

OUTLINE SUBMITTAL

FOR THE MONTICELLO INITIAL EXAMINATION - MAY 2005

Monticello Outline Submittal

Contains the following:

Station Cover Letter transmitting the outline

ES-201-2 Examination Outline Quality Checklist
ES-301-1 Administrative Topics Outline (RO) (SRO)
ES-301-2 Control Room and Facility Walk-Through Test Outline (RO) (SRO-I) (SRO-U)
ES-301-5 Transient and Event Checklist
ES-401-1 BWR RO/SRO Examination Outline
ES-401-3 Generic Knowledge and Abilities Outline
D-1 Dynamic Simulator Scenario Outline for 4 scenarios
NRC comments on the Outline Submittal (there were no comments on the submittal)



January 13, 2005

L-MT-05-004
10 CFR Part 55.40

Regional Administrator, Region III
US Nuclear Regulatory Commission
801 Warrenville Road
Lisle, Illinois 60532-4351
Attention: Dell McNeil

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

Examination Outlines For The Initial Licensing Examination To Be Conducted The Week of May 2, 2005 and May 9, 2005

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

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, 10CFR55.40(a) requires that examinations meet the requirements of Reference 1. Therefore, enclosed for your review are the proposed examination outlines for the initial license examinations for our operator license applicants.

In accordance with 10CFR 55.49, "Integrity of Examinations and Tests" and Reference 1, Section ES-201, Attachment 1, "Examination Security and Integrity Guidelines," the Nuclear Management Company, LLC requests that the enclosed materials be withheld from public disclosure until after the examinations are complete, and further that the enclosed materials only be viewed by the NRC examiner, Mr. Dell McNeil.

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 NMC, of examinations for seven (7) Reactor Operator (RO) license candidates, one (1) Senior Reactor Operator (SRO) – Upgrade license candidate and five (5) SRO - Instant license candidates.

Reference 1 permits licensees to screen the entire Knowledge and Abilities (K/A) catalog to eliminate inapplicable K/A statements. A listing of the K/A statements that were suppressed from selection for outline generation is provided in the enclosed report entitled, "Monticello Suppressed K/A Report."

JAN 24 2005

Enclosed are the following specific items for your review.

ES-201-2, Examination Outline Quality Checklist
ES-201-3, Examination Security Agreement
ES-301-1, Administrative Topics Outline
(1 copy for the RO examination and 1 copy for the SRO examination)
ES-301-2, Control Room/In-Plant Systems Outline (1 copy for the RO
examination, 1 copy for the SRO-Instant examination and 1 copy for
the SRO-Upgrade examination)
ES-301-5, Transient and Event Checklist
ES-D-1, Scenario Outline (1 for each scenario for 4 total)
ES-401-1, BWR Examination Outline
ES-401-3, General Knowledge and Abilities Outline (Tier 3)
ES-401-4, Record of Rejected K/As
Monticello Suppressed K/A Report

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



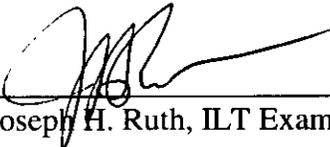
Thomas J. Palmisano
Site Vice President, Monticello Nuclear Generating Plant
Nuclear Management Company, LLC

Enclosures

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

Per the requirement of NUREG 1021, OPERATOR LICENSING EXAMINATION STANDARDS FOR POWER REACTORS, Revision 9, Section ES-401.D.1.b, I hereby state that the method for developing the written examination outline was that as described in Attachment 1 of that section of the NUREG.

Per the requirement of NUREG 1021, OPERATOR LICENSING EXAMINATION STANDARDS FOR POWER REACTORS, Revision 9, Section ES-401.C.1.f, I hereby state that as part of the examination submittal that there is no question duplication between the facility licensee's audit and the NRCs written examinations.



Joseph H. Ruth, ILT Exam Project Manager

1/5/05
Date

Facility: MNGP		Date of Examination: 5/2/05		
Item	Task Description	Initials		
		a	b*	c#
W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	J	Km	Jm
	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.	J	Km	Jm
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	J	Km	Jm
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	J	Km	Jm
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.	J	Km	Jm
	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.	J	Km	Jm
	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.	J	Km	Jm
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.	J	Km	Jm
	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	J	Km	Jm
	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.	J	Km	Jm
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.	J	Km	Jm
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	J	Km	Jm
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	J	Km	Jm
	d. Check for duplication and overlap among exam sections.	J	Km	Jm
	e. Check the entire exam for balance of coverage.	J	Km	Jm
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	J	Km	Jm
a. Author	<u>Joe Ruth</u>	Printed Name/Signature		Date
b. Facility Reviewer (*)	<u>Kurt Markling</u>	Kurt Markling		1/5/05
c. NRC Chief Examiner (#)	<u>Debbie McNeil</u>	Debbie McNeil		1/10/05
d. NRC Supervisor	<u>1/3 Linksby</u>	1/3 Linksby		1/31/05
Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.				

to be reverified prior to examination administration

Facility: Monticello Nuclear Generating Plant Date of Examination: 5/2/05
 Exam Level (circle one): RO / SRO Operating Test Number: W90115

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N	Overtime Restrictions JPM-4 AWI.08.10.01-001 2.1.1 3.8/3.7
Conduct of Operations	N	Independent Verification JPM-4 AWI.04.04.02-003 2.1.29 3.4/3.3
Equipment Control	N	Rod Block Monitor Functional Test JPM-0045-001 2.2.12 3.0/3.4
Radiation Control	N	High Radiation Area Entry JPM 4 AWI-08.04.06 2.3.10 3.3/2.9
Emergency Plan		Not Selected

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 (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) (S)imulator
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Facility: Monticello Nuclear Generating PlantDate of Examination: 5/2/05Exam Level (circle one): RO / SROOperating Test Number: W90115

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	D	Bypass Configuration Verification of Electrical Circuits JPM-4 AWI.04.04.03-002 2.2.11 2.5/3.4
Conduct of Operations	N	Determine Current Procedure Revision JPM-4 AWI.02.01.02-001 2.1.21 3.2/3.1
Equipment Control	N	Rod Block Monitor Functional Test JPM-0045-001 2.2.12 3.0/3.4
Radiation Control	N	High Radiation Area Entry JPM 4 AWI-08.04.06 2.3.10 3.3/2.9
Emergency Plan	D	Off-Site Protective Action Recommendations JPM-A.2-204-003 SS304.121 2.4.44 4.0/2.1

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

*Type Codes & Criteria:

(C)ontrol room
 (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)
 (S)imulator

Facility: <u>Monticello Nuclear Generating Station</u>		Date of Examination: <u>May 3 - 12, 2005</u>	
Exam Level: RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>		Operating Test No.: <u>W90115</u>	
Control Room Systems [®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)			
System / JPM Title	Type Code*	Safety Function	
a. Control Rod Drive Exercise	A, N, S	1	
b. HPCI Manual Initiation	A, D, S	2	
c. Alternate RPV Depressurization with Turbine Bypass Valves	N, S	3	
d. Shutdown of One Recirc Pump with the Reactor at Power	D, S	4	
e. H ₂ O ₂ Analyzer Operation C.5-3501	N, S	5	
f. Manually Start No. 11 EDG (Control Room Actions)	P, D, S	6	
g. Verify RWM Operability	P, D, S, L	7	
h. Swapping Off-Gas Storage Tanks	A, D, S	9	
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. Vent the HCUs	R, D, E	1	
j. Take Local Manual Control of Feedwater Reg Valves	P, D, R	2	
k. Respond to a Failure of Diesel Fire Pump to Manually Start	A, M	8	
@ All control room (and in-plant) systems must be different and 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		
(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: <u>Monticello Nuclear Generating Station</u>		Date of Examination: <u>May 3 - 12, 2005</u>
Exam Level: RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>		Operating Test No.: <u>W90115</u>
Control Room Systems® (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Control Rod Drive Exercise	A, N, S	1
b. HPCI Manual Initiation	A, D, S	2
c. Alternate RPV Depressurization with Turbine Bypass Valves	N, S	3
d. Shutdown of One Recirc Pump with the Reactor at Power	D, S	4
e. H ₂ O ₂ Analyzer Operation C.5-3501	N, S	5
f. n/a		
g. Verify RWM Operability	P, D, S, L	7
h. Swapping Off-Gas Storage Tanks	A, D, S	9
In-Plant Systems® (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Vent the HCUs	R, D, E	1
j. Take Local Manual Control of Feedwater Reg Valves	P, D, R	2
k. Respond to a Failure of Diesel Fire Pump to Manually Start	A, M	8
@ All control room (and in-plant) systems must be different and 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	
(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: <u>Monticello Nuclear Generating Station</u>	Date of Examination: <u>May 3 - 12, 2005</u>
Exam Level: RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>	Operating Test No.: <u>W90115</u>

Control Room Systems [®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Control Rod Drive Exercise	A, N, S	1
b. HPCI Manual Initiation	A, D, S	2
c. n/a		
d. n/a		
e. n/a		
f. n/a		
g. Verify RWM Operability	P, D, S, L	7
h.		

In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Reset RCIC Overspeed Trip	D, E, N	4
j. n/a		
k. Respond to a Failure of Diesel Fire Pump to Manually Start	A, M	8

@ All control room (and in-plant) systems must be different and 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
(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: MNGP

Date of Examination: 5/02/05

Operating Test No.:W90115

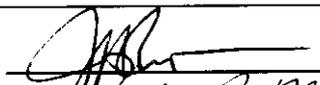
APPLICANT	Event Type	Scenarios												TOTAL	Minimum
		1			2			3			4				
		CREW POSITION			CREW POSITION			CREW POSITION			CREW POSITION				
		SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP	SRO	ATC	BOP		
RO	RX		2			4			5			2		4	1*
SRO-I	NOR											1		1	1*
SRO-U	IC		2/2			2/3/6			1/3			2/3		9	4
	MAJ		4/5			5			6			6		5	2
	TS													0	2
RO	RX													0	1*
SRO-I	NOR			1			1			2				4	1*
SRO-U	IC			3/6		1/3/4			2/5/6			4/5/7		11	4
	MAJ			4/5		5			6			6		5	2
	TS													0	2
RO	RX	2			3			5			2			4	1*
SRO-I	NOR	1			1			2			1			4	1*
SRO-U	IC	2/2/3/6			1/2/3/4/6			1/2/3/5/6			2/3/4/5/7			19	4
	MAJ	4/5			5			6			6			5	2
	TS	2/3			1/3			2/4			3/5			8	2
RO	RX	2			3			5			2			4	1*
SRO-I	NOR	1			1			2			1			4	1*
SRO-U	IC	2/2/3/6			1/2/3/4/6			1/2/3/5/6			2/3/4/5/7			19	4
	MAJ	4/5			5			6			6			5	2
	TS	2/3			1/3			2/4			3/5			8	2

Instructions:

1. Circle 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 do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in 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 requirement.

Author:

NRC Reviewer:


 J. R. McNeil

Facility: MNGP		Date of Exam: 05/02/2005																
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	A 2	G *	Total		
1. Emergency & Abnormal Plant Evolutions	1	2	2	5	N/A			3	5	N/A			3	20	6	1	7	
	2	0	3	1	N/A			1	2	N/A			0	7	2	1	3	
	Tier Totals	2	5	6	N/A			4	7	N/A			3	27	8	2	10	
2. Plant Systems	1	2	3	3	4	2	2	2	2	2	2	2	2	26	3	2	5	
	2	1	0	2	1	2	1	1	1	1	1	1	1	12	2	1	3	
	Tier Totals	3	3	5	5	4	3	3	3	3	3	3	3	38	5	3	8	
3. Generic Knowledge and Abilities Categories					1	2	3	4					10	1	2	3	4	7
					2	2	2	4						2	1	2	2	

- Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ±1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
- 7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

ES-401		BWR Examination Outline 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	K/A Topic(s)	IR	#													
203000 RHR/LPCI: Injection Mode									X		A3.08, System Initiation Sequence	4.1	1													
205000 Shutdown Cooling									X		A3.01, Valve Operation	3.2	1													
206000 HPCI				X							K4.13, Turbine and Pump Lubrication	3.0	1													
207000 Isolation (Emergency) Condenser											N/A MNGP	N/A	N/A													
209001 LPCS			X							X	K3.02, ADS Logic A4.01, Core Spray Pump	3.8 3.8	2													
209002 HPCS											N/A MNGP	N/A	N/A													
211000 SLC				X							K4.01, Zero Leakage to the Reactor (Squib Valves)	3.1	1													
212000 RPS						X					K6.02, Nuclear Instrumentation	3.7	1													
215003 IRM			X					X			K3.04, Reactor Power Indication A2.02, IRM Inop Condition	3.6 3.5	2													
215004 Source Range Monitor		X									K2.01, SRM Channels/Detectors	2.6	1													
215005 APRM / LPRM							X				A1.07, APRM (Gain Adjustment Factor)	3.0	1													
217000 RCIC	X										K1.07, Leak Detection 2.4.2, Knowledge of System Setpoints/Interlocks and Automatic Actions Associated with EOP Entry Conditions	3.1 3.9	2													
218000 ADS		X									K2.01, ADS Logic	3.1	1													
223002 PCIS/Nuclear Steam Supply Shutoff								X			A2.11, Standby Liquid Initiation	3.8	1													
239002 SRVs				X							K4.02, Minimizes Containment Fatigue Duty Cycles Resulting from Relief Valve Cycling During Decay Heat Dominant Period Late in an Isolation Transient	3.4	1													
259002 Reactor Water Level Control			X	X							K4.09, Single Element Control K3.01, Reactor Water Level	3.1 3.8	2													
261000 SGTS										X	A4.07, System Flow	3.1	1													
262001 AC Electrical Distribution					X						K5.01, Principle Involved with Paralleling Two AC Sources 2.4.31, Knowledge of Annunciators Alarms and Indications/and Use of the Response Instructions	3.1 3.3	2													
262002 UPS (AC/DC)	X										K1.18, Process Radiation Monitoring System	2.5	1													
263000 DC Electrical Distribution		X									K2.01, Major DC Loads	3.1	1													
264000 EDGs						X					K6.01, Starting Air	3.8	1													
300000 Instrument Air					X						K5.01, Air Compressors	2.5	1													
400000 Component Cooling Water							X				A1.03, CCW Pressure	2.7	1													
K/A Category Point Totals:													2	3	3	4	2	2	2	2	2	2	2	2	Group Point Total	26/5

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 3	A 4	A 5	K/A Topic(s)	IR	#
201001 CRD Hydraulic											A2.12, High Cooling Water Flow	2.8	1
201002 RMCS									X		A4.02, Emergency in/notch Override Switch	3.5	1
201003 Control Rod and Drive Mechanism						X					K6.02, Reactor Pressure	3.0	1
201004 RSCS													
201005 RCIS													
201006 RWM													
202001 Recirculation													
202002 Recirculation Flow Control													
204000 RWCU													
214000 RPIS	X										K1.04, RMCS	3.2	1
215001 Traversing In-core Probe													
215002 RBM													
216000 Nuclear Boiler Inst.								X			A3.01, Relationship Between Meter/Recorder Readings and Actual Parameter Values	3.4	1
219000 RHR/LPCI: Torus/Pool Cooling Mode			X								K3.01, Suppression Pool Temperature Control	3.9	1
223001 Primary CTMT and Aux.													
226001 RHR/LPCI: CTMT Spray Mode													
230000 RHR/LPCI: Torus/Pool Spray Mode					X						K5.07, Vacuum Breaker Operation	2.9	1
233000 Fuel Pool Cooling/Cleanup					X						K5.06, Maximum Normal Heat Load	2.5	1
234000 Fuel Handling Equipment													
239001 Main and Reheat Steam													
239003 MSIV Leakage Control													
241000 Reactor/Turbine Pressure Regulator													
245000 Main Turbine Gen. / Aux.										X	2.4.50, Ability to Verify System Alarm Setpoints and Operate Controls Identified in the Alarm Response Manual	3.3	1
256000 Reactor Condensate													
259001 Reactor Feedwater							X				A1.03, RFP Motor Amps	2.8	1
268000 Radwaste													
271000 Offgas													
272000 Radiation Monitoring													
286000 Fire Protection													
288000 Plant Ventilation													
290001 Secondary CTMT													
290003 Control Room HVAC			X								K3.04, Control Room Pressure	2.8	1
290002 Reactor Vessel Internals				X							K4.04, Moisture Removal from Generated Steam	2.8	1
K/A Category Point Totals:	1	0	2	1	2	1	1	1	1		Group Point Total		12/3

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	K/A Topic(s)	IR	#
201001 CRD Hydraulic								X			A2.10, Low HCU Accumulator Pressure/High Level	3.6	1
201002 RMCS													
201003 Control Rod and Drive Mechanism													
201004 RSCS													
201005 RCIS													
201006 RWM													
202001 Recirculation													
202002 Recirculation Flow Control													
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													
239003 MSIV Leakage Control													
241000 Reactor/Turbine Pressure Regulator													
245000 Main Turbine Gen. / Aux.									X		2.2.11, Knowledge of the Process for Controlling Temporary Changes	3.4	1
256000 Reactor Condensate													
259001 Reactor Feedwater													
268000 Radwaste													
271000 Offgas													
272000 Radiation Monitoring													
286000 Fire Protection													
288000 Plant Ventilation													
290001 Secondary CTMT													
290003 Control Room HVAC													
290002 Reactor Vessel Internals								X			A2.05, Exceeding Thermal Limits	4.2	1
K/A Category Point Totals:	0	0	0	0	0	0	0	2	0	0	Group Point Total		12/3

Facility: MNGP		Date of Exam: 05/02/2005				
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.	2.1.12, Ability to Apply Technical Specifications for a System	2.9	1		
	2.1.	2.1.28, Knowledge of the Purpose and Function of Major System Components and Controls	3.2	1		
	2.1.	2.1.20, Ability to Execute Procedure Steps			4.2	1
	2.1.	2.1.23, Ability to Perform Specific System and Integrated Plant Procedures During Different Modes of Plant Operation			4.0	1
	2.1.					
	2.1.					
	Subtotal			2		2
2. Equipment Control	2.2.	2.2.13, Knowledge of Tagging and Clearance Procedures	3.6	1		
	2.2.	2.2.27, Knowledge of the Refueling Process	2.6	1		
	2.2.	2.2.24, Ability to Analyze the Affect of Maintenance Activities on LCO Status			3.8	1
	2.2.					
	2.2.					
	2.2.					
	Subtotal			2		1
3. Radiation Control	2.3.	2.3.10, Ability to Perform Procedures to Reduce Excessive Levels of Radiation and Guard Against Personnel Exposure	2.9	1		
	2.3.	2.3.11, Ability to Control Radiation Releases	2.7	1		
	2.3.	2.3.2, Knowledge of Facility ALARA Program			2.9	1
	2.3.	2.3.9, Knowledge of the Process for Performing a Containment Purge			3.4	1
	2.3.					
	2.3.					
	Subtotal			2		2
4. Emergency Procedures / Plan	2.4.	2.4.9, Knowledge of Low Power/Shutdown Implications in Accident (e.g. LOCA or Loss of RHR) Mitigation Strategies	3.3	1		
	2.4.	2.4.21, Knowledge of the Parameters and Logic Used to Assess the Status of Safety Functions Including (Reactivity Control, Core Cooling and Heat Removal, Reactor Coolant System Integrity, Containment Conditions, Radioactivity Release Control)	3.7	1		
	2.4.	2.4.25, Knowledge of Fire Protection Procedures	2.9	1		
	2.4.	2.4.35, Knowledge of Local Auxiliary Operator Tasks During Emergency Operations including System Geography and System Implications	3.3	1		
	2.4.	2.4.14, Knowledge of General Guidelines for EOP Flowchart Use			3.9	1
	2.4.	2.4.32, Knowledge of Operator Response to Loss of All Annunciators			3.5	1
		Subtotal			4	
Tier 3 Point Total				10		7

Facility: MNGP Scenario No.: 1 Op-Test No.: W90115

Examiners: _____ Operators: _____

Initial Conditions: Approximately 90% reactor power, ready to complete Turbine-Generator test 1040-01 quarterly requirements and return to full power after turbine testing. Normal electrical lineup. RCIC is inoperable due to planned maintenance on the turbine stop valve and is scheduled to be returned to service tomorrow.

Turnover:

Complete Test 1040-01 and raise reactor power to 100%. Load Dispatcher requests a rate of 5 – 7 MWe / minute.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (BOP)	Complete steps 23-25 of test 1040-01. (Turbine Bypass Valve Exercise and Speed Load Changer Exercise portions of Turbine-Generator testing).
2	N/A NI14D CH05	R (RO) I (RO) C (RO) (SRO)	Raise power with recirc pumps. APRM #4 Fails Inop Single Control Rod Scram due to failed RPS fuse and recovery T.S. LCO review for APRM
3	HP01	I (BOP) (SRO)	HPCI inadvertent initiation T.S. LCO entry, shutdown requirement with RCIC inop
4	HP07 HP08	M (ALL)	HPCI steam line break (ramp) Failure of group 4 isolation (HPCI Isolation Valves fail to close on PCIS automatic action) Unable to manually isolate HPCI
5	CH22A	M (ALL)	EOP 1300 entry (Secondary Containment Control) EOP 1100 entry (RPV Control) Scram SDV failure to close (RPV – Secondary containment leak) scram will not reset (cannot isolate SDV)
6	S054-01	C (BOP)	EOP 2002 entry (Emergency RPV Depressurization) 1 ADS SRV fails to manually open (opens 1 non-ADS SRV)

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

Facility: MNGP Scenario No.: 2 Op-Test No.: W90115

Examiners: _____ Operators: _____

Initial Conditions: Approximately 100% reactor power. Normal electrical lineup. HPCI is inoperable due to planned maintenance on the auxiliary oil pump and is scheduled to be returned to service tomorrow. Surveillance test 0143, Drywell – Torus Monthly Vacuum Breaker Check is to be performed.

Turnover:
Perform surveillance test 0143.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A PC07A	N (BOP) C (BOP) (SRO)	Perform test 0143, Drywell – Torus Vacuum Bkr Check “B” drywell – torus vacuum bkr fails to fully close T.S. LCO entry for PCIS
2	RR13A	I (RO)	Recirc Scoop Tube Lockout and Subsequent Reset
3	ED05E	C (BOP) C (RO) (SRO)	4160V AC Essential Bus #15 Lockout Loss of and start #12 CRD pump due to the bus lockout T.S. LCO entries due to loss of power
4	AP01A	C (BOP) R (RO)	‘A’ SRV fails open and is closed by pulling fuses Rapid Power Reduction due to open SRV
5	RR1B	M (ALL)	Leak inside Primary Containment / scram (ATWS)
6	PP04 PP06	I (RO)	EOP 1200 (Primary containment Control) and EOP 2007 (Failure to Scram) entry Rods insert when ATWS (ARI) initiation, exit EOP 2007

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

Facility: MNGP Scenario No.: 3 Op-Test No.: W90115

Examiners: _____ Operators: _____

Initial Conditions: Approximately 100% reactor power. Normal electrical lineup. HPCI is inoperable due to planned maintenance on the aux oil pump and is scheduled to be returned to service tomorrow. Surveillance test 0225-14-IA-1, Reactor Water Cleanup Valve Operability and Position Indication Tests is to be performed.

Turnover:
Perform surveillance test 0225-14-IA-1.

Event No.	Malf. No.	Event Type*	Event Description
1	CH07B	C (RO)	CRD FCV fails closed
2	N/A DS165-02	N (BOP) C (BOP) (SRO)	Perform test 0225-14-IA-1 (shuts down RWCU) MO-2398 closure outside required range T.S. LCO entry due to test failure
3	FW20A	C (RO)	'A' FW REG valve lock up and subsequent reset
4	B54	(SRO)	Loss of power to Alternate S/D panel, T.S. LCO
5	FW15A FW16A	C (BOP) R (RO)	RFP bearing high temp / vibration RFP Remove from service Rapid Power Reduction to 50%
6	TU03D TU03E TC07B TC07D	C (BOP) M (ALL)	Main turbine vibrations with failure to auto trip Turbine Bypass Valves Failure to Open Scram due to turbine vibrations(ATWS)
7	PP04 PP06		ATWS, EOP 1100, 1200, & 2007 entry Level Power control and SBLC injection required

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

Facility: MNGP Scenario No.: 4 Op-Test No.: W90115

Examiners: _____ Operators: _____

Initial Conditions: Approximately 20% reactor power with a startup in progress. Current step in procedure C.1 is VIII.A.3. The initial next task to support the startup is to transfer control to the A main FW REG valve from the Low flow FW REG valve. Normal electrical lineup. HPCI is inoperable due to maintenance on the aux oil pump and is scheduled to be returned to service tomorrow.

Turnover:
Continue reactor startup.

Event No.	Malfunction No.	Event Type*	Event Description
1	N/A	N (RO)	Transfer to A FW REG valve from Low Flow Valve
2	CH02	R (RO) C (RO)	Continue power rise with control rods Withdrawal of CRD with High Drive Pressure
3	PP01A	I (RO) (SRO)	RPS EPA bkr failure Xfer RPS to Alt power supply T.S. LCO for EPA bkr failure
4	SW01A	C (BOP)	Respond to RBCCW pump trip
5	MC01A/B MC02A/B	C (BOP) SRO	High F.W. conductivity, scram, start RCIC, shutdown Condensate & Feedwater, close MSIVs, and shutdown Circ water T.S. LCO due to RPV conductivity
6	RR01B	 M(ALL)	EOP 1100, 1200 entry Feed water block valve fail to open Low flow FRV fail closed Break on recirc line (ramp). Drywell temperature / pressure rise, Place torus and drywell sprays in service
7	RC03	C (BOP)	RCIC flow controller failure in auto, take manual control, subsequent RCIC trip Initiate 2 CRD pump and SBLC injection Emergency RPV Depressurization due to low RPV water level

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

There were no NRC comments on the outline submittal for the Monticello Nuclear Generating Plant exam.