

2011 BRAIDWOOD STATION

INITIAL EXAMINATION

PROPOSED EXAM FILES

Exelon Generation Company, LLC
Braidwood Station
35100 South Route 53, Suite 84
Braceville, IL 60407-9619

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April 25, 2011
BW110040

10 CFR 55.40(b)

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

**Braidwood Station, Units 1 and 2
Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457**

Subject: Submittal of Integrated Initial License Training Examination Materials

Enclosed are the examination materials that Braidwood Station is submitting in support of the Initial License Examination scheduled during the weeks of June 20 and 27, 2011 at Braidwood Station.

This submittal includes the Senior Reactor Operator and Reactor Operator Written Examinations, Job Performance Measures, and Integrated Plant Operation Scenario Guides.

These examination materials have been developed in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. Please note that reference materials are attached to each individual examination question or item.

Some minor modifications have been made to the Integrated Examination Outline with regards to operational scenarios in order to improve balance and content. These changes improve examination quality and are in compliance with NUREG-1021, Revision 9, Supplement 1.

Some modifications or adjustments to the examination material may be required due to procedural changes.

In accordance with NUREG 1021, Revision 9, Supplement 1, Section ES-201, "Initial Operator Licensing Examination Process," please ensure that these materials are withheld from public disclosure until after the examinations are complete.

Should you have any questions concerning this letter, please contact Mr. Chris VanDenburgh, Regulatory Assurance Manager, at (815) 417-2800. For questions concerning examination materials, please contact Brian Kempen at (815) 458-7860.

Respectfully,



Daniel Enright
Site Vice President
Braidwood Station

Enclosures: (Hand delivered to Bruce Palagi, Chief Examiner, Region III)

- RO/SRO Composite Examination with references attached
- Control Room Systems and Facility Walk-Through Job Performance Measures with references attached
- Administrative Topic Job Performance Measures with references attached
- Integrated Plant Operation Scenario Guides
- Completed Checklists:
 - Operating Test Quality Checklist (Form ES-301-3)
 - Simulator Scenario Quality Checklist (Form ES-301-4)
 - Transient and Event Checklist (Form ES-301-5)
 - Competencies Checklist (Form ES-301-6)
 - Written Exam Quality Checklist (Form ES-401-6)
- Examination Security Agreements (Form ES-201-3)
- Record of Rejected K/As (Form ES-401-4)

cc: (without attachments)
Chief, NRC Operator Licensing Branch
NRC Senior Resident Inspector – Braidwood Station

Facility: <u>Braidwood</u>		Date of Examination: <u>6/20/11</u>		Operating Test Number: <u>2011</u>	
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).	BN	L	BP	
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	BN	L	BP	
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	BN	L	BP	
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	BN	L	BP	
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	BN	L	BP	
2. WALK-THROUGH CRITERIA		--	--	--	
a.	Each JPM includes the following, as applicable: <ul style="list-style-type: none"> • initial conditions • initiating cues • references and tools, including associated procedures • reasonable and validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee • operationally important specific performance criteria that include: <ul style="list-style-type: none"> - detailed expected actions with exact criteria and nomenclature - system response and other examiner cues - statements describing important observations to be made by the applicant - criteria for successful completion of the task - identification of critical steps and their associated performance standards - restrictions on the sequence of steps, if applicable 	BN	L	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.	BN	L	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.		BN	L	BP	
a.	Author	Printed Name / Signature <u>Brian G Kempen / <i>Brian Kempen</i></u>		Date <u>4/15/2011</u>	
b.	Facility Reviewer (*)	<u>Jim Smit / <i>Jim Smit</i></u>		<u>4/15/2011</u>	
c.	NRC Chief Examiner (#)	<u>BRUCE PALAGI / <i>Bruce Palagi</i></u>		<u>6/14/2011</u>	
d.	NRC Supervisor	<u>RK Walton / <i>Randolph K. Walton</i></u>		<u>6/15/2011</u>	
NOTE: * The facility signature is not applicable for NRC-developed tests # Independent NRC reviewer initial items in Column "c"; chief examiner concurrence is required.					

Facility: Braidwood		Date of Exam: 6/20/11		Scenario Numbers: 1 / 2 / 3		Operating Test Number: 2011		
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.	R	L	BP				
2.	The scenarios consist mostly of related events.	R	L					
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 	R	L	BP				
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.	R	L	BP				
5.	The events are valid with regard to physics and thermodynamics.	R	L	BP				
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	R	L	BP				
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.	R	L	BP				
8.	The simulator modeling is not altered.	R	L	BP				
9.	The scenarios have been validated. Pursuant to 10CFR55.46(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.	R	L	BP				
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.	R	L	BP				
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	R	L	BP				
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).	R	L	BP				
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	R	L	BP				
Target Quantitative Attributes (Per Scenario; See Section D.5.d)						Actual Attributes		
1.	Total malfunctions (5-8)	7 / 6 / 8		R	L	BP		
2.	Malfunctions after EOP entry (1-2)	2 / 1 / 2		R	L	BP		
3.	Abnormal events (2-4)	4 / 4 / 4		R	L	BP		
4.	Major transients (1-2)	1 / 1 / 1		R	L	BP		
5.	EOPs entered/requiring substantive actions (1-2)	2 / 1 / 1		R	L	BP		
6.	EOP contingencies requiring substantive actions (0-2)	1 / 1 / 1		R	L	BP		
7.	Critical tasks (2-3)	2 / 2 / 2		R	L	BP		

Facility: Braidwood		Date of Exam: 6/20/11		Scenario Numbers: 4 / 5 / Sp		Operating Test Number: 2011	
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.	R	A	BP			
2.	The scenarios consist mostly of related events.	R	A	BP			
3.	Each event description consists of <ul style="list-style-type: none"> the point in the scenario when it is to be initiated the malfunction(s) that are entered to initiate the event the symptoms/cues that will be visible to the crew the expected operator actions (by shift position) the event termination point (if applicable) 	R	A	BP			
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.	R	A	BP			
5.	The events are valid with regard to physics and thermodynamics.	R	A	BP			
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	R	A	BP			
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.	R	A	BP			
8.	The simulator modeling is not altered.	R	A	BP			
9.	The scenarios have been validated. Pursuant to 10CFR55.46(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.	R	A	BP			
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.	R	A	BP			
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	R	A	BP			
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).	R	A	BP			
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	R	A	BP			
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes		--	--	--	
1.	Total malfunctions (5-8)	7 / 5 / 7		R	A	BP	
2.	Malfunctions after EOP entry (1-2)	1 / 1 / 2		R	A	BP	
3.	Abnormal events (2-4)	4 / 3 / 4		R	A	BP	
4.	Major transients (1-2)	1 / 1 / 1		R	A	BP	
5.	EOPs entered/requiring substantive actions (1-2)	1 / 2 / 2		R	A	BP	
6.	EOP contingencies requiring substantive actions (0-2)	1 / 1 / 0		R	A	BP	
7.	Critical tasks (2-3)	3 / 3 / 2		R	A	BP	

Facility: Braidwood			Date of Examination: 6/20/2011			Operating Test No.: 2011									
Competencies	APPLICANTS														
	RO <input type="checkbox"/>			RO <input type="checkbox"/>			RO <input checked="" type="checkbox"/>			RO <input type="checkbox"/>					
	SRO-I <input checked="" type="checkbox"/>			SRO-I <input checked="" type="checkbox"/>			SRO-I <input type="checkbox"/>			SRO-I <input type="checkbox"/>					
	SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>					
SCENARIO				SCENARIO				SCENARIO				SCENARIO			
1	3	5		1	3	5		1	3	5					
SRO	BOP	ATC		ATC	SRO	SRO		BOP	ATC	BOP					
Interpret/ Diagnose Events and Conditions	3-9	2,4,6,7,9	2,5		4,5,6,8,9	2-9	2-6		3,6,7	2,3,6-9	3,4,6				
Comply With and Use Procedures (1)	3,6-9	2,6,7,9	5		2,3,6-9	5-9	3-6		1-3,7-9	2,6-9	1,3,5,6				
Operate Control Boards (2)		2,4,6,9	2,5		2,5,8,9				1-3,7,8	2,3,6-9	1,3,5,6				
Communicate and Interact	1-9	1,2,4,6,7,9	2,5		2-9	1-9	1-6		1-3,6-8	2,3,5-9	1,3-6				
Demonstrate Supervisory Ability (3)	1-9					1-9	1-6		N/A	N/A	N/A				
Comply With and Use Tech Specs. (3)	4,6					5,6	3,4		N/A	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 applicant's license type and enter one or more event numbers that will allow the examiners to evaluate every applicable competency for every applicant.

Group 4

Facility: Braidwood	Date of Examination: 6/20/2011	Operating Test No.: 2011										
Competencies	APPLICANTS											
	RO <input type="checkbox"/>	RO <input type="checkbox"/>	RO <input type="checkbox"/>	RO <input type="checkbox"/>								
	SRO-I <input checked="" type="checkbox"/>	SRO-I <input checked="" type="checkbox"/>	SRO-I <input type="checkbox"/>	SRO-I <input type="checkbox"/>								
	SRO-U <input type="checkbox"/>	SRO-U <input type="checkbox"/>	SRO-U <input type="checkbox"/>	SRO-U <input type="checkbox"/>								
	SCENARIO			SCENARIO			SCENARIO			SCENARIO		
	2	3		2	3							
	SRO	ATC		ATC	SRO							
Interpret/ Diagnose Events and Conditions	3-8	2,3,6-9		3,4,7	2-9							
Comply With and Use Procedures (1)	3-7	2,6-9		3,4,7	5-9							
Operate Control Boards (2)		2,3,6-9		3,4,7								
Communicate and Interact	1-8	2-9		3,4,7	1-9							
Demonstrate Supervisory Ability (3)	1-8				1-9							
Comply With and Use Tech Specs. (3)	3,4				5,6							
<p>Notes:</p> <p>(1) Includes Technical Specification compliance for an RO.</p> <p>(2) Optional for an SRO-U.</p> <p>(3) Only applicable to SROs.</p>												

Instructions:

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

Group 5

Facility: Braidwood		Date of Examination: 6/20/2011				Operating Test No.: 2011									
Competencies	APPLICANTS														
	RO <input type="checkbox"/>			RO <input checked="" type="checkbox"/>			RO <input type="checkbox"/>			RO <input type="checkbox"/>					
	SRO-I <input checked="" type="checkbox"/>			SRO-I <input type="checkbox"/>			SRO-I <input type="checkbox"/>			SRO-I <input type="checkbox"/>					
	SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>			SRO-U <input type="checkbox"/>					
SCENARIO				SCENARIO				SCENARIO				SCENARIO			
2		4		2		4									
SRO		ATC		ATC		BOP									
Interpret/ Diagnose Events and Conditions		3-8 3,5,6		3,4,7 2,4,6-8											
Comply With and Use Procedures (1)		3-7 3,5-8		3,4,7 4,6-8											
Operate Control Boards (2)		3,5-8		3,4,7 2,4,6-8											
Communicate and Interact		1-8 3,5-8		3,4,7 2,4,6-8											
Demonstrate Supervisory Ability (3)		1-8		N/A N/A											
Comply With and Use Tech Specs. (3)		3,4		N/A N/A											
<p>Notes:</p> <p>(1) Includes Technical Specification compliance for an RO.</p> <p>(2) Optional for an SRO-U.</p> <p>(3) Only applicable to SROs.</p>															

Instructions:

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

Groups 6 & 7

Facility: Braidwood		Date of Examination: 6/20/2011				Operating Test No.: 2011										
Competencies	APPLICANTS															
	RO <input type="checkbox"/>	RO <input checked="" type="checkbox"/>	RO <input checked="" type="checkbox"/>	RO <input type="checkbox"/>	SRO-I <input type="checkbox"/>	SRO-I <input type="checkbox"/>	SRO-I <input type="checkbox"/>	SRO-I <input type="checkbox"/>	SRO-U <input checked="" type="checkbox"/>	SRO-U <input type="checkbox"/>	SRO-U <input type="checkbox"/>	SRO-U <input type="checkbox"/>				
	SCENARIO			SCENARIO			SCENARIO			SCENARIO						
	2	4			2	4			2	4						
	SRO	SRO			ATC	BOP			BOP	ATC						
Interpret/ Diagnose Events and Conditions	3-8	2-8			3,4,7	2,4,6-8			5-8	3,5,6						
Comply With and Use Procedures (1)	3-7	3-5,7-8			3,4,7	4,6-8			1,2,5-8	3,5-8						
Operate Control Boards (2)	N/A	N/A			3,4,7	2,4,6-8			1,2,5-8	3,5-8						
Communicate and Interact	1-8	1-8			3,4,7	2,4,6-8			1,2,5-8	3,5-8						
Demonstrate Supervisory Ability (3)	1-8	1-8			N/A	N/A			N/A	N/A						
Comply With and Use Tech Specs. (3)	3,4	4,5			N/A	N/A			N/A	N/A						
<p>Notes:</p> <p>(1) Includes Technical Specification compliance for an RO.</p> <p>(2) Optional for an SRO-U.</p> <p>(3) Only applicable to SROs.</p>																

Instructions:

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

Facility: Braidwood		Date of Exam: 6/20/2011		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.	R	A	BP			
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.	R	A	BP			
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401	R	A				
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 exam, consult the NRR OL program office).			BP			
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input type="checkbox"/> the audit exam was systematically and randomly developed; or <input checked="" type="checkbox"/> the audit exam was completed before the license exam was started; or <input checked="" type="checkbox"/> the examinations were developed independently; or 2 MD EXAM <input type="checkbox"/> the licensee certifies that there is no duplication; or <input type="checkbox"/> other (explain)	R	A	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	R	A	BP
	20/7 27%/28%	3/4 4%/16%	52/14 69%/56%			
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 KAs support the higher cognitive levels; enter the actual RO / SRO question distribution(s) at right.	Memory		C/A	R	A	BP
	33 / 9 44%/36%		42 / 16 55%/64%			
8. References/handouts provided do not give away answers or aid in the elimination of distractors.	R	A	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	R	A	BP			
10. Question psychometric quality and format meet the guidelines in ES Appendix B.	R	A	BP			
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with value on cover sheet	R	A	BP			
Printed Name / Signature					Date	
a. Author	Brian G Kempen / <i>Brian Kempen</i>			4/15/11		
b. Facility Reviewer (*)	James Smit / <i>James Smit</i>			4/15/11		
c. NRC Chief Examiner (#)	BRUCE PALAGI / <i>Bruce Palagi</i>			6/14/11		
d. NRC Regional Supervisor	RKWalters / <i>RK Walters</i>			6/15/11		
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.						