

# COVER SHEET

SURRY RETAKE EXAM  
50-280, 281/2001-301  
APRIL 2, 2001 (WRITTEN) &  
APRIL 16-17, 2001 (ADMIN)

## -- ADMINISTRATIVE DOCUMENTS -- ALL IN ONE ADAMS DOCUMENT

- ES-201-1 - Exam Preparation Checklist
- ES-201-2 - Exam Outline Quality Checklist
- ES-201-3 - Exam Security Agreements
- ES-301-1 - Admin Topics Outline
- ES-301-2 - Control Room Systems & Facility  
Walk-through Test Outline
- ES-301-3 - Operating Test Quality Checklist
- ES-301-4 - Simulator Scenario Quality Checklist
- ES-301-5 - Transient & Event Checklist
- ES-301-6 - Competencies Checklist

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- ES-401-7 - Written Exam Quality Checklist
- ES-401-9 - Written Exam Review Worksheet
- ES-403-1 - Written Exam Grading Quality Checklist
- ES-501-1 - Post Exam Check Sheet

Facility: Surry Date of Examination: 4/1/01  
 Examinations Developed by: Facility / NRC (circle one)

Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	jsm
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	jsm
-120	3. Facility contact briefed on security & other requirements (C.2.c)	jsm
-120	4. Corporate notification letter sent (C.2.d)	jsm
[-90]	[5. Reference material due (C.1.e; C.3.c)]	N/A
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	jsm
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	jsm
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	jsm
-30	9. Preliminary license applications due (C.1.i; C.2.g; ES-202)	jsm
-14	10. Final license applications due and assignment sheet prepared (C.1.i; C.2.g; ES-202)	jsm
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	jsm
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	jsm
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	jsm
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	jsm
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	jsm
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	jsm

\* Target dates are keyed to the examination date identified in the corporate notification letter. They are for planning purposes and may be adjusted on a case-by-case basis in coordination with the facility licensee.  
 [ ] Applies to examinations prepared by the NRC.

ES-201

Examination Outline  
Quality Checklist

Form ES-201-2

Facility:		Date of Examination:		
Item	Task Description	Initials		
		a	b*	c
W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	N/A	N/A	N/A
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.	N/A	N/A	N/A
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	N/A	N/A	N/A
	d. Assess whether the repetition from previous examination outlines is excessive.	N/A	N/A	N/A
S I M	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, and major transients.	N/A	N/A	N/A
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity; ensure each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s)*, and scenarios will not be repeated over successive days.	N/A	N/A	N/A
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	N/A	N/A	N/A
W / T	a. Verify that: (1) the outline(s) contain(s) the required number of control room and in-plant tasks, (2) no more than 30% of the test material is repeated from the last NRC examination, (3)* no tasks are duplicated from the applicants' audit test(s), and (4) no more than 80% of any operating test is taken directly from the licensee's exam banks.	M	A	SM
	b. Verify that: (1) the tasks are distributed among the safety function groupings as specified in ES-301, (2) one task is conducted in a low-power or shutdown condition, (3) 40% of the tasks require the applicant to implement an alternate path procedure, (4) one in-plant task tests the applicant's response to an emergency or abnormal condition, and (5) the in-plant walk-through requires the applicant to enter the RCA.	N/A	N/A	N/A
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	M	A	SM
	d. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on successive days.	M	A	SM
G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	M	A	SM
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	M	A	SM
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	M	A	SM
	d. Check for duplication and overlap among exam sections.	M	A	SM
	e. Check the entire exam for balance of coverage.	M	A	SM
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	M	A	SM
a. Author	Bill Marshall / <i>Bill Marshall</i>			Date: 4/12/01
b. Facility Reviewer(*)	Ken Carover / <i>Ken Carover</i>			4/12/01
c. Chief Examiner	LARRY MELLON / <i>Larry Mellon</i>			4/12/01
d. NRC Supervisor	MIKE ERNSTES / <i>Mike Ernestes</i>			4/12/01

(\*) Not applicable for NRC-developed examinations.

Facility <u>Surry</u>		Date of Examination: <u>3/29/99-4/15/99</u>
Examination Level (circle one): <b>SROU/SPO</b>		Operating Test Number: <u>00-1 Re-exam</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	<b>2.1.7</b> Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation.	(JPM) Determine boration requirements for a load reduction with rod motion.
	<b>2.1.20</b> Ability to execute procedure steps.	(JPM) Evaluate Critical Safety Function Status.
A.2	<b>2.2.1</b> Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.	(JPM) Determine estimated Critical Position using a 1/M plot.
A.3	<b>2.3.4</b> Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	(Question) Given a RWP, determine ability to perform a job.
		(Question) Given a RWP determine personnel restrictions from performing a task.
A.4	<b>2.4.41</b> Knowledge of EAL thresholds and classifications.	(Question) Classify an event.
	<b>2.4.42</b> Knowledge of the emergency response facilities.	(Question) Time limits to accomplish various Emergency Response Facility functions.

Facility:		Date of Examination:		Operating Test Number:		
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).	M	A	JM		
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	N/A	N/A	JM		
c.	The operating test shall not duplicate items from the applicants' audit test(s) (see Section D.1.a).	M	A	JM		
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	M	A	JM		
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	M	A	JM		
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>	M	A	JM		
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	M	A	JM		
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.	M	A	JM		
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	M	A	JM		
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.	N/A	A	N/A		
		Printed Name / Signature		Date		
a.	Author	BILL MARSHALL / <i>Bill Marshall</i>		3/20/01		
b.	Facility Reviewer(*)	Ken Grover / <i>Ken Grover</i>		3/20/01		
c.	NRC Chief Examiner (*)	LARRY MELLER / <i>L.S. Meller</i>		3/30/01		
d.	NRC Supervisor (*)	MIKE ERNSTES / <i>Mike Estes</i>		4/12/01		
(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.						

Facility: _____		Date of Exam: _____		Scenario Numbers: / /		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.						
2.	The scenarios consist mostly of related events.						
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)						
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.						
5.	The events are valid with regard to physics and thermodynamics.						
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.						
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.						
8.	The simulator modeling is not altered.						
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.						
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.						
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).						
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).						
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.						
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)				Actual Attributes		--	--
1.	Total malfunctions (5-8)			/	/		
2.	Malfunctions after EOP entry (1-2)			/	/		
3.	Abnormal events (2-4)			/	/		
4.	Major transients (1-2)			/	/		
5.	EOPs entered/requiring substantive actions (1-2)			/	/		
6.	EOP contingencies requiring substantive actions (0-2)			/	/		
7.	Critical tasks (2-3)			/	/		

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers technically accurate and applicable to facility			M	A	MSM
2.	a. NRC K/As referenced for all questions * b. Facility learning objectives referenced as available			M	A	MSM
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401			N/A	N/A	MSM
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	M	A	MSM
		0	0			
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]			M	A	MSM
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	M	A	MSM
		10 ROD	3 ROD			
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	M	A	MSM
		510 4149	5970 5151			
8.	References/handouts provided do not give away answers			M	A	MSM
9.	Question distribution meets previously approved examination outline; deviations are justified			M	A	MSM
10.	Question psychometric quality and format meet ES, Appendix B, guidelines			M	A	MSM
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet			M	A	MSM
		Printed Name / Signature				Date
a. Author	Bill Marshall / W Marshall				3/20/01	
b. Facility Reviewer(*)	Ken Grover / K Grover				3/20/01	
c. NRC Chief Examiner(*)	Mark Miller / M Miller				3/29/01	
d. NRC Regional Supervisor(*)	MIKE ERNSTES / Mike Ernstes				3/30/01	
<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>						

\* Objective Id supplied w/ Reference on as needed basis per Chief Examiners.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward		
1	F	2										S	New . Does the word "long Term" need to be in the first distractor the stem to make "A" incorrect? <i>will be fixed</i>
2	H	3										S	Editorial changes from HBR exam
3	H	3										S	Editorial changes from HBR exam
4	H	4										S	Editorial changes from HBR exam
5	H	3										S	No Changes
6	H	3										S	Editorial changes from HBR exam
7	H	3										S	Editorial changes from HBR exam
8	H	3										S	Editorial changes from HBR exam
9	H	3										S	New. Where did SBLOCA in the answer come from? It is not in the question stem. <i>STET</i>
10	F	3										S	New to Surry Exam, Direct from Surry bank
11	F	3										S	Editorial changes from HBR exam.
12	H	3										S	Editorial changes from HBR exam
13	H	2										S	Editorial changes from HBR exam
14	F	3										S	Editorial changes from HBR exam
15	H	4										S	Editorial changes from HBR exam
16	F	2										S	New, Is this information that an operator should know from memory? <i>STET</i>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward			
17	F	2												New, There are no correct answers, as written. 1-OP-RC-001 requires a pressure greater than 300 On PI-1-403. Alter stem to state pressure on 1-RC-PI-1485, or change one answer to a pressure GREATER than 300. 205, 213, 303
18	H	3										S		Editorial changes from HBR exam
19	H	4										S		Editorial changes from HBR exam
20	F	2										S		Editorial changes from HBR exam
21	F	3										S		Editorial changes from HBR exam
22	F	3										S		Editorial changes from HBR exam
23	F	2										S		Editorial changes from HBR exam. Does the stem need to say "the unit 1" control room has filled...? STET
24	H	3										S		Editorial changes from HBR exam
25	F	1										S		Editorial changes from HBR exam
26	F	2										S		Editorial changes from HBR exam
27	H	3										S		Editorial changes from HBR exam
28	F	2												Modified. Editorial changes from HBR exam. Per AP-1.0 is the correct answer place the ROD BANK SELECTOR switch in MANUAL and verify rod motion -STOPPED a step that is required before the reactor is tripped? Since that step is an RNO? STET
29	F	2										S		Editorial changes from HBR exam
30	H	4										S		Editorial changes from HBR exam
31	H	3										S		New Question.
32	F	2										S		New Question, with references provided, this is not a higher order question

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward		
33	F	3										S	Editorial changes from HBR exam. Is this required RO knowledge at Surry?
34	F	3									X	S	New Question. Normally we don't write many question that state which of the following have NOT occurred.
35	H	3										S	Editorial changes from HBR exam
36	H	3										S	New Question.
37	H	3										S	Editorial changes from HBR exam
38	F	2										S	Editorial changes from HBR exam
39	F	3										S	New Question
40	F	2										S	Editorial changes from HBR exam
41	H	3										S	New Question.
42	H	3										S	Editorial changes from HBR exam
43	H	4										S	Editorial changes from HBR exam
44	F	3										S	Duplicate of HBR Question
45	F	3										S	New Question.
46	H	4										S	New Question.
47	F	3										S	New Question
48	H	3										S	Editorial changes from HBR exam
49	H	3										S	Duplicate of HBR Question
50	H	3										S	Editorial changes from HBR exam
51	H	3										S	Editorial changes from HBR exam
52	H	3										S	Duplicate of HBR Question
53	H	3										S	Duplicate of HBR Question

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward		
54	H	3										S	Editorial changes from HBR exam
55	F	2										S	New Question
56	H	3										S	Editorial changes from HBR exam
57	F	3										S	New to Surry Exam, Direct from Surry bank
58	F	3											New to Surry Exam, Direct from Surry bank. The stem states that the Normal Supply is racked in. The justification states that the alternate power supply is racked in. One of these is incorrect. <i>SKET</i>
59	F	3										S	Editorial changes from HBR exam
60	F	3										S	Editorial changes from HBR exam
61	F	2										S	New Question. Normally we don't write many question that state which of the following have NOT occurred.
62	H	3										S	Editorial changes from HBR exam
63	F	2										S	New Question
64	F	2										S	New to Surry Exam, Direct from Surry bank
65	F	3										S	Duplicate of HBR Question
66	F	2										S	New to Surry Exam, Modified from Surry bank
67	H	3										S	New to Surry Exam, Modified from Surry bank
68	F	3										S	Editorial changes from HBR exam
69	H	3										S	New to Surry Exam, Direct from Surry bank
70	H	4										S	Editorial changes from HBR exam
71	F	2										S	New to Surry Exam, Direct from Surry bank
72	F	3										S	New to Surry Exam, Direct from Surry bank

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward			
73	F	2						X						New to Surry Exam, Direct from Surry bank. This question appears to be an SRO topic. <i>STET</i>
74	F	3											S	Editorial changes from HBR exam
75	F	3											S	Editorial changes from HBR exam
76	H	3											S	New to Surry Exam, Modified from Surry bank
77	F	2											S	Editorial changes from HBR exam. Normally we don't write many question that state which of the following is NOT a source of water.
78	H	3											S	Editorial changes from HBR exam
79	H	3											S	Editorial changes from HBR exam
80	H	3											S	New to Surry Exam, Direct from Surry bank
81	H	3											S	Editorial changes from HBR exam
82	F	2											S	Editorial changes from HBR exam
83	F	1											S	New to Surry Exam, Direct from Surry bank
84	F	2											S	New to Surry Exam, Direct from Surry bank
85	H	3											S	New to Surry Exam, Direct from Surry bank
86	H	3											S	Editorial changes from HBR exam
87	H	3												New Question. No correct answers. Stem states that pressurizer level is held constant. The method normal used to control pressurizer level is indication. So if indication remained constant, then mass would have decreased. I think what you are asking here is "if pressurizer water mass remained constant." <i>STET</i>
88	H	3											S	Editorial changes from HBR exam
89	H	3											S	New Question

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. U/E/S	6. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward		
90	F	3										S	Editorial changes from HBR exam
91	H	3										S	Editorial changes from HBR exam
92	H	3										S	Editorial changes from HBR exam
93	H	3										S	Editorial changes from HBR exam
94	F	3										S	Editorial changes from HBR exam
95	H	3										S	Editorial changes from HBR exam
96	F	3										S	Duplicate of HBR Question
97	F	2										S	New to Surry Exam, Direct from Surry bank
98	F	3										S	New to Surry Exam, Direct from Surry bank
99	H	3										S	Editorial changes from HBR exam
100	F	2										S	Editorial changes from HBR exam

49F 51C/A

Facility:	Date of Exam:	Exam Level: RO/SRO		
Item Description		Initials		
		a	b	c
1.	Answer key changes and question deletions justified and documented	<i>EW</i>		<i>FSM</i>
2.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)	<i>EW</i>		<i>FSM</i>
3.	Grading for all borderline cases (80% +/- 2%) reviewed in detail	<i>EW</i>		<i>FSM</i>
4.	All other failing examinations checked to ensure that grades are justified	<i>EW</i>		<i>FSM</i>
5.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants	<i>EW</i>		<i>FSM</i>
Printed Name / Signature		Date		
a. Grader	<u>STEVEN D. ROSE</u> / <i>[Signature]</i>	<u>4/10/01</u>		
b. Facility Reviewer(*)	_____	_____		
c. NRC Chief Examiner (*)	<u>Jerry S. Mellen</u> / <i>[Signature]</i>	<u>4/10/01</u>		
d. NRC Supervisor (*)	<u>MIKE ERNSTES</u> / <i>[Signature]</i>	<u>4/10/01</u>		
(*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.				