

2009 MONTICELLO NUCLEAR GENERATING PLANT

INITIAL EXAMINATION

OUTLINE SUBMITTAL



December 2, 2008

L-MT-08-087
10 CFR Part 55.40

Regional Administrator, Region III
US Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, IL 60532-4352
Attn: Michael Bielby

Monticello Nuclear Generating Plant
Docket 50-263
License No. DPR-22

Examination Outlines For the Initial Licensing Examination to Be Conducted the Week of February 23, 2009

Reference 1: NUREG 1021, Operator Licensing Examination Standards for Power Reactors, Revision 9 Supplement 1

In accordance with the requirements of 10 CFR 55.40(b) (4), a power reactor facility licensee must receive NRC approval of their proposed written examination and operating tests. Further, 10 CFR 55.40 (a) requires that examinations meet the requirements of Reference 1. Therefore, enclosed for review are the proposed examination outlines for the initial license examinations for the Monticello Nuclear Generating Plant (MNGP) operator license applicants.

In accordance with 10 CFR 55.49, "Integrity of Examinations and Tests" and Reference 1, Section ES-201, Attachment 1, "Examination Security and Integrity Considerations," the Northern States Power Company – a Minnesota corporation (NSPM) requests that the enclosed materials be withheld from public disclosure until after the examinations are complete.

The proposed examination outlines were prepared per the guidelines of Reference 1, sections ES-301 and ES-401. Proposed outlines have been prepared to support development, by the NSPM, of examinations for five (5) Reactor Operator (RO) license candidates, one (1) Senior Reactor Operator (SRO) – Upgrade license candidate and six (6) SRO - Instant license candidates.

Enclosed are the following specific items for your review.

Enclosure 1: Form ES-201-2, Examination Outline Quality Checklist

Enclosure 2: Form ES-201-3, (Site Equivalent) Examination Security Agreements

Enclosure 3: Form ES-301-1, Administrative Topics Outline - RO

- Enclosure 4: Form ES-301-1, Administrative Topics Outline - SRO
- Enclosure 5: Form ES-301-2, Control Room/In-Plant Systems Outline - RO
- Enclosure 6: Form ES-301-2, Control Room/In-Plant Systems Outline - SRO - I
- Enclosure 7: Form ES-301-2, Control Room/In-Plant Systems Outline - SRO - U
- Enclosure 8: Form ES-D-1, Scenario Outlines (Draft ES-301-4 included)
- Enclosure 9: Form ES-301-5, Transient and Event Checklist
- Enclosure 10: Form ES-401-1, BWR Examination Outline (Cover)
- Enclosure 11: Form ES-401-1, BWR Examination Outline (RO)
- Enclosure 12: Form ES-401-3, Generic Knowledge and Abilities Outline (RO)
- Enclosure 13: Form ES-401-1, BWR Examination Outline (SRO)
- Enclosure 14: Form ES-401-3, Generic Knowledge and Abilities Outline (SRO)
- Enclosure 15: Form ES-401-4, Record of Rejected K/As Form
- Enclosure 16: MNGP 2009 ILT NRC Written Exam Outline Random and Systematic Process / Audit Exam Methodology
- Enclosure 17: MNGP 2009 ILT Audit Written, JPM, and Scenario Outlines

This letter makes no new commitments and no revisions to existing commitments.

 For T. O'Connor

Timothy J. O'Connor
Site Vice President, Monticello Nuclear Generating Plant
Northern States Power Company - Minnesota

Enclosures

cc: Administrator, Region III, USNRC (w/o attachments)
Project Manager, Monticello, USNRC (w/o attachments)
Resident Inspector, Monticello, USNRC (w/o attachments)

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Facility: MONTICELLO		Date of Examination: 02/23/09			
Item	Task Description	Initials			
		a	b*	c#	
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	B	Y	MGB	
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	B	Y	MGB	
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	B	Y	MGB	
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	B	Y	MGB	
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	B	Y	MGB	
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.	B	Y	MGB	
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	B	Y	MGB	
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	B	Y	MGB	
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	B	Y	MGB	
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	B	Y	MGB	
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	B	Y	MGB	
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	B	Y	MGB	
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	B	Y	MGB	
	d. Check for duplication and overlap among exam sections.	B	Y	MGB	
	e. Check the entire exam for balance of coverage.	B	Y	MGB	
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	B	Y	MGB	
a. Author	<u>Baron Becker</u>	Printed Name/Signature	<u>[Signature]</u>	Date	<u>11-7-08</u>
b. Facility Reviewer (*)	<u>RON UGLOW</u>		<u>[Signature]</u>		<u>11-11-08</u>
c. NRC Chief Examiner (#)	<u>Michael Bielby</u>		<u>[Signature]</u>		<u>12-29-08</u>
d. NRC Supervisor	<u>Dellie Mendel</u>		<u>[Signature]</u>	<u>JM 12/31/08</u>	<u>12/31/08</u>
Note:	# Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines				

Facility: Monticello		Date of Examination: 2-23-09
Examination Level: RO X	SRO	Operating Test Number: MNGP 09
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	S, D	JPM-3139-002 Control Room Shift Turnover Checklist
Conduct of Operations	S, N	JPM-B.09.02-06 REACTIVE CAPABILITY VS. MEGAWATT LOAD DETERMINATION
Equipment Control	S, D	JPM-0000-H-002 (Daily Log) Off-Gas Hydrogen Analyzer Checks
Radiation Control	R, D, P	JPM-4 AWI-08.04.06-002 Locked High Radiation Area Entry
Emergency Procedures/Plan	N/A	N/A
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected)		

Facility: Monticello Examination Level: RO		SRO X	Date of Examination: 2-23-09 Operating Test Number: MNGP 09
Administrative Topic (see Note)	Type Code*	Describe activity to be performed	
Conduct of Operations	R, D	JPM-OWI-01-06-002 Crew Staffing Determination	
Conduct of Operations	S, N	JPM-B.09.02-06 REACTIVE CAPABILITY VS. MEGAWATT LOAD DETERMINATION	
Equipment Control	S, D	JPM-0000-H-002 (Daily Log) Off-Gas Hydrogen Analyzer Checks	
Radiation Control	R, D, P	JPM-4 AWI-08.04.06-002 Locked High Radiation Area Entry	
Emergency Procedures/Plan	R, D	JPM-A.2-101-018 Classify Event According to Emergency Classification Guidelines	
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.			
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1; randomly selected)			

Facility: Monticello Exam Level: RO X SRO-I SRO-U		Date of Examination: 2-23-09 Operating Test No.: MNGP 09	
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)			
System / JPM Title		Type Code*	Safety Function
a. JPM-B.01.04-004 Startup of No. 11 Recirc Pump		A, D, L, P, S	1
b. JPM-B.03.02-001 Shutdown HPCI System when Auto Initiation Signals are not present		D, L, S	2
c. JPM-B.03.03-001 Perform SRV Operability and Position Indication Check on RV-2-71A IAW Test 0112		D, L, S	3
d. JPM-B.03.01-006 Place Core Spray in Torus Mixing Mode		D, S	4
e. JPM-B.04.02-005 Manually isolate Secondary Containment		A, EN, N, S	5
f. JPM-E.04-07-001 Restore LC-103 from LC-104		D, L, S	6
g. JPM-0010 Reactor Scram Functional Test		N, S	7
h. JPM-B.07.02.02-003 Swapping Off Gas Tanks		A, D, P, S	9
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. JPM-C.5-3101-002 Depressurize the Scram Air Header Locally		D, E, L, P, R	1
j. JPM-B.02.04.05-0004 Outboard MSIV Low Air Pressure		A, D	3
k. JPM-B.08.05-003 Manually Start the Electric Fire Pump		D	8
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.			
* Type Codes	Criteria for RO / SRO-I / SRO-U		
(A)lternate path	4-6 / 4-6 / 2-3		
(C)ontrol room			
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4		
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1		
(EN)gineered safety feature	- / - / ≥ 1 (control room system)		
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1		
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1		
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)		
(R)CA	≥ 1 / ≥ 1 / ≥ 1		
(S)imulator			

Facility: Monticello Exam Level: RO SRO-I X SRO-U		Date of Examination: 2-23-09 Operating Test No.: MNGP 09	
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)			
System / JPM Title		Type Code*	Safety Function
a. JPM-B.01.04-004 Startup of No. 11 Recirc Pump		A, D, L, P, S	1
b. JPM-B.03.02-001 Shutdown HPCI System when Auto Initiation Signals are not present		D, L, S	2
c. JPM-B.03.03-001 Perform SRV Operability and Position Indication Check on RV-2-71A IAW Test 0112		D, L, S	3
d.			
e. JPM-B.04.02-005 Manually isolate Secondary Containment		A, EN, N, S	5
f. JPM-E.04-07-001 Restore LC-103 from LC-104		D, L, S	6
g. JPM-0010 Reactor Scram Functional Test		N, S	7
h. JPM-B.07.02.02-003 Swapping Off Gas Storage Tanks		A, D, P, S	9
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. JPM-C.5-3101-002 Depressurize the Scram Air Header Locally		D, E, L, P, R	1
j. JPM-B.02.04.05-0004 Outboard MSIV Low Air Pressure		A, D	3
k. JPM-B.08.05-003 Manually Start the Electric Fire Pump		D	8
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.			
* Type Codes	Criteria for RO / SRO-I / SRO-U		
(A)lternate path	4-6 / 4-6 / 2-3		
(C)ontrol room			
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4		
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1		
(EN)gineered safety feature	- / - / ≥ 1 (control room system)		
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1		
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1		
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)		
(R)CA	≥ 1 / ≥ 1 / ≥ 1		
(S)imulator			

Facility: Monticello Exam Level: RO SRO-I SRO-U X		Date of Examination: 2-23-09 Operating Test No.: MNGP 09	
Control Room Systems [@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)			
System / JPM Title		Type Code*	Safety Function
a.			
b.			
c.			
d.			
e. JPM-B.04.02-005 Manually isolate Secondary Containment		A, EN, N, S	5
f. JPM-E.04-07-001 Restore LC-103 from LC-104		D, L, S	6
g. JPM-0010 Reactor Scram Functional Test		N, S	7
h.			
In-Plant Systems [@] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. JPM-C.5-3101-002 Depressurize the Scram Air Header Locally		D, E, L, P, R	1
j. JPM-B.02.04.05-0004 Outboard MSIV Low Air Pressure		A, D	3
k.			
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.			
* Type Codes	Criteria for RO / SRO-I / SRO-U		
(A)lternate path	4-6 / 4-6 / 2-3		
(C)ontrol room			
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4		
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1		
(EN)gineered safety feature	- / - / - ≥ 1 (control room system)		
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1		
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1		
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)		
(R)CA	≥ 1 / ≥ 1 / ≥ 1		
(S)imulator			

Facility: **Monticello** Date of Exam: **February 23, 2009** Operating Test No.: **MNGP 09**

A P P L I C A N T	E V E N T T Y P E	Scenarios													T O T A L	M I N I M U M (*)		
		1			2			3			4							
		C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N			C R E W P O S I T I O N							
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P					
	S R O I			S R O I			R O							R	I	U		
RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX							4						1	1	1	0	
	NOR			1			1							2	1	1	1	
	I/C			4,5			3,6,8		2,6					7	4	4	2	
	MAJ			6			7		7					3	2	2	1	
	TS													0	0	2	2	
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX		2			4			4					3	1	1	0	
	NOR					1								1	1	1	1	
	I/C			3,7		3,6			3,5,8					7	4	4	2	
	MAJ			6			7		7					3	2	2	1	
	TS					2,6			2,3,5					5	0	2	2	
RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	RX	2					4							2	1	1	0	
	NOR									1				1	1	1	1	
	I/C	3,4,5				2,5			3,5					7	4	4	2	
	MAJ	6				7			7					3	2	2	1	
	TS	3,4												2	0	2	2	
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX														1	1	0	
	NOR														1	1	1	
	I/C														4	4	2	
	MAJ														2	2	1	
	TS														0	2	2	

Instructions:

1. Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
2. Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.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 1-for-1 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 requirements specified for the applicant's license level in the right-hand columns.

Facility: **Monticello** Date of Exam: **February 23, 2009** Operating Test No.: **MNGP 09**

A P P L I C A N T	E V E N T T Y P E	Scenarios													T O T A L	M I N I M U M (*)		
		1			2			3			4 SPARE							
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION							
		S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	S R O	A T C	B O P	R		I	U	
RO X SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX				4							4		1	1	1	0	
	NOR			1										1	1	1	1	
	I/C			4,5	2,5							2,7		4	4	4	2	
	MAJ			6	7							6		2	2	2	1	
	TS													0	0	2	2	
RO X SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX		2											1	1	1	0	
	NOR					1						1		1	1	1	1	
	I/C			3,7				3,6,8				3,5,8		5	4	4	2	
	MAJ			6				7				6		2	2	2	1	
	TS													0	0	2	2	
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	RX	2			4							4		2	1	1	0	
	NOR				1							1		1	1	1	1	
	I/C	3,4,5			3,6							2,3		5	4	4	2	
	MAJ	6			7							6		2	2	2	1	
	TS	3,4			2,6							1,2		4	0	2	2	
RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>	RX														1	1	0	
	NOR														1	1	1	
	I/C														4	4	2	
	MAJ														2	2	1	
	TS														0	2	2	

Instructions:

- Check the applicant level and enter the operating test number and Form ES-D-1 event numbers for each event type; TS are not applicable for RO applicants. ROs must serve in both the "at-the-controls (ATC)" and "balance-of-plant (BOP)" positions; Instant SROs must serve in both the SRO and the ATC positions, including at least two instrument or component (I/C) malfunctions and one major transient, in the ATC position. If an Instant SRO *additionally* serves in the BOP position, one I/C malfunction can be credited toward the two I/C malfunctions required for the ATC position.
- Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.5.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 1-for-1 basis.
- 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 requirements specified for the applicant's license level in the right-hand columns.

Facility: Monticello		Date of Exam: 2-23-09																	
Tier	Group	RO K/A Category Points											SRO-Only Points						
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total			
1. Emergency & Abnormal Plant Evolutions	1	3	3	3	N/A			3	4	N/A			4	20	4	3	7		
	2	1	2	1	N/A			1	1	N/A			1	7	2	1	3		
	Tier Totals	4	5	4	N/A			4	5	N/A			5	27	6	4	10		
2. Plant Systems	1	3	2	2	3	2	3	3	2	1	3	2	26	3	2	5			
	2	1	1	1	2	1	1	1	1	1	1	1	12	n/a	2	1	3		
	Tier Totals	4	3	3	5	3	4	4	3	2	4	3	38	5	3	8			
3. Generic Knowledge and Abilities Categories					1		2		3		4		10		1	2	3	4	7
					3		3		2		2				2	2	1	2	
<p>Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).</p> <p>2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.</p> <p>3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.</p> <p>4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.</p> <p>5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.</p> <p>6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.</p> <p>7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.</p> <p>8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.</p> <p>9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.</p>																			

ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)										
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4				X			AA1.01 Recirculation System	3.5	1	
295003 Partial or Complete Loss of AC / 6					X		AA2.05 Whether a partial or complete loss of A.C power has occurred	3.9	1	
295004 Partial or Total Loss of DC Pwr / 6						X	2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1	
295005 Main Turbine Generator Trip / 3	X						AK1.03 Pressure effects on reactor level	3.5	1	
295006 SCRAM / 1		X					AK2.05 CRD Mechanism	3.1	1	
295016 Control Room Abandonment / 7			X				AK3.03 Disabling control room controls	3.5	1	
295018 Partial or Total Loss of CCW / 8				X			AA1.01 Backup systems	3.3	1	
295019 Partial or Total Loss of Inst. Air / 8					X		AA2.02 Status of safety-related instrument air system loads	3.6	1	
295021 Loss of Shutdown Cooling / 4						X	2.4.6 Knowledge of EOP mitigation strategies	3.7	1	
295023 Refueling Acc / 8	X						AK1.01 Radiation exposure hazards	3.6	1	
295024 High Drywell Pressure / 5		X					EK2.01 HPCI	3.9	1	
295025 High Reactor Pressure / 3			X				EK3.09 Low-Low set initiation	3.7	1	
295026 Suppression Pool High Water Temp. / 5				X			EA1.01 Suppression pool cooling	4.1	1	
295027 High Containment Temperature / 5							N/A MNGP			
295028 High Drywell Temperature / 5					X		EA2.03 Reactor water level	3.7	1	
295030 Low Suppression Pool Wtr Lvl / 5						X	2.4.6 Knowledge of EOP mitigation strategies	3.7	1	
295031 Reactor Low Water Level / 2					X		EA2.04 Adequate core cooling	4.6	1	
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1						X	2.1.32 Ability to explain and apply system limits and precautions.	3.8	1	
295038 High Off-site Release Rate / 9	X						EK1.02 Protection of the general public	4.2	1	
600000 Plant Fire On Site / 8		X					AK2.01 Sensors / detectors and valves	2.6	1	
700000 Generator Voltage and Electric Grid Disturbances / 6			X				AK3.02 Actions contained in abnormal operating procedure for voltage and grid disturbances	3.6	1	
K/A Category Totals:	3	3	3	3	4	4	Group Point Total:	20		

ES-401		BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)										
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#	
295002 Loss of Main Condenser Vac / 3	X						AK1.03 Loss of heat sink	3.6	1	
295007 High Reactor Pressure / 3										
295008 High Reactor Water Level / 2										
295009 Low Reactor Water Level / 2										
295010 High Drywell Pressure / 5				X			AA1.04 Drywell sampling system	3.1	1	
295011 High Containment Temp / 5							N/A MNGP			
295012 High Drywell Temperature / 5										
295013 High Suppression Pool Temp. / 5					X		AA2.01 Suppression pool temperature	3.8	1	
295014 Inadvertent Reactivity Addition / 1										
295015 Incomplete SCRAM / 1						X	2.4.18 Knowledge of the specific bases for EOPs	3.3	1	
295017 High Off-site Release Rate / 9										
295020 Inadvertent Cont. Isolation / 5 & 7		X					AK2.10 Drywell equipment/floor drain sumps	2.9	1	
295022 Loss of CRD Pumps / 1		X					AK2.07 Reactor Pressure (SCRAM assist)	3.4	1	
295029 High Suppression Pool Wtr Lvl / 5										
295032 High Secondary Containment Area Temperature / 5			X				EK3.03 Isolating affected systems	3.8	1	
295033 High Secondary Containment Area Radiation Levels / 9										
295034 Secondary Containment Ventilation High Radiation / 9										
295035 Secondary Containment High Differential Pressure / 5										
295036 Secondary Containment High Sump/Area Water Level / 5										
500000 High CTMT Hydrogen Conc. / 5										
K/A Category Point Totals:	1	2	1	1	1	1	Group Point Total:		7	

ES-401		BWR 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								X				A2.01 Inadequate net positive suction head	3.2	1
205000 Shutdown Cooling										X		A4.11 Heat exchanger cooling flow	3.2	1
206000 HPCI											X	2.2.36 Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations	3.1	1
207000 Isolation (Emergency) Condenser												N/A MNGP		
209001 LPCS	X						X					K1.10 Emergency generator A1.08 System Lineup	3.7 3.3	2
209002 HPCS												N/A MNGP		
211000 SLC		X										K2.02 Explosive valves	3.1	1
212000 RPS			X									K3.01 Process radiation monitoring	3.0	1
215003 IRM				X								K4.05 Changing detector position	2.9	1
215004 Source Range Monitor					X							K5.01 Detector operation	2.6	1
215005 APRM / LPRM						X						K6.01 RPS	3.7	1
217000 RCIC							X			X		A1.06 Condensate storage level A4.03 System valves	3.2 3.4	2
218000 ADS								X				A2.06 ADS initiation signals present	4.2	1
223002 PCIS/Nuclear Steam Supply Shutoff			X						X			K4.04 Automatic bypassing of selected isolations during specified plant conditions A3.01 System indicating lights and alarms	3.2 3.4	2
239002 SRVs	X									X		K1.07 Suppression Pool A4.06 Reactor water level	3.6 3.9	2
259002 Reactor Water Level Control											X	2.4.4 Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures	4.5	1
261000 SGTS	X											K1.01 Reactor building ventilation system	3.4	1
262001 AC Electrical Distribution		X										K2.01 Off-site sources of power	3.3	1
262002 UPS (AC/DC)			X			X						K3.11 MSIV K6.03 Static inverter	2.8 2.7	2
263000 DC Electrical Distribution				X								K4.02 Breaker interlocks, permissives, bypasses and crossies	3.1	1
264000 EDGs					X							K5.05 Paralleling A.C. power sources	3.4	1
300000 Instrument Air						X						K6.04 Service air refusal valve	2.6	1
400000 Component Cooling Water							X					A1.04 Surge tank level	2.8	1
K/A Category Point Totals:	3	2	2	3	2	3	3	2	1	3	2	Group Point Total:	26	

ES-401	BWR Examination Outline Plant Systems - Tier 2/Group 2 (RO / SRO)											Form ES-401-1		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
201001 CRD Hydraulic														
201002 RMCS								X				A2.03 Select block	2.9	1
201003 Control Rod and Drive Mechanism														
201004 RSCS												N/A MNGP		
201005 RCIS												N/A MNGP		
201006 RWM									X			A3.01 System window and light indications	3.2	1
202001 Recirculation														
202002 Recirculation Flow Control														
204000 RWCU										X		A4.03 RWCU drain flow regulator	3.2	1
214000 RPIS														
215001 Traversing In-core Probe														
215002 RBM											X	2.4.46 Ability to verify that the alarms are consistent with plant conditions	4.2	1
216000 Nuclear Boiler Inst.	X											K1.12 Reactor water level control system	3.6	1
219000 RHR/LPCI: Torus/Pool Cooling Mode														
223001 Primary CTMT and Aux.		X										K2.09 Drywell cooling fans	2.7	1
226001 RHR/LPCI: CTMT Spray Mode														
230000 RHR/LPCI: Torus/Pool Spray Mode				X								K4.03 Unintentional reduction in vessel injection flow during accident conditions	3.5	1
233000 Fuel Pool Cooling/Cleanup			X									K3.02 Fuel pool water level	3.1	1
234000 Fuel Handling Equipment														
239001 Main and Reheat Steam														
239003 MSIV Leakage Control														
241000 Reactor/Turbine Pressure Regulator				X								K4.07 Generator runback	3.2	1
245000 Main Turbine Gen. / Aux.														
256000 Reactor Condensate														
259001 Reactor Feedwater														
268000 Radwaste														
271000 Offgas														
272000 Radiation Monitoring					X							K5.01 Hydrogen injection operation's effect on process radiation indications	3.2	1
286000 Fire Protection														
288000 Plant Ventilation														
290001 Secondary CTMT						X						K6.01 Reactor building ventilation	3.5	1
290003 Control Room HVAC							X					A1.04 Control room pressure	2.5	1
290002 Reactor Vessel Internals														
K/A Category Point Totals:	1	1	1	2	1	Group Point Total:		12						

ES-401	BWR Examination Outline							Form ES-401-1	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4									
295003 Partial or Complete Loss of AC / 6					X		AA2.01 Cause of partial or complete loss of A.C. power	3.7	1
295004 Partial or Total Loss of DC Pwr / 6					X		AA2.02 Extent of partial or complete loss of D.C power	3.9	1
295005 Main Turbine Generator Trip / 3						X	2.2.40 Ability to apply Technical Specifications for a system	4.7	1
295006 SCRAM / 1									
295016 Control Room Abandonment / 7									
295018 Partial or Total Loss of CCW / 8									
295019 Partial or Total Loss of Inst. Air / 8									
295021 Loss of Shutdown Cooling / 4									
295023 Refueling Acc / 8					X		AA2.05 Entry conditions of emergency plan	4.6	1
295024 High Drywell Pressure / 5					X		EA2.01 Drywell pressure	4.4	1
295025 High Reactor Pressure / 3						X	2.4.30 Knowledge of events related to system operation / status that must be reported to internal organization or external agencies, such as the state, NRC, or the transmission system operator.	4.1	1
295026 Suppression Pool High Water Temp. / 5						X	2.1.20 Ability to interpret and execute procedure steps	4.6	1
295027 High Containment Temperature / 5							N/A MNGP		
295028 High Drywell Temperature / 5									
295030 Low Suppression Pool Wtr Lvl / 5									
295031 Reactor Low Water Level / 2									
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1									
295038 High Off-site Release Rate / 9									
600000 Plant Fire On Site / 8									
700000 Generator Voltage and Electric Grid Disturbances / 6									
K/A Category Totals:					4	3	Group Point Total:		7

ES-401	BWR Examination Outline													Form ES-401-1	
	Plant Systems - Tier 2/Group 1 (RO / SRO)														
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)		IR	#
203000 RHR/LPCI: Injection Mode															
205000 Shutdown Cooling								X					A2.07 Loss of motor cooling	2.7	1
206000 HPCI															
207000 Isolation (Emergency) Condenser													N/A MNGP		
209001 LPCS															
209002 HPCS													N/A MNGP		
211000 SLC															
212000 RPS											X		2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation	4.7	1
215003 IRM															
215004 Source Range Monitor															
215005 APRM / LPRM															
217000 RCIC											X		2.2.36 Ability to determine the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations.	4.2	1
218000 ADS								X					A2.01 Small steam line break LOCA	4.3	1
223002 PCIS/Nuclear Steam Supply Shutoff															
239002 SRVs															
259002 Reactor Water Level Control															
261000 SGTS															
262001 AC Electrical Distribution									X				A2.03 Loss of Off-site power	4.3	1
262002 UPS (AC/DC)															
263000 DC Electrical Distribution															
264000 EDGs															
300000 Instrument Air															
400000 Component Cooling Water															
K/A Category Point Totals:								3			2	Group Point Total:			5

ES-401	BWR 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														
201002 RMCS														
201003 Control Rod and Drive Mechanism														
201004 RSCS												N/A MNGP		
201005 RCIS												N/A MNGP		
201006 RWM														
202001 Recirculation														
202002 Recirculation Flow Control								X				A2.02 Loss of A.C.	3.0	1
204000 RWCU														
214000 RPIS														
215001 Traversing In-core Probe														
215002 RBM														
216000 Nuclear Boiler Inst.														
219000 RHR/LPCI: Torus/Pool Cooling Mode														
223001 Primary CTMT and Aux.														
226001 RHR/LPCI: CTMT Spray Mode														
230000 RHR/LPCI: Torus/Pool Spray Mode														
233000 Fuel Pool Cooling/Cleanup														
234000 Fuel Handling Equipment														
239001 Main and Reheat Steam								X				A2.01 Malfunction of reactor turbine pressure regulating system	3.9	1
239003 MSIV Leakage Control														
241000 Reactor/Turbine Pressure Regulator														
245000 Main Turbine Gen. / Aux.														
256000 Reactor Condensate														
259001 Reactor Feedwater														
268000 Radwaste														
271000 Offgas														
272000 Radiation Monitoring														
286000 Fire Protection														
288000 Plant Ventilation														
290001 Secondary CTMT											X	2.4.6 Knowledge of EOP mitigation strategies	4.7	1
290003 Control Room HVAC														
290002 Reactor Vessel Internals														
K/A Category Point Totals:								2			1	Group Point Total:		3

Facility: Monticello		Date of Exam: 2-23-09				
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.3	Knowledge of shift or short-term relief turnover practices	3.7	1		
	2.1.7	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1		
	2.1.17	Ability to make accurate, clear and concise verbal reports	3.9	1		
	Subtotal			3		
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.	4.5	1		
	2.2.25	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits	3.2	1		
	2.2.44	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.	4.2	1		
	Subtotal			3		
3. Radiation Control	2.3.7	Ability to comply with radiation work permits during normal or abnormal conditions	3.5	1		
	2.3.12	Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	3.2	1		
	Subtotal			2		
4. Emergency Procedures / Plan	2.4.12	Knowledge of general operating crew responsibilities during emergency operations	4.0	1		
	2.4.31	Knowledge of annunciator alarms, indications, or response procedures.	4.2	1		
	Subtotal			2		
Tier 3 Point Total				10		

Facility: Monticello (SRO)		Date of Exam: 2-23-09				
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements			4.2	1
	2.1.2	Knowledge of operator responsibilities during all modes of plant operations			4.4	1
	Subtotal					2
2. Equipment Control	2.2.41	Ability to obtain and interpret station electrical and mechanical drawings			3.9	1
	2.2.42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.			4.6	1
	Subtotal					2
3. Radiation Control	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.			3.1	1
	Subtotal					1
4. Emergency Procedures / Plan	2.4.2	Knowledge of system set-points, interlocks and automatic actions associated with EOP entry conditions.			4.6	1
	2.4.18	Knowledge of the specific bases for EOPs			4.0	1
	Subtotal					2
Tier 3 Point Total						7

Facility: <u>Monticello</u>		Scenario No.: <u>ILT-SS-04E (NRC 1)</u>		Op-Test No.: <u>MNGP 09</u>	
Examiners: _____		Operators: _____		_____	
_____		_____		_____	
<u>Initial Conditions:</u>					
Normal plant startup in progress at approximately 38% power. No Limiting conditions for Operation in effect.					
<u>Turnover:</u>					
Ready to place the "B" Feedwater Regulating valve in service.					
Continue raising reactor power with Recirc.					
Event No.	Malf. No.	Event Type*	Event Description		
1	None	N (BOP)	Place the "B" Feedwater Regulating valve in service.		
2	None	R (ATC/SRO)	Raise reactor power with Recirc from 38% to 50%.		
3	RR09C	I (ATC/SRO)	Recirc Speed Controller failure. Operator will lock the scoop tube. The CRS will address Tech Specs for Recirc speed mismatch.		
4	RC02	I (BOP/SRO)	RCIC Auto Initiation (Inadvertent). The BOP will secure RCIC. The CRS will determine Tech Specs for inoperable RCIC. (ABNORMAL)		
5	EG02A&B	C (BOP/SRO)	Complete loss of Stator Water cooling flow. BOP actions to start a SWC pump will be unsuccessful. The crew will manually scram the reactor. (ABNORMAL)		
6	CH16 CH19 TC02 TC06A&B EG03	M (Crew)	Scram with Hydraulic ATWS The crew will perform C.5-1100 for RPV control. The crew will perform C.5-2007 for a failure to scram. The Power/Level Control contingency will be necessary. The scenario ends when Hot Shutdown Boron weight has been injected and the crew begins restoring RPV level.		
7	SL01A&B	C (ATC)	The 1st SBLC Pump fails to start. The OATC will successfully start the 2 nd SBLC Pump		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					
ES-301-4 & 5 Quantitative attributes:					
Total Malfunctions: 5 Malfunctions					
Malfunction(s) after EOP: E7					
Abnormal Events: E3, E4 & E5					
EOPs: 1100					
EOP Contingencies: Power/Level Control (2007)					
Critical Tasks: Inhibit ADS, Initiate SBLC, Power/Level Control					
Tech Spec: E3 & E4					
SRO-I ATC I/C: E3 & E7					
Note: CRS does not get shared credit for (N)ormal event					

Facility: Monticello Scenario No.: ILT-SS-05E (NRC 2) Op-Test No.: MNGP 09

Examiners: _____ Operators: _____

Initial Conditions:

Normal plant startup in progress at approximately 54% power. No Limiting conditions for Operation in effect.

Turnover:

Waiting for Nuclear Engineers to double check rod sequence calculations; then continue raising reactor power with Rods. While waiting, perform Core Spray Quarterly

Event No.	Malf. No.	Event Type*	Event Description
1	CS01A	N (BOP/SRO)	Perform Core Spray Quarterly. Pump motor breaker trips on Lockout.
2	RW01 C-05-A35	I (ATC/SRO)	The RWM fails inoperable. The CRS refers to Tech Spec 3.3.B.3(b) and determines that the RWM can be bypassed.
3	C-06-A02	C (BOP/SRO)	Reactor Feed Pump high vibration. The BOP will address this problem and eventually trip the RFP. (ABNORMAL)
4	None	R (ATC/SRO)	Lower reactor power with Rods from 54% to 50% with control rods in preparation for securing the RFP.
5	CH07B	C (ATC)	CRD Flow Control valve fails closed. ATC will swap to alternate Flow Control Valve.
6	AP07	I (BOP/SRO)	Inadvertent ADS Initiation The BOP will address this problem. The CRS will address Tech Specs for 3.3.5. (ABNORMAL)
7	ED05A RR01B	M (Crew)	Bus 11 Lockout, reactor scram, LOCA. All rods fully insert and the Primary containment responds as designed, but HPCI fails and RCIC cannot keep up with the inventory loss. Alternate Level Control contingency is performed. Emergency Depressurization is finally necessary to allow low pressure systems to inject. EOPs C.5 1100 and 1200 are performed.
8	HP04B HP03	C (BOP or ATC)	HPCI Fails to inject. The BOP/ATC will take manual control but HPCI Turbine eventually trips.

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

ES-301-4 & 5 Quantitative attributes:

Total Malfunctions: 7 Malfunctions
 Malfunction(s) after EOP: E8
 Abnormal Events: E3 & E6
 EOPs: 1100 & 1200
 EOP Contingencies: ALC & ED
 Critical Tasks: ED, Restore RPV Level
 Tech Specs: E2 & E6
 SRO-I ATC I/C: E2 & E5

Facility: <u>Monticello</u>		Scenario No.: <u>ILT-SS-06E (NRC 3)</u>		Op-Test No.: <u>MNGP 09</u>	
Examiners: _____		Operators: _____		_____	
_____		_____		_____	
_____		_____		_____	
<u>Initial Conditions:</u>					
At 100% power with Transformer 1AR out of service to investigate a hot spot.					
No Limiting conditions for Operation in effect.					
<u>Turnover:</u>					
Shift to standby RBCCW pump					
Event No.	Malf. No.	Event Type*	Event Description		
1	None	N (BOP)	Transfer to standby RBCCW pump		
2	CH06_052	I (ATC/SRO)	Rod Drift Scram outlet valve failure The ATC will address this problem. The CRS will address Tech Specs for T.S. 3.1.3 Condition C		
3	AP01E	I (BOP/SRO)	An SRV opens. The BOP will address this problem (logic). The SRV will close (ABNORMAL)		
4	None	R (ATC/SRO)	Rapid power Reduction is performed for the leaking SRV.		
5	C-08-B01	C (BOP/SRO)	An oil leak on Transformer 2R requires emergency transfer to 1R. The CRS will address Tech Specs for offsite sources (ABNORMAL)		
6	ED05F	C (ATC/SRO)	Bus 16 Lockout, #11 CRD Pump will not start, manual reactor scram and performance of EOPs C.5 1100		
7	MS04B	M (Crew)	All rods fully insert but a steam leak inside the Drywell develops. Emergency Depressurization becomes necessary due to elevated Drywell temperatures. EOP C.5-1200 is performed.		
8	(Override) 01-S030-02	I (Crew)	B RHR cannot be initiated in DW Spray mode. This results in use of the Emergency Depressurization Contingency.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					
<u>ES-301-4 & 5 Quantitative attributes:</u>					
Total Malfunctions: 6 Malfunctions					
Malfunction(s) after EOP: E8					
Abnormal Events: E3 & E5					
EOPs: 1200					
EOP Contingencies: Emergency Depressurization					
Critical Tasks: Manual Scram for Loss of CRD (200.167); Blowdown on DW Temp (314.101)					
Tech Spec: E2 & E5					
SRO-I ATC I/C: N/A					

Facility: <u>Monticello</u> Scenario No.: <u>ILT-SS-07E (NRC 4/SPARE)</u> Op-Test No.: <u>MNGP 09</u>			
Examiners: _____		Operators: _____	
_____		_____	
_____		_____	
<u>Initial Conditions:</u>			
At 100% power.			
B RPS MG secured.			
<u>Turnover:</u>			
Perform Reactor Bldg. to Torus Vacuum Breaker test.			
Event No.	Malf. No.	Event Type*	Event Description
1	(Override) S74-02 DS162-02	N (BOP/SRO)	Perform Reactor Bldg. to Torus Vacuum Breaker Test. Valve fails to close which requires the CRS to address Tech Specs
2	NI13D	I (ATC/SRO)	APRM #4 fails Upscale The ATC will address this problem. The CRS will address Tech Specs for RPS instruments
3	MC04B MC03	C (BOP/SRO)	Loss of Steam Supply to an SJAE. BOP and CRS will Respond (ABNORMAL)
4	None	R (ATC/SRO)	Rapid power Reduction is performed for the loss of Main Condenser vacuum.
5	SW01A	C (BOP/SRO)	The running RBCCW pump trips and the auto-start of the standby pump fails. (ABNORMAL)
6	ED06A CH22A&B	M (Crew)	Loss LC 101 with B RPS MG secured. The Scram will not reset and the Discharge Volume cannot be isolated. EOP 1300 is performed. Crew will anticipate Emergency Depressurization, which becomes necessary due to elevated Reactor Bldg. Radiation levels.
7	CH02_119	C ATC	1 Rod stuck out after scram
8	AO08C&D	C BOP	2 of 3 ADS valves fail to open.
<p>* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor</p> <p><u>ES-301-4 Quantitative attributes:</u> Total Malfunctions: 7 Malfunctions Malfunction(s) after EOP: E7 & E8 Abnormal Events: E3, E5, & E6 EOPs: 1300 EOP Contingencies: Emergency Depressurization Critical Tasks: ED, Use alternate ADS valves Tech Spec: E1 & E2 SRO-I ATC I/C: NA</p>			