 Knowledge of the bus power supplies to the following: Radiation monitoring systems	2.5	1.0
K/A Category Point Totals:	1	1	2 (1)	2 (1)	2	1	3	1	2	2	2	Group Point Total:		19

ES-401

## PWR SRO Examination Outline

Form ES-401-3 (R8, S1)

## Plant Systems - Tier 2/Group 2

System # / Name	K <sub>1</sub>	K <sub>2</sub>	K <sub>3</sub>	K <sub>4</sub>	K <sub>5</sub>	K <sub>6</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant 63	✓											K1.07 Knowledge of the physical connections and / or cause-effect relationships between the RCS and following systems: Reactor vessel level indicating system.	3.7	1.0
006 Emergency Core Cooling 64										✓		A4.01 Ability to manually operate and / or monitor in the control room: Pumps.	3.9	1.0
010 Pressurizer Pressure Control 65								✓				A2.02 Ability to (a) predict the impacts of the following malfunctions or operation on the PZR pressure control system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Spray valve failures.	3.9	1.0
011 Pressurizer Level Control 66				✓								K4.06 Knowledge of the PZR LCS design feature(s) and/or interlock(s) which provide for the following: Letdown isolation	3.7	1.0
012 Reactor Protection 67				✓								K4.02 Knowledge of RPS design feature(s) and / or interlocks which provide for the following: Automatic reactor trip when RPS setpoints are exceeded for each RPS function, basis for each.	4.3	1.0
016 Non-nuclear Instrumentation 68			✓									K3.06 Knowledge of the effect that a loss or malfunction of the Non-Nuclear Instrumentation System will have on the following: AFW System	3.7	1.0
027 Containment Iodine Removal												NOT SELECTED.		
028 Hydrogen Recombiner and Purge Control (2) 69					✓							K5.02 Knowledge of the operational implications as they apply to the HRPS: Flammable hydrogen concentration.	3.9	1.0
(2) 69					✓							K5.03 Knowledge of the operational implications as they apply to the HRPS: Sources of hydrogen within containment.	3.6	1.0
029 Containment Purge 70									✓			A3.01 Ability to monitor automatic operation of the Containment Purge System including: CPS isolation.	4.0	1.0
033 Spent Fuel Pool Cooling 71	✓											K1.05 Knowledge of the physical connection and / or cause-effect relationships between the Spent Fuel Pool Cooling System and the following systems: RWSI	2.8	1.0
034 Fuel Handling Equipment 72							✓					A1.02 Ability to predict and / or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Fuel Handling System controls including: Water level in the refueling canal.	3.7	1.0



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## PWR SRO Examination Outline

Form ES-401-3 (R8, S1)

## Plant Systems - Tier 2/Group 2

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)	Imp.	Points
035 Steam Generator												NOT SELECTED.		
039 Main and Reheat Steam 73					✓							K5.01 Knowledge of the operational implications of the following concepts as they apply to the MRSS: Definition and causes of steam/water hammer.	3.1	1.0
055 Condenser Air Removal 74				✓								K4.02 Knowledge of CARS design feature(s) and / or interlocks which provide for the following: Effluent control and monitoring	2.6	1.0
062 AC Electrical Distribution												NOT SELECTED.		
064 Emergency Diesel Generator 75						✓						K6.08 Knowledge of the effect of a loss or malfunction of the following will have on the EDG system: Fuel oil storage tanks.	3.3	1.0
073 Process Radiation Monitoring 76			✓									K3.01 Knowledge of the effect that a loss or malfunction of the PRM system will have on the following: Radioactive effluent release.	4.2	1.0
075 Circulating Water 77		✓										K2.03 Knowledge of the bus power supplies to the following: Emergency/essential SWS pumps.	2.7	1.0
079 Station Air												NOT SELECTED.		
086 Fire Protection 78										✓		A4.01 Ability to manually operate and / or monitor in the control room: Fire water pumps.	3.3	1.0
103 Containment 79			✓									K3.02 Knowledge of the effect that a loss or malfunction of the containment system will have on the following: Loss of containment integrity under normal operations.	4.2	1.0
K/A Category Point Totals:	2	1	3	3	2	1	1	1	1	2	0	Group Point Total:		17

ES-401		PWR SRO Examination Outline										Form ES-401-3 (R8, S1)		
Plant Systems - Tier 2/Group 3														
System # / Name	K <sub>1</sub>	K <sub>2</sub>	K <sub>3</sub>	K <sub>4</sub>	K <sub>5</sub>	K <sub>6</sub>	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	A <sub>4</sub>	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal												NOT SELECTED.		
007 Pressurizer Relief/Quench Tank (2) 80								✓				A2.05 Ability to (a) predict the impacts of the following malfunctions or operation on the P S; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Exceeding PRT high-pressure limits.	3.6	1.0
008 Component Cooling Water												NOT SELECTED.		
041 Steam Dump/Turbine Bypass Control 81			✓									K3.02 Knowledge of the effect that a loss or malfunction of the SDS will have on the following: RCS	3.9	1.0
045 Main Turbine Generator												NOT SELECTED.		
076 Service Water 82				✓								K4.02 Knowledge of SWS design feature(s) and / or interlocks which provide for the following: Automatic start features associated with SWS pump controls.	3.2	1.0
078 Instrument Air 83			✓									K3.02 Knowledge of the effect that a loss or malfunction of the IAS will have on the following: Systems having pneumatic valves and controls.	3.6	1.0
K/A Category Point Totals:	0	0	2	1	0	0	0	1	0	0	0	Group Point Total:		4
Plant-Specific Priorities														
System / Topic	Recommended Replacement for...										Reason	Points		
Plant-Specific Priority Total: (limit 10)														

Facility: Indian Point 2		Date of Exam: July 6,2001		Exam Level: SRO	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.11 84	Knowledge of less than one hour technical specification action statements for systems.	3.8	1.0	
	2.1.32 85	Ability to explain and apply all system limits and precautions.	3.8	1.0	
	2.1.20 86	Ability to execute procedure steps.	4.2	1.0	
	2.1.26 87	Knowledge of non-nuclear safety procedures (e.g. rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen, and hydrogen).	2.6	1.0	
	<del>2.1.17 88</del> 2.1.28 88	Knowledge of the purpose and function of major system components and controls.	3.3	1.0	
	(3)				
Total				5.0	
Equipment Control	2.2.28 89	Knowledge of new and spent fuel movement procedures.	3.5	1.0	
	2.2.29 90	Knowledge of SRO fuel handling responsibilities.	3.8	1.0	
	2.2.25 91	Knowledge of bases in Technical Specifications for limiting conditions for operation and safety limits.	3.7	1.0	
	2.2.5 92	Knowledge of the process for making a change in the facility as described in the safety analysis report.	2.7	1.0	
	2.2.12 93	Knowledge of surveillance procedures.	3.4	1.0	
Total				5.0	
Radiation Control	2.3.5 94	Knowledge of the use and function of personnel monitoring equipment.	2.5	1.0	
	2.3.4 95	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	3.1	1.0	
	2.3.2 96	Knowledge of the facility ALARA program.	2.9	1.0	
Total				3.0	
Emergency Procedures/ Plan	2.4.27 97	Knowledge of fire in the plant procedure.	3.5	1.0	
	<del>2.4.22 98</del>	<del>Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.</del>	<del>4.0</del>	<del>1.0</del>	
	<b>2.4.41 98</b>	<b>Knowledge of the emergency action level thresholds and classifications.</b>	<b>4.1</b>	<b>1.0</b>	
	2.4.30 99	Knowledge of which events related to system operations / status should be reported to outside agencies.	3.6	1.0	
	2.4.18 100	Knowledge of the specific bases for EOPs.	3.6	1.0	
	Total				4.0
Tier 3 Point Total (RO/SRO)				13/17	

A number of modifications have been made from Rev. 0 to Rev. 1 of the written exam outline. The following notes correspond to the annotated, affected portions of the outline.

- (1) Updated Form ES-401-3 cover sheet Tier/Group data to reflect K/A changes.
- (2) Selected new K/A's for the following questions, see Form ES-401-10:

<u>Question #</u>	<u>Original</u>	<u>New</u>
25	000007.EK2.03	000033.AK2.02
39	000061.AA1.01	000065.AK3.08
51	022.K4.03	022.K3.01
69	028K5.02	028K5.03

- (3) Selected a new K/A for the following question, see Form ES-401-10:

<u>Question #</u>	<u>Original</u>	<u>New</u>
98	Gen.2.4.22	Gen.2.4.41

- (4) Repaired typographical error in K/A for Question # 80 (PS vs. circulating water system).
- (5) Repaired typographical error in Question # 88 (K/A 2.1.28 vs. K/A 2.1.17).

Tier / Group	Randomly Selected K/A	Reason for Rejection
Tier 1/Group 2	000007.EK2.03	Not facility specific.
Tier 1/Group 2	000061.AA1.01	Not facility specific.
Tier 2/Group 1	022.K4.03	Not facility specific.
Tier 2/Group 1	028.K5.02	Could not develop a discriminatory question that was not minutia.
Tier 3	Gen.2.4.22	Replaced with facility specific PRA priority K/A.

Facility: Indian Point 2 Scenario No.: 1 Op-Test No.:    

Examiners

Operators:

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\_\_\_\_\_  
\_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

(1)

Initial Conditions: IC-2; 100% Power, MOL, RCS Boron 805<sup>(2)</sup> PPM, Control Bank D 220 steps, Control Rods in Automatic, Equilibrium Xenon (2783 PCM).

Turnover: The following equipment is out of service: 23<sup>(3)</sup> EDG(6 hours ago), 23<sup>(3)</sup> Motor driven AFW pump(48 hours ago), 21 Charging pump(3 weeks ago). A severe thunderstorm warning is in effect for the next 4 hours. There is a 5 GPD tube leak on the 23 Steam Generator, 11 Centac air compressor OOS, 22 condenser has increased air leakage.<sup>(4)</sup>

Event No.	Malf. No.	Event Type*	Event Description
1		C	SGTL on 23 S/G beginning at 40 GPD rising to 70 <sup>(5)</sup> GPD over 10 minutes. (Implement AOI 1.2)
2	N/A	SRO-N RO-R	Perform normal plant shutdown in response to SGTL(Implement POP 3.1 100% to 95% power)
3		C	Single IRPI failure (Implement AOI 16.1.1; Tech Spec Entry)
4 <sup>(6)</sup>		I	PRZR Pressure transmitter PT-455(selected) fails HIGH
5		M	SGTR on 23 S/G 500 GPM (Implement E-0/E-3)
6		C	Auto start failure for AFW pumps.
7		M	SBLOCA Large enough to meet the RCP trip criteria (Implement ECA 3.1)
			Terminate Drill when RCS cooldown is started in ECA 3.1.

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

#### Changes from Original Submittal:

- Deleted Objectives to conform to Supplement 1 revision to the form.
- Corrected initial Boron Concentration.
- Changed 21 D/G and AFW pump to 23 D/G and AFW pump to avoid Tech Spec 3.0.1 entry on Drill setup
- Added 11 Centac air compressor OOS and condenser air leakage to initial conditions to mimic current plant conditions.
- Reduced SGTL to 70 GPD; 74 GPD was too close to next highest threshold for additional actions that were not part of intended scenario.
- Deleted RCP #2 seal failure. Scenario ran too long and there are still enough malfunctions without this failure.

Facility: Indian Point 2Scenario No.: 2Op-Test No.:    

Examiners

Operators:

(1)

Initial Conditions: IC-18; 89% Power, MOL, RCS Boron 800<sup>(2)</sup> PPM, Control Bank D 212<sup>(2)</sup> steps, Control Rods in Automatic, Equilibrium Xenon (2685 PCM).

Turnover: The following equipment is out of service: 23<sup>(3)</sup> EDG(6 hours ago), 23<sup>(3)</sup> Motor driven AFW pump(48 hours ago), 21 Charging pump(3 weeks ago). A severe thunderstorm warning is in effect for the next 4 hours. There is a 5 GPD tube leak on the 23 Steam Generator. Power ascension is planned to 100%. POP 1.3 being used, and SOP 20.2 has been referenced for starting the third condensate pump. 11 Centac air compressor OOS, 22 condenser has increased air inleakage.<sup>(4)</sup>

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Start condensate pump P 22. (Implement SOP 20.2)
2		I	PR channel 44 fails high, Rods insert in response. (Implement AOI 13.1.3, 16.1.2 and SOP 13.1 Tech Spec entry)
3		I	S/G level transmitter LT 417B fails low; 21 S/G level rises in response.(Implement AOI 28.12 Tech Spec entry)
4		C SRO-N RO-R	Dropped rod (most reactive) <sup>(5)</sup> . Power reduction in response to dropped rod. (Implement AOI 16.1.1, Tech Spec entry)
5		C	Loss of condenser vacuum leads to Turbine/Rx Trip (Implement AOI 20.1 and E-0)
6		M	(Time delay after ES-0.1 has been entered) Loss of Offsite Power
7		C	EDG 22 fails to Auto Start and cannot be started, EDG 21 <sup>(3)</sup> starts, but output breaker fails to auto close, can be manually closed. (Plant left with a single power supply to a single 480V bus).
8		M	EDG 21 <sup>(3)</sup> trips, Station Blackout (Implement ECA-0.0)
			Terminate drill after S/Gs are depressurized. (Step 17 of ECA-0.0).

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

#### Changes from Original Submittal:

- Deleted Objectives to conform to Supplement 1 revision to the form.
- Corrected initial Boron Concentration and Rod position.
- Changed 21 D/G and AFW pump to 23 D/G and AFW pump to avoid Tech Spec 3.0.1 entry on Drill setup
- Added 11 Centac air compressor OOS and condenser air inleakage to initial conditions to mimic current plant conditions.
- Removed Dropped rod recovery; too time consuming with little discriminatory value. Not needed for total events

Facility: Indian Point 2Scenario No.: 3Op-Test No.:     

Examiners

Operators:

(1)

Initial Conditions: IC-22; 9% Power, BOL, RCS Boron 1310<sup>(2)</sup> PPM, Control Bank D 120<sup>(2)</sup> steps, Control Rods in Manual, Xenon (3 PCM) AFW is Service.

Turnover: The following equipment is out of service: 23<sup>(3)</sup> EDG(6 hours ago), <sup>(4)</sup>21 Charging pump(3 weeks ago). A severe thunderstorm warning is in effect for the next 4 hours. There is a 5 GPD tube leak on the 23 Steam Generator. A Startup after a refueling outage has been completed, however Senior management has decided to return to Hot Zero Power to await repairs on the EDG and AFW pump. Procedure POP 3.1 step 4.24 is to implemented, 11 Centac air compressor OOS, 22 condenser has increased air inleakage.<sup>(5)</sup>

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	SRO-N RO-R	Power reduction to Hot zero power.
2 <sup>(6)</sup>		C	<b>Running Charging pump P-22 trips(Tech Spec Entry)(Implement AOI 3.1)</b>
3 <sup>(6)</sup>		I	<b>VCT level Transmitter LT-112 fails High-actual VCT level drops. (Implement AOI 3.1)</b>
4		C	(Pre-Load) Auto Rx Trip failure- Manual available
5		M	Feedline Rupture (Maximum flowrate) on 24 S/G inside CNMT
6		C	Single Steam Dump valve fails Open causing RCS cooldown.
7		C	Loss of SI flow (All SI pumps fail to auto start, Manual start is available).
			Terminate Drill when SI flow is reset in E-1.

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

### Changes from Original Submittal:

- Deleted Objectives to conform to Supplement 1 revision to the form.
- Corrected initial Boron Concentration and Rod position.
- Changed 21 D/G and AFW pump to 23 D/G to avoid Tech Spec 3.0.1 entry on Drill setup
- Made AFW Pump 21 available, it is needed for low power operations
- Added 11 Centac air compressor OOS and condenser air inleakage to initial conditions to mimic current plant conditions.
- Reversed events 2 and 3 to avoid potential confusion regarding the reason for P-22 tripping



Facility: Indian Point 2 Scenario No.: 4 Op-Test No.:     

Examiners

Operators:

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\_\_\_\_\_  
\_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

(1)

Initial Conditions: IC-18; 89% Power, MOL, RCS Boron 800<sup>(2)</sup> PPM, Control Bank D 212<sup>(2)</sup> steps, Control Rods in Automatic, Equilibrium Xenon (2685 PCM).

Turnover: The following equipment is out of service: 23<sup>(3)</sup> EDG(6 hours ago), 23<sup>(3)</sup> Motor driven AFW pump(48 hours ago), 21 Charging pump(3 weeks ago). A severe thunderstorm warning is in effect for the next 4 hours. There is a 5 GPD tube leak on the 23 Steam Generator. Power ascension is planned to 100%. POP 1.3 being used, and SOP 20.2 has been referenced for starting the third condensate pump. **11 Centac air compressor OOS, 22 condenser has increased air inleakage.**<sup>(4)</sup>

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	SRO-N RO-R	Raise power to 100% (Implement POP 1.3)
2		I	Blender Totalizer fails to reset causing inadvertent dilution (Implement AOI 3.4)
3 <sup>(5)</sup>		C	<b>22 Battery charger Output breaker fails Open (Tech Spec entry)</b>
4		C	Loss of Vital Bus 21(No trip expected) (Implement AOI 2.7.16)
5		C	RCP Locked rotor
6		M	ATWS (Implement FR-S.1)
7		C	MOV 333 Emergency Boration Valve Fails to Open.
8		M	Steam Generator safety valve sticks open following ATWS plant response causing loss of secondary coolant.
			Terminate drill when SI termination criteria met in E-1.

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

#### Changes from Original Submittal:

- Deleted Objectives to conform to Supplement 1 revision to the form.
- Corrected initial Boron Concentration and Rod position.
- Changed 21 D/G and AFW pump to 23 D/G and AFW pump to avoid Tech Spec 3.0.1 entry on Drill setup
- Added 11 Centac air compressor OOS and condenser air inleakage to initial conditions to mimic current plant conditions.
- Added to scenario to force a Tech Spec entry early in the scenario, the intended Tech Spec entry with loss of Vital Bus 21 takes too long to occur. The procedure has the crew address all failed instruments first to stabilize the plant.