

**FACILITY PROPOSED EXAMINATION SUBMITTAL CHECKLISTS**

**FOR THE KEWAUNEE INITIAL EXAMINATION - NOVEMBER 2005**



SEP 22 2005

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

Serial No. 05-636  
KPS/LIC/GR: RO  
Docket No. 50-305  
License No. DPR-43

**DOMINION ENERGY KEWAUNEE, INC.**  
**KEWAUNEE POWER STATION**  
**RESPONSE TO FURNISH WRITTEN EXAMINATIONS, OPERATING TESTS, AND**  
**SUPPORTING REFERENCE MATERIALS**

In response to a letter from the NRC dated July 14, 2005 regarding the administration of licensing examinations at the Kewaunee Power Station, enclosed are the written examinations, operating tests, and the supporting reference materials identified in NUREG-1021 Revision 9, Attachment 2 to ES-201.

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

If you have questions or require additional information, please feel free to contact Mr. Frank Winks at 920-388-8303.

Very truly yours,

A handwritten signature in black ink, appearing to read "M. Gaffney", written in a cursive style.

Michael G. Gaffney  
Site Vice President, Kewaunee Power Station

Enclosures

Commitments made by this letter: NONE

cc: Without enclosures  
Mr. S. C. Burton  
NRC Senior Resident Inspector  
Kewaunee Power Station  
Madison, WI 53707

Without enclosures  
U.S. Nuclear Regulatory Commission  
Attention: Document Control Desk  
Washington, D.C. 20555

## **Kewaunee 2005 NRC Operator License Exam**

### **Examination Submittal**

#### **Contents**

1. Form ES-301-3, Operating Test Quality Checklist – 1 page
2. Form ES-301-4, Simulator Scenario Quality Checklist – 1 page
3. Form ES-301-5, Transient and Event Checklist – 3 pages (Operating Test 1 (Group 1) updated since Outline submittal)
4. Form ES-301-6, Competencies Checklist – 2 pages
5. Form ES-401-4, Record of Rejected K/As – 1 page (1 additional since Outline submittal)
6. Form ES-401-3, SRO Generic Knowledge and Abilities Outline (Tier 3) – 1 page (Change since Outline submittal)
7. Form ES-401-6, Written Examination Quality Checklist – 1 page
8. RO Written Examination and provided references (ES-401-7) – 75 pages & 2 references (1 page each).
9. SRO Written Examination and provided references (ES-401-8) – 25 pages & 4 references (19 pages, 13 pages, and 3 of 1 page each).
10. RO Written Examination Key with supporting information. (75 questions)
11. SRO Written Examination Key with supporting information. (25 questions)
12. Operating Examination, Scenarios (Form D-1 and Form D-2) – 4 scenarios
13. Operating Examination, JPMs – 8 Control Room Systems, 3 In-Plant Systems, 7 Admin)

Facility: Kewaunee Nuclear Station		Date of Examination: 11/14/05		Operating Test Number: 1	
1. General Criteria		Initials			
		a	b*	c#	
a.	The operating test conforms with the previously approved outline; changes are consistent with sampling requirements (e.g., 10 CFR 55.45, operational importance, safety function distribution).	SY	BP	BP	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	SY	BP	BP	
c.	The operating test shall not duplicate items from the applicants' audit test(s). (see Section D.1.a.)	SY	BP	BP	
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	SY	BP	BP	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	SY	BP	BP	
2. Walk-Through Criteria		--	--	--	
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> <li>initial conditions</li> <li>initiating cues</li> <li>references and tools, including associated procedures</li> <li>reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time-critical by the facility licensee</li> <li>operationally important specific performance criteria that include: <ul style="list-style-type: none"> <li>detailed expected actions with exact criteria and nomenclature</li> <li>system response and other examiner cues</li> <li>statements describing important observations to be made by the applicant</li> <li>criteria for successful completion of the task</li> <li>identification of critical steps and their associated performance standards</li> <li>restrictions on the sequence of steps, if applicable</li> </ul> </li> </ul>	SY	BP	BP	
b.	Ensure that any changes from the previously approved systems and administrative walk-through outlines (Forms ES-301-1 and 2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last 2 NRC examinations) specified on those forms and Form ES-201-2.	SY N/A	BP	BP	
3. Simulator Criteria		--	--	--	
The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.		SY		BP	
Printed Name / Signature		Date			
a.	Author Stephen Johnson / <i>Stephen Johnson</i>	9/26/05			
b.	Facility Reviewer(*) Phil Short / <i>Phil Short</i>	9/26/05			
c.	NRC Chief Examiner (#) Bruce Palogi / <i>Bruce Palogi</i>	11-3-05			
d.	NRC Supervisor <i>Wm. Himmelsheim</i> / <i>Wm. Himmelsheim</i>	11-8-05			
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.					

Facility: Kewaunee Power Station      Date of Exam: 11/14/05      Scenario Numbers: 1 / 2 / 3 / 4      Operating Test No.: 1					
QUALITATIVE ATTRIBUTES		Initials			
		a	b*	c#	
1.	The initial conditions are realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue the operators into expected events.	AP	BP	CP	
2.	The scenarios consist mostly of related events.	AP	BP	CP	
3.	Each event description consists of <ul style="list-style-type: none"> <li>the point in the scenario when it is to be initiated</li> <li>the malfunction(s) that are entered to initiate the event</li> <li>the symptoms/cues that will be visible to the crew</li> <li>the expected operator actions (by shift position)</li> <li>the event termination point (if applicable)</li> </ul>	AP	BP	CP	
4.	No more than one non-mechanistic failure (e.g., pipe break) is incorporated into the scenario without a credible preceding incident such as a seismic event.	AP	BP	CP	
5.	The events are valid with regard to physics and thermodynamics.	AP	BP	CP	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	AP	BP	CP	
7.	If time compression techniques are used, the scenario summary clearly so indicates. Operators have sufficient time to carry out expected activities without undue time constraints. Cues are given.	AP	BP	CP	
8.	The simulator modeling is not altered.	AP	BP	CP	
9.	The scenarios have been validated. Pursuant to 10 CFR 55.46(d), any open simulator performance deficiencies or deviations from the referenced plant have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	AP	BP	CP	
10.	Every operator will be evaluated using at least one new or significantly modified scenario. All other scenarios have been altered in accordance with Section D.5 of ES-301.	AP	BP	CP	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	AP	BP	CP	
12.	Each applicant will be significantly involved in the minimum number of transients and events specified on Form ES-301-5 (submit the form with the simulator scenarios).	AP	BP	CP	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	AP	BP	CP	
<b>Target Quantitative Attributes (Per Scenario; See Section D.5.d)</b>		<b>Actual Attributes</b>			
1.	Total malfunctions (5-8)	7 / 7 / 6 / 6	AP	BP	CP
2.	Malfunctions after EOP entry (1-2)	3 / 3 / 2 / 2	AP	BP	CP
3.	Abnormal events (2-4)	4 / 4 / 5 / 4	AP	BP	CP
4.	Major transients (1-2)	1 / 2 / 1 / 1	AP	BP	CP
5.	EOPs entered/requiring substantive actions (1-2)	2 / 3 / 2-3 / 2	AP	BP	CP
6.	EOP contingencies requiring substantive actions (0-2)	0 / 1 / 0 / 1	AP	BP	CP
7.	Critical tasks (2-3)	4 / 3 / 2-3 / 2	AP	BP	CP

Facility: Kewaunee Power Station			Date of Exam: 11/14/05			Operating Test No.: 1 (Group 1)												
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					
															R	I	U	
RO <input checked="" type="checkbox"/>	RX			--	1										1	1	1	0
SRO-I <input type="checkbox"/>	NOR			1	--										1	1	1	1
SRO-U <input type="checkbox"/>	I/C			2,3,5	3,7										5	4	4	2
	MAJ			6	4,5										3	2	2	1
	TS			--	--										0	0	2	2
RO <input type="checkbox"/>	RX		1												1	1	1	0
SRO-I <input checked="" type="checkbox"/>	NOR		--	1											1	1	1	1
SRO-U <input type="checkbox"/>	I/C		4,7	2,3,6,7											6	4	4	2
	MAJ		6	4,5											3	2	2	1
	TS		--	2,3											2	0	2	2
RO <input type="checkbox"/>	RX	--													0	1	1	0
SRO-I <input type="checkbox"/>	NOR	1													1	1	1	1
SRO-U <input checked="" type="checkbox"/>	I/C	2,3,4,5,7													5	4	4	2
	MAJ	6													1	2	2	1
	TS	2,3													2	0	2	2
RO <input type="checkbox"/>	RX															1	1	0
SRO-I <input type="checkbox"/>	NOR															1	1	1
SRO-U <input type="checkbox"/>	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 do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in 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: Kewaunee Power Station				Date of Exam: 11/07/05				Operating Test No.: 1 (Group 2)									
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						
		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 <input type="checkbox"/>	RX				1		--						1	1	1	0	
SRO-I <input type="checkbox"/>	NOR				--		1						1	1	1	1	
<input checked="" type="checkbox"/>	I/C				3,7		2,3,4,5,7						7	4	4	2	
SRO-U <input type="checkbox"/>	MAJ				4,5		6						3	2	2	1	
	TS				--		2,3,4						3	0	2	2	
RO <input type="checkbox"/>	RX		1		--								1	1	1	0	
SRO-I <input type="checkbox"/>	NOR		--		1								1	1	1	1	
<input checked="" type="checkbox"/>	I/C		4,7		2,3,6,7								6	4	4	2	
SRO-U <input type="checkbox"/>	MAJ		6		4,5								3	2	2	1	
	TS		--		2,3								2	0	2	2	
RO <input type="checkbox"/>	RX	--											0	1	1	0	
SRO-I <input type="checkbox"/>	NOR	1											1	1	1	1	
<input type="checkbox"/>	I/C	2,3,4,5,7											5	4	4	2	
SRO-U <input type="checkbox"/>	MAJ	6											1	2	2	1	
<input checked="" type="checkbox"/>	TS	2,3											2	0	2	2	
RO <input type="checkbox"/>	RX													1	1	0	
SRO-I <input type="checkbox"/>	NOR													1	1	1	
<input type="checkbox"/>	I/C													4	4	2	
SRO-U <input type="checkbox"/>	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 do one scenario, including at least two instrument or component (I/C) malfunctions and one major transient, in 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: Kewaunee Power Station			Date of Exam: 11/07/05			Operating Test No.: 1 (Group 3)											
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				
RO <input type="checkbox"/>	RX		1		--									1	1	1	0
SRO-I <input type="checkbox"/>	NOR		--		1									1	1	1	1
<input checked="" type="checkbox"/> SRO-U	I/C		4,7		2,3,6,7									6	4	4	2
<input type="checkbox"/>	MAJ		6		4,5									3	2	2	1
	TS		--		2,3									2	0	2	2
RO <input type="checkbox"/>	RX	--												0	1	1	0
SRO-I <input type="checkbox"/>	NOR	1												1	1	1	1
<input type="checkbox"/> SRO-U	I/C	2,3,4,5,7												5	4	4	2
<input checked="" type="checkbox"/>	MAJ	6												1	2	2	1
	TS	2,3												2	0	2	2
RO <input type="checkbox"/>	RX														1	1	0
SRO-I <input type="checkbox"/>	NOR														1	1	1
<input type="checkbox"/> SRO-U	I/C														4	4	2
<input type="checkbox"/>	MAJ														2	2	1
	TS														0	2	2
RO <input type="checkbox"/>	RX														1	1	0
SRO-I <input type="checkbox"/>	NOR														1	1	1
<input type="checkbox"/> SRO-U	I/C														4	4	2
<input type="checkbox"/>	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 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 requirements specified for the applicant's license level in the right-hand columns.

Facility: Kewaunee Power Station		Date of Examination: 11/14/05				Operating Test No.: 1										
Competencies	APPLICANTS															
	RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	RO 1	SRO 2	RO 3	4	BOP 1	RO 2	SRO 3	4	SRO 1	BOP 2	BOP 3	4
Interpret/Diagnose Events and Conditions	2,3,5,6	3,4,5,7			4,6,7	2-7	2,3,6,7		2,3,5,6	3,4,5,7	2-6		2-7	1,2,3,4,5	2,4	
Comply With and Use Procedures (1)	1,2,3,6	1,3,4,5,7			1,4,6,7	1-7	1,3,4,5,6,7		1,2,3,6	1,3,4,5,7	2-7		1-7	1-6	1,2,4,5	
Operate Control Boards (2)	1,2,3,5,6	1,3,4,5,7			1,4,6,7	N/A	1,3,4,5,6,7		1,2,3,5,6	1,3,4,5,7	N/A		N/A	1-6	1,2,4,5	
Communicate and Interact	1-7	1-5,7			1,2,4,6,7	1-7	1-7		1-7	1-5,7	1-7		1-7	1-6	1,2,4,5	
Demonstrate Supervisory Ability (3)	N/A	N/A			N/A	1-7	N/A		N/A	N/A	2-7		1,2,3,4,6,7	N/A	N/A	
Comply With and Use Tech. Specs. (3)	N/A	N/A			N/A	2,3	N/A		N/A	N/A	2,3,4		2,3	N/A	N/A	
Notes: (1) Includes Technical Specification compliance for an RO. (2) Optional for an SRO-U. (3) Only applicable to SROs.																

*Instructions:*

*Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.*

Facility: Kewaunee Power Station Date of Examination: 07/14/05 Operating Test No.: 1-4																
Competencies	APPLICANTS															
	RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input checked="" type="checkbox"/>				RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>			
	SCENARIO				SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Interpret/Diagnose Events and Conditions				1,4,5				1-6				1-6				
Comply With and Use Procedures (1)				1,3,4, 5,6				1-6				1-6				
Operate Control Boards (2)				1,3,4, 5,6				N/A				N/A				
Communicate and Interact				1,3,4 5,6				1-6				1-6				
Demonstrate Supervisory Ability (3)				N/A				1-6				1-6				
Comply With and Use Tech. Specs. (3)				N/A				1,2				1,2				
Notes: (1) Includes Technical Specification compliance for an RO. (2) Optional for an SRO-U. (3) Only applicable to SROs.																

*Instructions:*

*Check the applicants' license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.*

# Generic Knowledge and Abilities Outline (Tier 3)

## PWR SRO Examination Outline

Printed: 09/25/2005

**Facility:** Kewaunee Nuclear Power Plant

**Form ES-401-3**

<u>Generic Category</u>	<u>KA</u>	<u>KA Topic</u>	<u>Imp.</u>	<u>Points</u>
Conduct of Operations	2.1.5	Ability to locate and use procedures and directives related to shift staffing and activities.	3.4	1
	2.1.25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.	3.1	1
	Category Total:			2
Equipment Control	2.2.7	Knowledge of the process for conducting tests or experiments not described in the safety analysis report.	3.2	1
	2.2.32	Knowledge of the effects of alterations on core configuration.	3.3	1
	Category Total:			2
Radiation Control	2.3.7	Knowledge of the process for preparing a radiation work permit.	3.3	1
	Category Total:			1
Emergency Procedures/Plan	2.4.11	Knowledge of abnormal condition procedures.	3.6	1
	2.4.28	Knowledge of procedures relating to emergency response to sabotage.	3.3	1
	Category Total:			2
Generic Total:				7



Facility: Kewaunee Power Station		Date of Exam: 11/18/05		Exam Level: RO <input checked="" type="checkbox"/> SRO <input checked="" type="checkbox"/>		
Item Description				Initial		
				a	b*	c*
1. Questions and answers are technically accurate and applicable to the facility.				SPJ	BP	BP
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				SPJ	BP	BP
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401				SPJ	BP	BP
4. The sampling process was random and systematic (If more than 4 RO or 2 SRO questions were repeated from the last 2 NRC licensing exams, consult the NRR OL program office).				SPJ	BP	BP
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input checked="" type="checkbox"/> the audit exam was systematically and randomly developed; or <input type="checkbox"/> the audit exam was completed before the license exam was started; or <input type="checkbox"/> the examinations were developed independently; or <input type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)				SPJ	BP	BP
6. Bank use meets limits (no more than 75 percent from the bank, at least 10 percent new, and the rest new or modified); enter the actual RO / SRO-only question distribution(s) at right.		Bank	Modified	New	SPJ	BP
		35 / 7	8 / 1	32 / 17		
7. Between 50 and 60 percent of the questions on the RO exam are written at the comprehension/ analysis level; the SRO exam may exceed 60 percent if the randomly selected K/As support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.		Memory		C/A	SPJ	BP
		34 / 8		41 / 17		
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				SPJ	BP	BP
9. Question content conforms with specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.				SPJ	BP	BP
10. Question psychometric quality and format meet the guidelines in ES Appendix B.				SPJ	BP	BP
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with the value on the cover sheet.				SPJ	BP	BP
Printed Name / Signature a. Author: Stephen Johnson / <i>Stephen Johnson</i> b. Facility Reviewer (*): Phillip Short / <i>Phillip Short</i> c. NRC Chief Examiner (#): <b>BRUCE PALACI</b> / <i>Bruce Palaci</i> d. NRC Regional Supervisor: <i>Donna Petersen</i>				Date 9/26/05 9/26/05 11-3-05 11-8-05		
Note: * The facility reviewer's initials/signature are not applicable for NRC-developed examinations. # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required.						