EXAMINATION OUTLINE SUBMITTAL FOR THE

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

INITIAL EXAMINATION - JULY 2007

ENCLOSURE WITHHELD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH NUREG-1021 UNTIL AFTER THE EXAMINATION IS COMPLETE.

NMC
Committed to Nuclear Excellence

Prairie Island Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

APR 2 4 2007

L-PI-07-032
NUREG-1021

Regional Administrator, Region III
U S Nuclear Regulatory Commission
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Prairie Island Nuclear Generating Plant Units 1 and 2
Dockets 50-282 and 50-306
License Nos. DPR-42 and DPR-60

Prairie Island Nuclear Generating Plant (PINGP) Initial Operator Licensing Examination Outlines

In response to your letter dated March 20, 2007, enclosed are the integrated examination outlines for the initial operator licensing examination to be administered at our facility the weeks of July 30 and August 6, 2007. This information is provided in accordance with guideline ES-201 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9.

NUREG-1021 physical security requirements state that the enclosed examination materials shall be withheld from public disclosure until after the examination is complete.

Summary of Commitments

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

Joel P. Sorensen for

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

Enclosure

cc: Michael Bielby, NRC Chief Examiner, with enclosure
Hironori Peterson, without enclosure

ENCLOSURE WITHHELD FROM PUBLIC DISCLOSURE IN ACCORDANCE WITH NUREG-1021 UNTIL AFTER THE EXAMINATION IS COMPLETE.

ENCLOSURE 1

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

Initial Operator Licensing Examination Outlines

Form Number	Title or Description	Number of Pages
ES-201-2	Examination Outline Quality Checklist	1
ES-201-3	Examination Security Agreement	6
ES-301-1	Administrative Topics Outline – RO	1
ES-301-1	Administrative Topics Outline - SRO	1
ES-301-2	Control Room/In-Plant Systems Outline – RO	1
ES-301-2	Control Room/In-Plant Systems Outline – SRO-U	1
ES-301-2	Control Room/In-Plant Systems Outline – SRO-I	1
ES-301-5	Transient and Event Checklists	3
ES-D-1	Scenario Outline	3
ES-401-2	PWR Examination Outline (RO)	7
ES-401-2	PWR Examination Outline (SRO)	5
ES-401-3	Generic Knowledge and Abilities Outline (Tier 3) (RO)	1
ES-401-3	Generic Knowledge and Abilities Outline (Tier 3) (SRO)	1
ES-401-4	Record of Rejected K/As	1
N/A	2007 Initial License Training (ILT) Exam K/A Suppression Report	21
N/A	2007 ILT Exam Random Selection Methodology	1

55 pages to follow

Facility:		Date of Examination:		
Item	Task Description	Initials a	b*	c#
1. WRITTEN	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	WM	AJ	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.	WM	AJ	MGB
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	WM	AJ	MGB
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	WM	AJ	MGB
2. SIMULATOR	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.	WM	AJ	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.	WM	AJ	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.	WM	AJ	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.	WM	AJ	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	WM	AJ	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.	WM	AJ	MGB
4 GENERAL	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	WM	AJ	MGB
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate	WM	AJ	MGB
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	WM	AJ	MGB
	d. Check for duplication and overlap among exam sections.	WM	AJ	MGB
	e. Check the entire exam for balance of coverage.	WM	AJ	MGB
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	WM	AJ	MGB

	Printed Name/Signature	Date
a. Author	WILLIAM D. MARKHAM / [signature]	04/20/07
b. Facility Reviewer (*)	James D. Lash / [signature]	04/23/07
c. NRC Chief Examiner (#)	Michael E. Bielby / [signature]	5/4/07
d. NRC Supervisor	Bruce Palagi / [signature]	7/22/07

Note: # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.

Facility: PRAIRIE ISLAND
Examination Level: RO

Date of Examination: 07/30/07
Operating Test Number:

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	S,D	ADMIN-7S – Take Compensatory Actions for a Fire Detector out of Service (RO) (2.1.20)
Conduct of Operations	R,N	ADMIN-43 – Determine Time To Boiling During Reduced Inventory Operations (2.1.20)
Equipment Control	S,N	ADMIN-40 – Perform a Reactor Coolant System Leakage Investigation (2.2.12)
Radiation Control	N/A	N/A
Emergency Plan	R,D	ADMIN-14 – Determine Impact of Fire Outside the Control Room (2.4.27)

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: PRAIRIE ISLAND
Examination Level: SRO

Date of Examination: 07/30/07
Operating Test Number:

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R,N	ADMIN-43 – Determine Time To Boiling During Reduced Inventory Operations. (2.1.20)
Conduct of Operations	R,N	ADMIN-42, Assess Shift Staffing Levels (2.1.4)
Equipment Control	S,N	ADMIN-40 – Perform a Reactor Coolant System Leakage Investigation (2.2.12)
Radiation Control	R,D,P	ADMIN-37, Authorize Emergency Radiation Exposure (2.3.4)
Emergency Plan	R,N	ADMIN-41, Emergency Classification of a Security Event (2.4.41)

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: PRAIRIE ISLAND
Exam Level: RO

Date of Examination: 07/30/07
Operating Test No.:

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. CVCS / VC-22SF-1, Place Alternate Letdown in Service	A,D,L,S	1
b. RCS / RC-19S, Perform RCS Leakage Determination Using Board Indications.	D,S	2
c. ECCS / SI-13S, Inadvertent Train B Safety Injection Actuation While Shutdown	D,P,L,S	3
d. AFW/Condensate, CD-1S, Align Cooling Water to the AFW Pump Suction	D,L,S	4b
e. ESFAS / EO-31SF-3, Containment Spray and MSIV Actuation Failures	A,M,L,S	5
f. 4.16 KV Safeguards Power / EG-15S, Restore Power to Bus 15 Following a Reactor Trip	N,S	6
g. NI / NI-3S, NI Fails Low During Reactor Startup	D,L,S	7
h. Gaseous Waste / WG-1SF, Respond to Abnormal Radiation Level During Waste Gas Release	A,D,S	9
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. CVCS / VC-23SF-1, Perform Unit 2 RO Actions of F5, Appendix B, Attachment D, step AB.	E,N,R	1
j. DC Distribution / DC-2, Shutdown of the Portable Battery Charger and Restart of 21 Battery Charger.	D	6
k. Fire Protection/FP-2F-1, Emergency Starting of 122 Diesel Fire Pump	A,D,E,L	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: PRAIRIE ISLAND	Date of Examination: 07/30/07
Exam Level: SRO-I	Operating Test No.:

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. CVCS / VC-22SF-1, Place Alternate Letdown in Service	A,D,L,S	1
b. RCS / RC-19S, Perform RCS Leakage Determination Using Board Indications.	D,S	2
c. ECCS / SI-13S, Inadvertent Train B Safety Injection Actuation While Shutdown	D,P,L,S	3
d. AFW/Condensate, CD-1S, Align Cooling Water to the AFW Pump Suction	D,L,S	4b
e. ESFAS / EO-31SF-3, Containment Spray and MSIV Actuation Failures	A,M,L,S	5
f. Not administered to SRO-I	N/A	N/A
g. NI / NI-3S, NI Fails Low During Reactor Startup	D,L,S	7
h. Gaseous Waste / WG-1SF, Respond to Abnormal Radiation Level During Waste Gas Release	A,D,S	9
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. CVCS / VC-23SF-1, Perform Unit 2 RO Actions of F5, Appendix B, Attachment D, step AB.	E,N,R	1
j. DC Distribution / DC-2, Shutdown of the Portable Battery Charger and Restart of 21 Battery Charger.	D	6
k. Fire Protection/FP-2F-1, Emergency Starting of 122 Diesel Fire Pump	A,D,E,L	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: PRAIRIE ISLAND
Exam Level: SRO-U

Date of Examination: 07/30/07
Operating Test No.:

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. Not administered to SRO-U	N/A	N/A
b. Not administered to SRO-U	N/A	N/A
c. ECCS / SI-13S, Inadvertent Train B Safety Injection Actuation While Shutdown	D,P,L,S	3
d. Not administered to SRO-U	N/A	N/A
e. ESFAS / EO-31SF-3, Containment Spray and MSIV Actuation Failures	A,M,L,S	5
f. Not administered to SRO-U	N/A	N/A
g. Not administered to SRO-U	N/A	N/A
h. Not administered to SRO-U	N/A	N/A
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. CVCS / VC-23-SF-1, Perform Unit 2 RO Actions of F5, Appendix B, Attachment D, Step AB	E,N,R	1
j. DC Distribution / DC-2, Shutdown of the Portable Battery Charger and Restart of 21 Battery Charger.	D	6
k. Fire Protection/FP-2F-1, Emergency Starting of 122 Diesel Fire Pump	A,D,E,L	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: Prairie Island Printed: 03/07/2007

Date Of Exam: 08/09/2007

Tier	Group	RO K/A Category Points												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total
1. Emergency & Abnormal Plant Evolutions	1	0	0	0				0	0			0	0	0	0	3	3	6
	2	0	0	0				0	0			0	0	0	0	2	2	4
	Tier Totals	0	0	0				0	0			0	0	0	0	5	5	10
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	5
	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3	4	8
3. Generic Knowledge And Abilities Categories					1		2		3		4		0	1	2	3	4	7
					0		0		0		0			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 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 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 (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. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topices 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.

Facility: Prairie Island Printed: 03/07/2007

Date Of Exam: 08/09/2007

Tier	Group	RO K/A Category Points												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	Total
1. Emergency & Abnormal Plant Evolutions	1	3	3	3				3	3			3	18	0	0	0	0	0
	2	2	2	1				2	1			1	9	0	0	0	0	0
	Tier Totals	5	5	4				5	4			4	27	0	0	0	0	0
2. Plant Systems	1	2	2	3	3	3	2	2	3	2	3	3	28	0	0	0	0	0
	2	1	1	1	1	1	1	1	1	0	1	1	10	0	0	0	0	0
	Tier Totals	3	3	4	4	4	3	3	4	2	4	4	38	0	0	0	0	0
3. Generic Knowledge And Abilities Categories		1			2			3			4		10	1	2	3	4	0
		3			2			3			2			0	0	0	0	

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 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 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 (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. Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topices 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.

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000011 Large Break LOCA / 3			X				EK3.12 - Actions contained in EOP for emergency LOCA (large break)	4.4	1
000015/000017 RCP Malfunctions / 4		X					AK2.10 - RCP indicators and controls	2.8*	1
000022 Loss of Rx Coolant Makeup / 2					X		AA2.01 - Whether charging line leak exists	3.2	1
000025 Loss of RHR System / 4		X					AK2.05 - Reactor building sump	2.6	1
000026 Loss of Component Cooling Water / 8				X			AA1.05 - The CCWS surge tank, including level control and level alarms, and radiation alarm	3.1	1
000027 Pressurizer Pressure Control System Malfunction / 3		X					AK2.03 - Controllers and positioners	2.6	1
000029 ATWS / 1			X				EK3.02 - Starting a specific charging pump	3.1	1
000054 Loss of Main Feedwater / 4						X	2.1.2 - Knowledge of operator responsibilities during all modes of plant operation.	3.0	1
000055 Station Blackout / 6	X						EK1.01 - Effect of battery discharge rates on capacity	3.3	1
000056 Loss of Off-site Power / 6	X						AK1.01 - Principle of cooling by natural convection	3.7	1
000057 Loss of Vital AC Inst. Bus / 6						X	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	1
000058 Loss of DC Power / 6			X				AK3.01 - Use of dc control power by ED/Gs	3.4*	1
000062 Loss of Nuclear Svc Water / 4				X			AA1.06 - Control of flow rates to components cooled by the SWS	2.9	1
000065 Loss of Instrument Air / 8				X			AA1.02 - Components served by instrument air to minimize drain on system	2.6	1
W/E04 LOCA Outside Containment / 3					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.6	1
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4						X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1
W/E11 Loss of Emergency Coolant Recirc. / 4					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.4	1

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4	X						EK1.1 - Components:, capacity, and function of emergency systems	3.4	1
K/A Category Totals:	**3**	**3**	**3**	**3**	**3**	**3**	**Group Point Total:**		**18**

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000001 Continuous Rod Withdrawal / 1		X					AK2.01 - Rod bank step counters	2.9	1
000024 Emergency Boration / 1					X		AA2.05 - Amount of boron to add to achieve required SDM	3.3	1
000032 Loss of Source Range NI / 7				X			AA1.01 - Manual restoration of power	3.1*	1
000033 Loss of Intermediate Range NI / 7						X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.0	1
000068 Control Room Evac. / 8			X				AK3.02 - System response to turbine trip	3.7	1
W/E07 Inad. Core Cooling / 4	X						EK1.3 - Annunciators and conditions indicating signals, and remedial actions associated with the Saturated Core Cooling	3.2	1
W/E10 Natural Circ. / 4		X					EK2.2 - Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility	3.6	1
W/E14 Loss of CTMT Integrity / 5				X			EA1.2 - Operating behavior characteristics of the facility	3.3	1
W/E16 High Containment Radiation / 9	X						EK1.2 - Normal, abnormal and emergency operating procedures associated with High Containment Radiation	2.7	1
K/A Category Totals:	**2**	**2**	**1**	**2**	**1**	**1**	**Group Point Total:**		**9**

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
003 Reactor Coolant Pump						X						K6.14 - Starting requirements	2.6	1
004 Chemical and Volume Control				X								K4.14 - Control interlocks on letdown system (letdown tank bypass valve)	2.8*	1
005 Residual Heat Removal	X											K1.09 - RCSO	3.6	1
006 Emergency Core Cooling					X							K5.06 - Relationship between ECCS flow and RCS pressure	3.5	1
006 Emergency Core Cooling										X		A4.01 - Pumps	4.1	1
007 Pressurizer Relief/Quench Tank							X					A1.02 - Maintaining quench tank pressure	2.7	1
007 Pressurizer Relief/Quench Tank											X	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
008 Component Cooling Water								X				A2.05 - Effect of loss of instrument and control air on the position of the CCW valves that are air operated	3.3*	1
010 Pressurizer Pressure Control					X							K5.01 - Determination of condition of fluid in PZR, using steam tables	3.5	1
010 Pressurizer Pressure Control						X						K6.01 - Pressure detection systems	2.7	1
012 Reactor Protection			X									K3.03 - SDS	3.1*	1
012 Reactor Protection											X	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
013 Engineered Safety Features Actuation			X									K3.01 - Fuel	4.4	1
022 Containment Cooling			X									K3.02 - Containment instrumentation readings	3.0	1
022 Containment Cooling										X		A4.01 - CCS fans	3.6	1
026 Containment Spray									X			A3.01 - Pump starts and correct MOV positioning	4.3	1
039 Main and Reheat Steam					X							K5.08 - Effect of steam removal on reactivity	3.6	1
059 Main Feedwater									X			A3.02 - Programmed levels of the S/G	2.9	1
061 Auxiliary/Emergency Feedwater		X										K2.01 - AFW system MOVs	3.2*	1
062 AC Electrical Distribution								X				A2.08 - Consequences of exceeding voltage limitations	2.7	1

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
063 DC Electrical Distribution								X				A2.01 - Grounds	2.5	1
063 DC Electrical Distribution										X		A4.03 - Battery discharge rate	3.0*	1
064 Emergency Diesel Generator	X											K1.05 - Starting air system	3.4	1
073 Process Radiation Monitoring				X								K4.01 - Release termination when radiation exceeds setpoint	4.0	1
076 Service Water				X								K4.03 - Automatic opening features associated with SWS isolation valves to CCW heat exchangers	2.9*	1
078 Instrument Air		X										K2.01 - Instrument air compressor	2.7	1
078 Instrument Air											X	2.1.30 - Ability to locate and operate components, including local controls.	3.9	1
103 Containment							X					A1.01 - Containment pressure, temperature, and humidity	3.7	1
K/A Category Totals:	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**3**	**2**	**3**	**3**	**Group Point Total:**		**28**

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
001 Control Rod Drive		X										K2.05 - M/G sets	3.1*	1
011 Pressurizer Level Control						X						K6.03 - Relationship between PZR level and PZR heater control circuit	2.9	1
014 Rod Position Indication								X				A2.03 - Dropped rod	3.6	1
016 Non-nuclear Instrumentation											X	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	1
017 In-core Temperature Monitor										X		A4.01 - Actual in-core temperatures	3.8	1
033 Spent Fuel Pool Cooling							X					A1.01 - Spent fuel pool water level	2.7	1
034 Fuel Handling Equipment				X								K4.03 - Overload protection	2.6	1
068 Liquid Radwaste	X											K1.07 - Sources of liquid wastes for LRS	2.7	1
071 Waste Gas Disposal			X									K3.05 - ARM and PRM systems	3.2	1
072 Area Radiation Monitoring					X							K5.02 - Radiation intensity changes with source distance	2.5	1
K/A Category Totals:	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**1**	**1**	**Group Point Total:**		**10**

PWR SRO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000008 Pressurizer Vapor Space Accident / 3					X		AA2.25 - Expected leak rate from open PORV or code safety	3.4	1
000009 Small Break LOCA / 3						X	2.4.49 - Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4.0	1
000009 Small Break LOCA / 3						X	2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
000038 Steam Gen. Tube Rupture / 3					X		EA2.02 - Existence of an S/G tube rupture and its potential consequences	4.8	1
000040 Steam Line Rupture - Excessive Heat Transfer / 4					X		AA2.05 - When ESFAS systems may be secured	4.5	1
W/E04 LOCA Outside Containment / 3						X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**3**	**3**	**Group Point Total:**		**6**

PWR SRO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000003 Dropped Control Rod / 1					X		AA2.03 - Dropped rod, using in-core/ex-core instrumentation, in-core or loop temperature measurements	3.8	1
000005 Inoperable/Stuck Control Rod / 1					X		AA2.01 - Stuck or inoperable rod from in-core and ex-core NIS, in-core or loop temperature measurements	4.1	1
000067 Plant Fire On-site / 9						X	2.1.32 - Ability to explain and apply all system limits and precautions.	3.8	1
W/E02 SI Termination / 3						X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**2**	**2**	**Group Point Total:**		**4**

PWR SRO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
003 Reactor Coolant Pump											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
005 Residual Heat Removal											X	2.1.33 - Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	4.0	1
059 Main Feedwater								X				A2.11 - Failure of feedwater control system	3.3*	1
064 Emergency Diesel Generator											X	2.1.32 - Ability to explain and apply all system limits and precautions.	3.8	1
073 Process Radiation Monitoring								X				A2.02 - Detector failure	3.2	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	**Group Point Total:**		**5**

PWR SRO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
011 Pressurizer Level Control											X	2.1.2 - Knowledge of operator responsibilities during all modes of plant operation.	4.0	1
015 Nuclear Instrumentation								X				A2.02 - Faulty or erratic operation of detectors or compensating components	3.5*	1
034 Fuel Handling Equipment				X								K4.02 - Fuel movement	3.3	1
K/A Category Totals:	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**Group Point Total:**		**3**

Generic Knowledge and Abilities Outline (Tier 3)

PWR SRO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.14	Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
	2.1.20	Ability to execute procedure steps.	4.2	1
		Category Total:		**2**
Equipment Control	2.2.22	Knowledge of limiting conditions for operations and safety limits.	4.1	1
		Category Total:		**1**
Radiation Control	2.3.6	Knowledge of the requirements for reviewing and approving release permits.	3.1	1
	2.3.9	Knowledge of the process for performing a containment purge.	3.4	1
		Category Total:		**2**
Emergency Procedures/Plan	2.4.35	Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.	3.5	1
	2.4.38	Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator.	4.0	1
		Category Total:		**2**
		Generic Total:		**7**

Generic Knowledge and Abilities Outline (Tier 3)

PWR RO Examination Outline

Printed: 03/07/2007

Facility: Prairie Island

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements.	3.7	1
	2.1.12	Ability to apply technical specifications for a system.	2.9	1
	2.1.28	Knowledge of the purpose and function of major system components and controls.	3.2	1
		Category Total:		**3**
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.	3.7	1
	2.2.23	Ability to track limiting conditions for operations.	2.6	1
		Category Total:		**2**
Radiation Control	2.3.2	Knowledge of facility ALARA program.	2.5	1
	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	2.5	1
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	1
		Category Total:		**3**
Emergency Procedures/Plan	2.4.11	Knowledge of abnormal condition procedures.	3.4	1
	2.4.34	Knowledge of RO tasks performed outside the main control room during emergency operations including system geography and system implications.	3.8	1
		Category Total:		**2**
		Generic Total:		**10**

Facility: Prairie Island Scenario No.: 1 (Modified from Eval #11) Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Unit 1 is at 100% power. 11 TDAFWP and Breaker 16-10 are out of service.

Turnover: 11 Charging Pump must be removed from service for corrective maintenance. Swap charging pumps per 1C12.1, Section 5.4.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N (SRO, ATC)	Remove 11 Charging Pump from service. Place 13 Charging Pump in service.
2	N/A	N (SRO, BOP) R (ATC)	$F_Q(Z)$ is 5% outside COLR limits (requires 5% load reduction) (TS LCO)
3	RX05A	I (SRO, ATC)	Red Channel T-Hot Fails High (TS LCO)
4	ED09E	C (ALL)	Bus 15 Lockout (TS LCO)
5	SG02A	M (ALL)	11 Steam Generator Tube Rupture
6	SI05B	C (SRO, BOP)	12 Safety Injection Pump fails to auto start
7	FW34B	C (SRO, BOP)	12 Auxiliary Feedwater Pump fails to auto start

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

Facility: Prairie Island Scenario No.: 2 (Modified from Eval #7) Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Unit 1 is at the POAH. No equipment is out of service.

Turnover: Raise power to 6% per 1C1.2.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R (ATC) N (SRO)	Raise power from POAH to 6%.
2	NI06B	I (SRO, ATC)	Power Range NI 42 Fails High (TS LCO)
3	CC01A	C (SRO, BOP)	11 CC Pump Trip (12 CC Pump Auto Start Failure) (TS LCO)
4	VC04A	C (SRO, ATC)	11 Charging Pump Overload Trip
5	RC14	M (ALL)	Small Break LOCA
6	VARIOUS	M (ALL)	ATWS
7	RP20	I (SRO, BOP)	Partial Containment Isolation (Relay CI-10X) failure.

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

Facility: Prairie Island Scenario No.: Spare (New Scenario) Op-Test No.:

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: Unit 1 is at 100% power. No equipment is out of service.

Turnover: Reduce power to 90% to support maintenance.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R (ATC) N (SRO,BOP)	Reduce power to 90% to support plant maintenance.
2	RX202	I (SRO,ATC)	Pressurizer Pressure Instrument Fails High (TS LCO)
3	TC07C	C (SRO,BOP) R(ATC)	Turbine Intercept Valve Fails Closed
4	FW27A	C (SRO,BOP)	Feedwater Reg. Valve Fails Closed – Must be Manually Reopened
5	NI05D	I (SRO,ATC)	Power Range N44 fails low (TS LCO)
6	MS01A	M (ALL)	11 Main Steam Line Break Inside Containment
7	RP19	C (SRO,BOP)	Failure of SI signal to Feedwater/Condensate System
8	RP05	C (SRO,BOP)	Failure of Containment Isolation Signal Train A
9	RP08A	C(SRO,BOP)	Failure of Safeguards Actuation Train A to auto-actuate

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

Region III had no comments on the Prairie Island Examination Outline.