

### Form 2.3-1 Examination Outline Quality Checklist

Facility: Calvert Cliffs		Date of Examination: July 11, 2022		
Item	Task Description	(Y)es / (N)o		
		a	b*	c#
WRITTEN	a. The outline was systematically and randomly prepared in accordance with the instructions in Section B of ES-4.1, and all knowledge and ability (K/A) categories are appropriately sampled.	Y		Y
	b. The outline does not overemphasize any systems, evolutions, or generic topics.	Y	N/A	Y
	c. Justifications for deselected or rejected K/A statements are acceptable.	Y	N/A	Y
SIMULATOR	a. Using Form 3.4-1, Events and Evolutions Checklist, verify that the proposed scenario set contains the required number of normal evolutions, reactivity evolutions, instrument and component failures, manual control evolutions, technical specifications, and major transients.	Y	N/A	Y
	b. There are enough scenarios (and spares) for the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity. Ensure that scenarios will not be repeated on subsequent days.	Y	N/A	Y
	c. Ensure that all scenarios are new or significantly modified in accordance with ES-3.4 and that no scenarios are duplicated from the applicants' audit test(s).	Y	N/A	Y
	d. To the extent possible, assess whether the outline(s) conforms with the qualitative and quantitative simulator set criteria specified on Form 2.3-2.	Y	N/A	Y
JPMS	a. Verify that the administrative outline meets the criteria specified in the instructions on Form 3.2-1 and that no tasks are duplicated from the applicants' audit test(s).	Y	N/A	Y
	b. Verify that the control room and in-plant systems outline meets the criteria specified in the instructions on Form 3.2-2 and that no tasks are duplicated from the applicants' audit test(s).	Y	N/A	Y
	c. Determine whether the number of job performance measures (JPMs) and JPM types is sufficient for the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	Y	N/A	Y
GENERAL	a. Assess whether the appropriate exam sections cover plant-specific priorities (including probabilistic risk assessment and individual plant examination insights).	Y	N/A	Y
	b. Assess whether the 10 CFR 55.41, 10 CFR 55.43, and 10 CFR 55.45 sampling is appropriate.	Y	N/A	Y
	c. Check whether K/A importance ratings (except for plant-specific priorities) are greater than or equal to 2.5.	Y	N/A	Y
	d. Check for duplication and overlap across the exam and with the last two NRC exams.	Y	N/A	Y
	e. Check the entire exam for balance of coverage.	Y	N/A	Y
	f. Assess whether the exam fits the appropriate job level (reactor operator or senior reactor operator).	Y	N/A	Y
a. Author		Printed Name/Signature	Date	
b. Facility Reviewer (*)		Thomas Setzer <i>Thomas C. Setzer</i>	7/25/2022	
c. NRC Reviewer (#)		not applicable	not applicable	
NRC Chief Examiner		Brian Fuller <i>B Fuller</i>	7/25/2022	
NRC Supervisor		Thomas Setzer <i>Thomas C. Setzer</i>	7/25/2022	
		Donald Jackson <i>Donald C. Jackson</i>	7/25/2022	
<p>* The facility licensee signature is not applicable for NRC-developed tests.                  # An independent NRC reviewer performs the steps in column "c." This may be the NRC Chief Examiner if he/she did not develop the outline under review.</p>				

## Form 2.3-2 Operating Test Quality Checklist

Facility: Calvert Cliffs	Date of Examination: 7/11/2022	Operating Test Number: 2022	
<b>General Criteria</b>	(Y)es / (N)o		
	a	b*	c#
a. The operating test meets the criteria on the associated test outline.	Y		Y
b. There are enough test items so that test items will not be repeated on more than 1 day of the operating test.	Y		Y
c. The operating test does not duplicate items from the applicants' audit test(s).	Y		Y
d. Overlap with the written examination and between different parts of the operating test is minimized.	Y		Y
e. It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	Y		Y
<b>Walkthrough Criteria</b>			
a. Each job performance measure (JPM) includes the following, as applicable: <ul style="list-style-type: none"> <li>• task standard</li> <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 the facility licensee deems it to be time critical</li> <li>• alternate path JPMs are labeled as "alternate path"</li> <li>• operationally important specific performance criteria that include the following: <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 JPM task standard</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>	Y		Y
b. Ensure that any changes from the previously approved JPM outlines (Forms 3.2-1 and 3.2-2) have not caused the test to deviate from any of the acceptance criteria (e.g., item distribution, bank use, repetition from the last two NRC examinations) specified on those forms.	Y		Y
<b>Simulator Scenario Set Criteria for Scenario Numbers:</b> /    /			
<b>QUALITATIVE ATTRIBUTES</b>			
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.	Y		Y
2. The scenarios consist mostly of related events.	Y		Y
3. Each event description consists of the following: <ul style="list-style-type: none"> <li>• the point in the scenario when it is to be initiated</li> <li>• the malfunction(s) or conditions 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>	Y		Y

QUALITATIVE ATTRIBUTES (continued)		(Y)es / (N)o		
		a	b*	c#
4.	The events are valid with regard to physics and thermodynamics.	Y		Y
5.	The sequencing and timing of events is reasonable and allows the examination team to observe and evaluate applicant performance.	Y		Y
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.	Y		Y
7.	The simulator modeling is not altered.	Y		Y
8.	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.	Y		Y
9.	Scenarios are new or significantly modified in accordance with ES-3.4.	Y		Y
10.	Scenarios (as grouped) allow each applicant to be significantly involved in the minimum number of transients, events, and evolutions specified on the version of Form 3.4-1 submitted with the scenario set.	Y		Y
11.	Applicants are evaluated on a similar number of preidentified critical tasks across scenarios, when possible.	Y		Y
12.	The level of difficulty is appropriate to support licensing decisions for each crew position.	Y		Y
TARGET QUANTITATIVE ATTRIBUTES per Scenario (See ES-3.4)		Actual Attributes by Scenario No. 1 / 2 / 4(SPARE)		(Y)es / (N)o
		a	b*	c#
1.	Malfunctions after emergency operating procedure (EOP) entry (1-2)	2	1 / 1	2
2.	Abnormal events (2-4)	7	6 / 6	6
3.	Major transients (1-2)	1	1 / 1	1
4.	EOPs entered/requiring substantive actions (1-2)	2	2 / 2	2
5.	Entry into a contingency EOP with substantive actions (≥ 1 per scenario set; set is the entire set of scenarios prepared for the scheduled exam)	1	0 / 1	1
6.	Preidentified critical tasks (≥ 2)	3	3 / 3	3
		Printed Name/Signature		Date
a.	Author	Thomas Setzer	<i>Thomas C. Setzer</i>	7/25/2022
b.	Facility Reviewer (*)	not applicable	not applicable	non applicable
c.	NRC Reviewer (#)	Brian Fuller	<i>B Fuller</i>	7/25/2022
	NRC Chief Examiner	Thomas Setzer	<i>Thomas C. Setzer</i>	7/25/2022
	NRC Supervisor	Don Jackson	<i>Donald E. Jackson</i>	7/25/2022
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# An independent NRC reviewer performs the steps in column c. This may be the NRC Chief Examiner if he/she did not develop the operating test under review.				

**Form 2.3-4 Written Examination Quality Checklist**

Facility: Calvert Cliffs		Date of Exam: July 11, 2022		Exam Level: RO X		SRO X		
Item Description				(Y)es / (N)o				
				a	b*	c#		
1. Questions and answers are technically accurate and applicable to the facility. Each question includes a technical reference.				Y		Y		
2. a. All questions reference NRC knowledge and abilities (K/As) requirements. b. Facility learning objectives are referenced as available. c. All questions include an explanation of the correct answer explanation and a distractor analysis.				Y		Y		
3. Senior reactor operator (SRO) questions test at the SRO license level.				Y		Y		
4. The sampling process was random and systematic. (If more than four reactor operator (RO) or two SRO questions were repeated from the last two NRC licensing exams, including full (100-question) retake examinations, consult the NRC Office of Nuclear Reactor Regulation operator licensing program office.)				Y		Y		
5. Question duplication from the licensee 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. <input type="checkbox"/> The audit exam was completed before the license exam was started. <input type="checkbox"/> The examinations were developed independently. <input type="checkbox"/> The licensee certifies that there is no duplication. <input type="checkbox"/> Other (explain):				Y		Y		
6. Bank use meets limits (no more than 75% from the bank, at least 10% new (at the comprehension/analysis level), and the rest new or modified); enter the actual RO/SRO-only question distribution >				Bank	Modified	New	Y	Y
				48 / 14	2 / 0	25 / 11	Y	Y
7. Between 38 and 45 questions of the questions on the RO exam and at least 13 of the questions on the SRO-only portion of the exam are written at the comprehension/analysis level; enter the actual RO/SRO-only question distribution >				Memory		C/A	Y	Y
				34 / 19		41 / 16	Y	Y
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				Y		Y		
9. Question content conforms to specific K/A statements in the previously approved examination outline and is appropriate for the K/A statements' assigned tier; deviations are justified.				Y		Y		
10. Question psychometric quality and format meet the instructions and guidelines in ES-4.2.				Y		Y		
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.				Y		Y		
Printed Name/Signature						Date		
a. Author	Thomas Setzer	<i>Thomas C. Setzer</i>				7/25/2022		
b. Facility Reviewer (*)	not applicable	not applicable				not applicable		
c. NRC Reviewer (#)	Brian Fuller	<i>B Fuller</i>				7/25/2022		
NRC Chief Examiner	Thomas Setzer	<i>Thomas C. Setzer</i>				7/25/2022		
NRC Regional Supervisor	Don Jackson	<i>Donald E. Jackson</i>				7/25/2022		
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Events and Evolutions Checklist

Form 3.4-1

Facility: CCNPP		Date of Exam: 7/11/2022										Operating Test #: 2022						
A P P L I C A N T	E V E N T  T Y P E	Scenarios																
		1			2			3			4 (SPARE)			T O T A L	MINIMUM (*)			
		POSITION			POSITION			POSITION			POSITION				R	I	U	
		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					
Scenario Rollup	RX		1			5	5					3	3		1	1	0	
	NOR	1													1	1	1	
	I/C	2,3,4 5,6,7 8	4,5,6 7	2,3,7, 8	1,2,3 4,5,6	1,3,6	2,4,6					1,2,3 4,5,6	4,5,6	1,2,4 6		4	4	2
	MAJ	9	9	9	7	7	7					7	7	7		2	2	1
	Man. Ctrl		4	8		3	4						5	1		1	1	0
	TS	2,3				2,5							2,3			0	2	2
RO-1	RX					5									1	1	1	0
	NOR														0	1	1	1
	I/C			2,3,7, 8		1,3,6									7	4	4	2
	MAJ			9		7									2	2	2	1
	Man. Ctrl			8		3									2	1	1	0
	TS														0	0	2	2
RO-2	RX					5									1	1	1	0
	NOR														0	1	1	1
	I/C			2,3,7, 8		1,3,6									7	4	4	2
	MAJ			9		7									2	2	2	1
	Man. Ctrl			8		3									2	1	1	0
	TS														0	0	2	2
RO-3	RX					5									1	1	1	0
	NOR														0	1	1	1
	I/C			2,3,7, 8		1,3,6									7	4	4	2
	MAJ			9		7									2	2	2	1
	Man. Ctrl			8		3									2	1	1	0
	TS														0	0	2	2
SROU-1	RX					5									1	1	1	0
	NOR	1													1	1	1	1
	I/C	2,3,4 5,6,7 8					2,4,6								10	4	4	2
	MAJ	9					7								2	2	2	1
	Man. Ctrl						4								1	1	1	0
	TS	2,3													2	0	2	2

Events and Evolutions Checklist

Form 3.4-1

SROI-1	RX		1															<b>1</b>	1	1	0	
	NOR																		<b>0</b>	1	1	1
	I/C		4,5,6 7		1,2,3 4,5,6														<b>10</b>	4	4	2
	MAJ		9		7														<b>2</b>	2	2	1
	Man. Ctrl		4																<b>1</b>	1	1	0
	TS				2,5														<b>2</b>	0	2	2
SROI-2	RX		1																<b>1</b>	1	1	0
	NOR																		<b>0</b>	1	1	1
	I/C		4,5,6 7		1,2,3 4,5,6														<b>10</b>	4	4	2
	MAJ		9		7														<b>2</b>	2	2	1
	Man. Ctrl		4																<b>1</b>	1	1	0
	TS				2,5														<b>2</b>	0	2	2
SROI-3	RX		1																<b>1</b>	1	1	0
	NOR																		<b>0</b>	1	1	1
	I/C		4,5,6 7		1,2,3 4,5,6														<b>10</b>	4	4	2
	MAJ		9		7														<b>2</b>	2	2	1
	Man. Ctrl		4																<b>1</b>	1	1	0
	TS				2,5														<b>2</b>	0	2	2
SROI-4	RX						5												<b>1</b>	1	1	0
	NOR	1																	<b>1</b>	1	1	1
	I/C	2,3,4 5,6,7, 8					2,4,6												<b>10</b>	4	4	2
	MAJ	9					7												<b>2</b>	2	2	1
	Man. Ctrl						4												<b>1</b>	1	1	0
	TS	2,3																	<b>2</b>	0	2	2
SROI-5	RX						5												<b>1</b>	1	1	0
	NOR	1																	<b>1</b>	1	1	1
	I/C	2,3,4 5,6,7 8					2,4,6												<b>10</b>	4	4	2
	MAJ	9					7												<b>2</b>	2	2	1
	Man. Ctrl						4												<b>1</b>	1	1	0
	TS	2,3																	<b>2</b>	0	2	2