

# V. C. SUMMER NUCLEAR STATION

**EXAM NO. 50-395/2000-301**  
**AUGUST 7 - 11, 2000**

## Administrative Documents

(Yellow Paper)

Written Exam Quality Checklist . . . . .	ES-401-7
Operating Test Quality Check Sheet . . . . .	ES-301-3
Simulator Scenario Quality Checklist . . . . .	ES-301-4
Transient and Event Checklist . . . . .	ES-301-5
Competencies Checklist . . . . .	ES-301-6
Written Exam Grading Quality Checklist . . . . .	ES-403-1
Post-Examination Check Sheet . . . . .	ES-501-1

Facility: <u>SUMMER</u>		Date of Exam: <u>8/11/00</u>		Exam Level: <u>RO/SRO</u>	
Item Description	Initial				
	a	b*	c*		
1. Questions and answers technically accurate and applicable to facility	Mean	-	ME		
2. a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available	Mean	-	ME		
3. RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401	Mean	-	ME		
4. No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC	Other	Mean - ME		
	5				
5. [No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]	-	-	-		
6. Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New	Mean - ME	
	33	9	58		
7. Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory		CIA	Mean - ME	
	43		57		
8. References/handouts provided do not give away answers	Mean	-	ME		
9. Question distribution meets previously approved examination outline; deviations are justified	Mean	-	ME		
10. Question psychometric quality and format meet ES, Appendix B, guidelines	Mean	-	ME		
11. The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet	Mean	-	ME		
Printed Name / Signature			Date		
a. Author	<u>MARK S. MILLER / Mark Miller</u>		<u>7/17/00</u>		
b. Facility Reviewer(**)	<u>N/A</u>				
c. NRC Chief Examiner(**)	<u>MIKE ERNSTES / Mike Ernstes</u>		<u>7/17/00</u>		
d. NRC Regional Supervisor(**)	<u>George T. Hopper / George T. Hopper</u>		<u>8/3/00</u>		
<p>Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.                  # See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.                  [ ] The items in brackets do not apply to NRC-prepared examinations.</p>					

Facility: <u>SUMMER</u>		Date of Exam: <u>8/11/00</u>		Exam Level: RO(SRO)	
Item Description	Initial				
	a	b*	c*		
1. Questions and answers technically accurate and applicable to facility	mean	-	ME		
2. a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available	mean	-	ME		
3. RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401	mean	-	ME		
4. No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	NRC	Other	mean - ME		
	6				
5. [No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]	-	-	-		
6. Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank	Modified	New	mean - ME	
	29	7	64		
7. Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory		CIA	mean - ME	
	59		41		
8. References/handouts provided do not give away answers	mean	-	ME		
9. Question distribution meets previously approved examination outline; deviations are justified	mean	-	ME		
10. Question psychometric quality and format meet ES, Appendix B, guidelines	mean	-	ME		
11. The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet	mean	-	ME		
		Printed Name / Signature		Date	
a. Author	<u>Mark Miller</u> / MARK MILLER		<u>7/19/00</u>		
b. Facility Reviewer(**)	<u>N/A</u>				
c. NRC Chief Examiner(**)	<u>MIKE ERNSTES</u> / Mike Ernestes		<u>7/17/00</u>		
d. NRC Regional Supervisor(**)	<u>George T. Hopper</u> / George T. Hopper		<u>8/3/00</u>		
<p>Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.                  # See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.                  [ ] The items in brackets do not apply to NRC-prepared examinations.</p>					

Facility:	Date of Examination:	Operating Test Number:
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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).	MSM	-	ME
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	MSM	-	ME
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	MSM	-	ME
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	MSM	-	ME
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	MSM	-	ME

**2. WALK-THROUGH (CATEGORY A & B) 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>· validated time limits (average time allowed for completion) and specific designation if deemed to be time critical by the facility licensee</li> <li>· 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>	MSM	-	ME
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	MSM	-	ME
c.	Repetition from operating tests used during the previous licensing examination is within acceptable limits (30% for the walk-through) and do not compromise test integrity.	MSM	-	ME
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	MSM	-	ME

**3. SIMULATOR (CATEGORY C) CRITERIA**

a.	The associated simulator operating tests (scenario sets) have been reviewed in accordance with Form ES-301-4 and a copy is attached.	MSM	-	ME
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	Printed Name / Signature	Date
a. Author	MARK S. MILLER	8/2/00
b. Facility Reviewer(*)	NA	-
c. NRC Chief Examiner (*)	MIKE ERNSTES	8/3/00
d. NRC Supervisor (*)	B.T. Hopper	8/3/00

(\*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.

Facility: Summer		Date of Exam:		Scenario Numbers: 1/2		Operating Test No.:		
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.	MEW	-	ME				
2.	The scenarios consist mostly of related events.	MEW	-	ME				
3.	Each event description consists of . 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)	MEW	-	ME				
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.	MEW	-	ME				
5.	The events are valid with regard to physics and thermodynamics.	MEW	-	ME				
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.	MEW	-	ME				
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.	MEW	-	ME				
8.	The simulator modeling is not altered.	MEW	-	ME				
9.	The scenarios have been validated. Any open simulator performance deficiencies have been evaluated to ensure that functional fidelity is maintained while running the planned scenarios.	MEW	-	ME				
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.4 of ES-301.	MEW	-	ME				
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).	MEW	-	ME				
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).	MEW	-	ME				
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.	MEW	-	ME				
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)		Actual Attributes		-	-	-	-	
1.	Total malfunctions (5-8)	5	1	5	1	MEW	ME	
2.	Malfunctions after EOP entry (1-2)	3	1	2	1	MEW	ME	
3.	Abnormal events (2-4)	2	1	2	1	MEW	ME	
4.	Major transients (1-2)	1	1	1	1	MEW	ME	
5.	EOPs entered/requiring substantive actions (1-2)	2	1	2	1	MEW	ME	
6.	EOP contingencies requiring substantive actions (0-2)	1	1	1	1	MEW	ME	
7.	Critical tasks (2-3)	2	1	1	1	MEW	ME	

OPERATING TEST NO.:

Applicant Type	Evolution Type	Minimum Number	Scenario Number			
			1	2	3	4
RO	Reactivity	1	1			
	Normal	1		1		
	Instrument	2	2	3 <sup>2</sup>		
	Component	2	3	4 <sup>2</sup>		
	Major	1	4	4 <sup>5</sup>		
As RO	Reactivity	1	1			
	Normal	0				
	Instrument	1	2			
	Component	1	3			
	Major	1	4			
SRO-I						
As SRO	Reactivity	0				
	Normal	1		1		
	Instrument	1		3 <sup>2</sup>		
	Component	1		4 <sup>3</sup>		
	Major	1		5 <sup>4</sup>		
SRO-U	Reactivity	0				
	Normal	1	1	1		
	Instrument	1	2	3 <sup>2</sup>		
	Component	1	3	4 <sup>3</sup>		
	Major	1	4	5 <sup>4</sup>		

- Instructions: (1) Enter the operating test number and Form ES-D-1 event numbers for each evolution type.  
 (2) Reactivity manipulations may be conducted under normal or *controlled* abnormal conditions (refer to Section D.4.d) but must be significant per Section C.2.a of Appendix D.

Author: M. J. Miller 8/2/00  
 Chief Examiner: M. J. Miller 8/3/00

Competencies	Applicant #1 RO/SRO-I/SRO-U				Applicant #2 RO/SRO-I/SRO-U				Applicant #3 RO/SRO-I/SRO-U			
	SCENARIO				SCENARIO				SCENARIO			
	1	2	3	4	1	2	3	4	1	2	3	4
Understand and Interpret Annunciators and Alarms	2,3,4	2,3,4,5			2,3,4	2,3,4,5			2,3,4	2,3,4,5		
Diagnose Events and Conditions	2,3,4	4,5			2,3,4	3,4,5			2,3,4	3,4,5		
Understand Plant and System Response	2,3,4	4,5			2,3,4	3,4,5			2,3,4	3,4,5		
Comply With and Use Procedures (1)	1,2,3,4	2,3,4,5			1,2,3,4	1,2,3,4,5			1,2,3,4	1,2,3,4,5		
Operate Control Boards (2)	1,2,3,4	1,3,4,5			1,2,3,4							
Communicate and Interact With the Crew	1,2,3,4	1,2,3,4,5			1,2,3,4	1,2,3,4,5			1,2,3,4	1,2,3,4,5		
Demonstrate Supervisory Ability (3)					1,3,4	1,4,5			1,3,4	1,4,5		
Comply With and Use Tech. Specs. (3)					1,2	1,2			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:

Circle 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.

Author: Mark Miller 1/19/02

Chief Examiner: Mike Punter 8/13/00

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initials		
				a	b	c
1.	Answer key changes and question deletions justified and documented			MESM		ME
2.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)			MESM		ME
3.	Grading for all borderline cases (80% +/- 2%) reviewed in detail			MESM		ME
4.	All other failing examinations checked to ensure that grades are justified			MESM		ME
5.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants			MESM		ME
				Printed Name / Signature		Date
a.	Grader			<u>Mark Miller</u>		<u>8/25/00</u>
b.	Facility Reviewer(*)			<u>N/A</u>		<u>—</u>
c.	NRC Chief Examiner (*)			<u>MIKE ERNSTES / Mike Ernestes</u>		<u>8/25/00</u>
d.	NRC Supervisor (*)			<u>MIKE ERNSTES / Mike Ernestes</u>		<u>9/15/00</u>
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.						



Facility: V. C. Summer		Date of Examination: August 11, 2000
Task Description		Date Complete
1.	Facility written exam comments or graded exams received and verified complete	WESON 8/25/00
2.	Facility written exam comments reviewed and incorporated and NRC grading completed, if necessary	WESON 8/25/00
3.	Operating tests graded by NRC examiners	WESON 8/25/00
4.	NRC Chief examiner review of written exam and operating test grading completed	MZ 8/25/00
5.	Responsible supervisor review completed	
6.	Management (licensing official) review completed	
7.	License and denial letters mailed	9/5 + 26/00
8.	Facility notified of results	9/5 + 26/00
9.	Examination report issued (refer to NRC MC 0610)	9/15/00
10.	Reference material returned after final resolution of any appeals	