



May 31, 2016
BW160043

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
Renewed 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 September 6, 2016 through September 16, 2016 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", Revision 10. 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 the operational scenarios in order to improve balance and content. These changes improve examination quality and are in compliance with NUREG-1021, Revision 10, "Operator Licensing Examination Standards."

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

In accordance with NUREG 1021, Revision 10, 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. Steven Reynolds, Regulatory Assurance Manager, at (815) 417-2800. For questions concerning examination materials, please contact Eric Steinberg at 815-458-7690.

Respectfully,

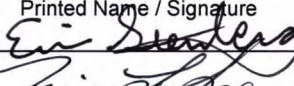

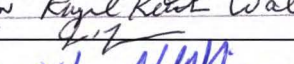

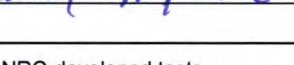
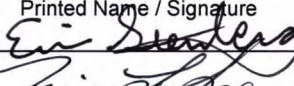

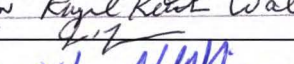

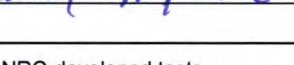
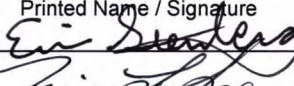

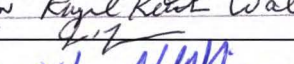

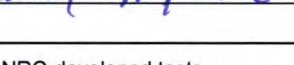
Marri Marchionda-Palmer
Site Vice President
Braidwood Station

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Enclosures: (Hand deliver to Keith Walton, 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)
- PWR exam outlines (RO and SRO) with question numbers (Form 401-2 and 401-3)

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

Facility: <u>Braidwood</u>		Date of Examination: <u>09/05/2016</u>		Operating Test Number: <u>151 NRC</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).	ES	PL	RHW																
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	ES	PL	RHW																
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	ES	PL	RHW																
d.	Overlap with the written examination and between different parts of the operating test is within acceptable limits.	ES	PL	RHW																
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	ES	PL	RHW																
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 	ES	PL	RHW																
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.	ES	PL	RHW																
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.		ES	PL	RHW																
<table border="0"> <tr> <td></td> <td>Printed Name / Signature</td> <td>Date</td> </tr> <tr> <td>a. Author</td> <td><u>Eric Steinberg</u> </td> <td><u>5/20/16</u></td> </tr> <tr> <td>b. Facility Reviewer (*)</td> <td><u>Kevin Lueshen</u> </td> <td><u>5/20/16</u></td> </tr> <tr> <td>c. NRC Chief Examiner (#)</td> <td><u>RAYMOND K. WATSON</u> </td> <td><u>6/22/2016</u></td> </tr> <tr> <td>d. NRC Supervisor</td> <td><u>Jesse Seymour</u> </td> <td><u>6/22/2016</u></td> </tr> <tr> <td></td> <td><u>Robert J. Orlikowski</u> </td> <td><u>8/15/2016</u></td> </tr> </table>			Printed Name / Signature	Date	a. Author	<u>Eric Steinberg</u> 	<u>5/20/16</u>	b. Facility Reviewer (*)	<u>Kevin Lueshen</u> 	<u>5/20/16</u>	c. NRC Chief Examiner (#)	<u>RAYMOND K. WATSON</u> 	<u>6/22/2016</u>	d. NRC Supervisor	<u>Jesse Seymour</u> 	<u>6/22/2016</u>		<u>Robert J. Orlikowski</u> 	<u>8/15/2016</u>	
	Printed Name / Signature	Date																		
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c. NRC Chief Examiner (#)	<u>RAYMOND K. WATSON</u> 	<u>6/22/2016</u>																		
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	<u>Robert J. Orlikowski</u> 	<u>8/15/2016</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: 09/05/16 Scenario Numbers: 1 / 2 / 3 Operating Test Number: 151 NRC				
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.	EL	BL	2
2.	The scenarios consist mostly of related events.	EL	BL	2
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) or conditions 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) 	EL	BL	2
4.	The events are valid with regard to physics and thermodynamics.	EL	BL	2
5.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	EL	BL	2
6.	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.	EL	BL	2
7.	The simulator modeling is not altered.	EL	BL	2
8.	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.	EL	BL	2
9.	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.	EL	BL	2
10.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	EL	BL	2
11.	The scenario set provides the opportunity for each applicant to be evaluated in each of the applicable rating factors. (Competency Rating factors as described on forms ES-303-1 and ES-303-3)	EL	BL	2
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).	EL	BL	2
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	EL	BL	2
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes	--	--
1.	Malfunctions after EOP entry (1-2)	1 / 1 / 1	EL	BL
2.	Abnormal events (2-4)	4 / 4 / 4	EL	BL
3.	Major transients (1-2)	1 / 1 / 2	EL	BL
4.	EOPs entered/requiring substantive actions (1-2)	2 / 2 / 3	EL	BL
5.	EOP contingencies requiring substantive actions (0-2)	0 / 1 / 1	EL	BL
6.	Critical tasks (2-3)	2 / 2 / 2	EL	BL
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c", chief examiner concurrence required.				

Facility: Braidwood		Date of Exam: 09/05/16		Scenario Numbers: 4		Operating Test Number: 151 NRC	
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.	ES	BL	2			
2.	The scenarios consist mostly of related events.	ES	BL	2			
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) or conditions 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) 	ES	BL	2			
4.	The events are valid with regard to physics and thermodynamics.	ES	BL	2			
5.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	ES	BL	2			
6.	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.	ES	BL	2			
7.	The simulator modeling is not altered.	ES	BL	2			
8.	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.	ES	BL	2			
9.	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.	ES	BL	2			
10.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	ES	BL	2			
11.	The scenario set provides the opportunity for each applicant to be evaluated in each of the applicable rating factors. (Competency Rating factors as described on forms ES-303-1 and ES-303-3)	ES	BL	2			
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).	ES	BL	2			
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	ES	BL	2			
Target Quantitative Attributes (Per Scenario; See Section D.5.d)		Actual Attributes	--	--	--		
1.	Malfunctions after EOP entry (1-2)	1	ES	BL	2		
2.	Abnormal events (2-4)	4	ES	BL	2		
3.	Major transients (1-2)	2	ES	BL	2		
4.	EOPs entered/requiring substantive actions (1-2)	2	ES	BL	2		
5.	EOP contingencies requiring substantive actions (0-2)	1	ES	BL	2		
6.	Critical tasks (2-3)	2	ES	BL	2		
NOTE: * The facility signature is not applicable for NRC-developed tests. # Independent NRC reviewer initial items in Column "c", chief examiner concurrence required.							

Group 1

Facility: Braidwood		Date of Examination: 09/05/2016				Operating Test No.: 151 NRC										
Competencies	APPLICANTS															
	RO <input checked="" type="checkbox"/>				RO <input checked="" type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>			
	SRO-I <input type="checkbox"/>				SRO-I <input type="checkbox"/>				SRO-I <input checked="" 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	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	BOP		ATC		BOP		ATC		SRO		SRO		ATC			
Interpret/ Diagnose Events and Conditions	1,3,5,8		3,5,6,8,10	1,5,6,7,9	2,4,7,8		1,2,4,8,10		1-9		1-10	2,3,4,7				
Comply With and Use Procedures (1)	1,3,5		3,5,6,8,10	1,5,6,7,9	2,4,7,8		1,2,4,8,10		1-9		1-10	2,3,4,7				
Operate Control Boards (2)	1,3,5,7,9		3,5,6,8,10	1,5,6,7,9	2,4,7,8		1,2,4,8,10		N/A		N/A	2,3,4,7				
Communicate and Interact	1-9		1-10	1-9	1-9		1-10		1-9		1-10	1-9				
Demonstrate Supervisory Ability (3)	N/A		N/A	N/A	N/A		N/A		1-9		1-10	N/A				
Comply With and Use Tech Specs. (3)	N/A		N/A	N/A	N/A		N/A		2,6		3,4	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. (This includes all rating factors for each competency.) (competency Rating Factors as described on forms ES-303-1 and ES-303-3.)

Group 2

Facility: Braidwood		Date of Examination: 09/05/2016				Operating Test No.: 151 NRC											
Competencies	APPLICANTS																
	RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U <input type="checkbox"/>				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 type="checkbox"/>				
	SCENARIO				SCENARIO				SCENARIO				SCENARIO				
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
		BOP	ATC	BOP			ATC	BOP			SRO	SRO	ATC				
Interpret/ Diagnose Events and Conditions		1,4,5,7	3,5,6,8,10	1,5,6,7,9			2,3,6,7	1,2,4,8,10			1-7	1-10	2,3,4,7				
Comply With and Use Procedures (1)		1,4,5,7	3,5,6,8,10	1,5,6,7,9			2,3,6,7	1,2,4,8,10			1-7	1-10	2,3,4,7				
Operate Control Boards (2)		1,4,5,7	3,5,6,8,10	1,5,6,7,9			2,3,6,7	1,2,4,8,10			N/A	N/A	2,3,4,7				
Communicate and Interact		1-7	1-10	1-9			1-7	1-10			1-7	1-10	1-9				
Demonstrate Supervisory Ability (3)		N/A	N/A	N/A			N/A	N/A			1-7	1-10	N/A				
Comply With and Use Tech Specs. (3)		N/A	N/A	N/A			N/A	N/A			2,4	3,4	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. (This includes all rating factors for each competency.) (competency Rating Factors as described on forms ES-303-1 and ES-303-3.)

Group 3

Facility: Braidwood		Date of Examination: 09/05/2016				Operating Test No.: 151 NRC										
Competencies	APPLICANTS															
	RO <input checked="" type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>			
	SRO-I <input type="checkbox"/>				SRO-I <input checked="" type="checkbox"/>				SRO-I <input checked="" 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	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
	BOP	ATC	BOP		ATC	SRO	SRO		SRO	BOP	ATC					
Interpret/ Diagnose Events and Conditions	1,3,5,8	2,3,6,7	1,2,4,8,10		2,4,7,8	1-7	1-10		1-9	1,4,5,7	3,5,6,8,10					
Comply With and Use Procedures (1)	1,3,5,8	2,3,6,7	1,2,4,8,10		2,4,7,8	1-7	1-10		1-9	1,4,5,7	3,5,6,8,10					
Operate Control Boards (2)	1,3,5,8	2,3,6,7	1,2,4,8,10		2,4,7,8	N/A	N/A		N/A	1,4,5,7	3,5,6,8,10					
Communicate and Interact	1-9	1-7	1-10		1-9	1-7	1-10		1-9	1-7	1-10					
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A		N/A	1-7	1-10		1-9	N/A	N/A					
Comply With and Use Tech Specs. (3)	N/A	N/A	N/A		N/A	2,4	3,4		2,6	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. (This includes all rating factors for each competency.) (competency Rating Factors as described on forms ES-303-1 and ES-303-3.)

Facility: Braidwood		Date of Examination: 09/05/2016								Operating Test No.: 151 NRC							
Competencies	APPLICANTS																
	RO <input checked="" type="checkbox"/>				RO <input checked="" type="checkbox"/>				RO <input type="checkbox"/>				RO <input type="checkbox"/>				
	SRO-I <input type="checkbox"/>				SRO-I <input type="checkbox"/>				SRO-I <input checked="" 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	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
	BOP	ATC		BOP	ATC	BOP			SRO	SRO		ATC					
Interpret/ Diagnose Events and Conditions	1,3,5,8	2,3,6,7		1,5,6,7,9	2,4,7,8	1,4,5,7			1-9	1-7		2,3,4,7					
Comply With and Use Procedures (1)	1,3,5,8	2,3,6,7		1,5,6,7,9	2,4,7,8	1,4,5,7			1-9	1-7		2,3,4,7					
Operate Control Boards (2)	1,3,5,8	2,3,6,7		1,5,6,7,9	2,4,7,8	1,4,5,7			N/A	N/A		2,3,4,7					
Communicate and Interact	1-9	1-7		1-9	1-9	1-7			1-9	1-7		1-9					
Demonstrate Supervisory Ability (3)	N/A	N/A		N/A	N/A	N/A			1-9	1-7		N/A					
Comply With and Use Tech Specs. (3)	N/A	N/A		N/A	N/A	N/A			2,6	2,4		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. (This includes all rating factors for each competency.) (competency Rating Factors as described on forms ES-303-1 and ES-303-3.)

Facility: Braidwood		Date of Exam: 09/05/16		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.				ES	PL	RW	
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available.				ES	PL	RW	
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401				ES	PL	RW	
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).						RW	
5. Question duplication from the license screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: ___ 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 ___ the examinations were developed independently; or ___ the licensee certifies that there is no duplication; or ___ other (explain)				ES	PL	RW	
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	ES	PL	RW
		31/9 41.3%/36%	8/2 10.7%/8%	36/14 48%/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	ES	PL	RW
		33 / 11 44%/44%		42 / 14 56%/56%			
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				ES	PL	RW	
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				ES	PL	RW	
10. Question psychometric quality and format meet the guidelines in ES Appendix B.				ES	PL	RW	
11. The exam contains the required number of one-point, multiple choice items; the total is correct and agrees with value on cover sheet				ES	PL	RW	
Printed Name / Signature				Date			
a. Author	Eric Steinberg			5/20/16			
b. Facility Reviewer (*)	Kevin Lueshen			5/20/16			
c. NRC Chief Examiner (#)	RAYMOND KETHA WALTON / Raymond Keith Walton			6/9/2016			
d. NRC Regional Supervisor	Robert J. Orlowski / RJO			8/15/2016			
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.							