

**NORTH ANNA EXAM 50-338/2000-301  
SEPTEMBER 14 - 21, 2000**

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**COVER SHEET -- FINAL SUBMITTAL  
ADMINISTRATIVE DOCUMENTS IN  
ONE ADAMS DOCUMENT**

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- 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 and 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
- 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: <u>North Anna Nuclear Plant</u> Date of Exam: <u>September 18-29, 2000</u>		
Examinations Developed by: Written: Facility Operating: NRC		
Target Date*	Task Description / Reference	Chief Examiner's Initials
-180	1. Examination administration date confirmed (C.1.a; C.2.a & b)	grfa
-120	2. NRC examiners and facility contact assigned (C.1.d; C.2.e)	grfa
-120	3. Facility contact briefed on security & other requirements (C.2.c)	grfa
-120	4. Corporate notification letter sent (C.2.d)	grfa
[-90]	[5. Reference material due (C.1.e; C.3.c)]	grfa
-75	6. Integrated examination outline(s) due (C.1.e & f; C.3.d)	grfa
-70	7. Examination outline(s) reviewed by NRC and feedback provided to facility licensee (C.2.h; C.3.e)	grfa
-45	8. Proposed examinations, supporting documentation, and reference materials due (C.1.e, f, g & h; C.3.d)	grfa
-30	9. Preliminary license applications due (C.1.i; C.2.g; ES-202)	grfa
-14	10. Final license applications due and assignment sheet prepared (C.1.i; C.2.g; ES-202)	grfa
-14	11. Examination approved by NRC supervisor for facility licensee review (C.2.h; C.3.f)	grfa
-14	12. Examinations reviewed with facility licensee (C.1.j; C.2.f & h; C.3.g)	grfa
-7	13. Written examinations and operating tests approved by NRC supervisor (C.2.i; C.3.h)	grfa
-7	14. Final applications reviewed; assignment sheet updated; waiver letters sent (C.2.g, ES-204)	grfa
-7	15. Proctoring/written exam administration guidelines reviewed with facility licensee and authorization granted to give written exams (if applicable) (C.3.k)	grfa
-7	16. Approved scenarios, job performance measures, and questions distributed to NRC examiners (C.3.i)	grfa
<p>* 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.</p> <p>[ ] Applies only to examinations prepared by the NRC.</p>		

Facility: North Anna Nuclear Plant		Date of Examination: September 18 - 22,, 2000		
Item	Task Description	Initials		
		a	b*	c
W R I T T E N	1. a. Verify that the outline(s) fit(s) the appropriate model per ES-401.	RSB		RSB
	b. Assess whether the outline was systematically prepared and whether all knowledge and ability categories are appropriately sampled.	RSB		RSB
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	RSB		RSB
	d. Assess whether the repetition from previous examination outlines is excessive.	RSB		RSB
S I M	2. 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.	RSB		RSB
	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.	RSB		RSB
	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.	RSB		RSB
W / T	3. 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.	RSB		RSB
	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.	RSB		RSB
	c. Verify that the required administrative topics are covered, with emphasis on performance-based activities.	RSB		RSB
	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.	RSB		RSB
G E N E R A L	4. a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam section.	RSB		RSB
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	RSB		RSB
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	RSB		RSB
	d. Check for duplication and overlap among exam sections.	RSB		RSB
	e. Check the entire exam for balance of coverage.	RSB		RSB
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	RSB		RSB
a. Author	<u>Ronald F. Aiello</u>	Printed Name / Signature	<u>8/24/00</u>	Date
b. Facility Reviewer(*)				
c. Chief Examiner	<u>Ronald F. Aiello (North Anna)</u>	<u>Rick Baldwin (Surry)</u>	<u>8/24/00</u>	<u>8/24/00</u>
d. NRC Supervisor	<u>Mike Ernestes</u>	<u>Mike Ernestes</u>	<u>8/24/00</u>	
(*) Not applicable for NRC-developed examinations.				

Facility: North Anna Power Station Exam Level: RO / SRO		Date of Examination: 9/18 – 21/00 Operating Test Number: 1
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Shift staffing requirements (Both) (NEW)	JPM: Evaluate overtime eligibility
	Plant parameters verification (Both) (BANK)	JPM: Determine shutdown margin by hand calculation
A.2	Tagging and clearances (Both) (NEW)	JPM: Determine if tagging boundaries are adequate
A.3	Radiation exposure limits (Both) (NEW)	JPM: Assess personnel exposure to determine if/how RHR inlet valve can be opened
A.4	Emergency communications (RO Only) (NEW)	JPM: Meteorological and stability class determination
	Emergency protective action recommendations (SRO Only) (BANK)	JPM: Determine protective action recommendations (PAR)

Facility: North Anna Nuclear Plant  
Exam Level : RO, SROi, **SROu**

Date of Examination: 9/18-21/00  
Operating Test No.: \_\_\_1\_\_\_

### B.1 Control Room Systems

	System / JPM Title	Type Code*	Safety Function
a	<b><i>(Rod Control) Retrieve a dropped rod</i></b>	M,A,S	I
b.	<b><i>(ESFAS) Restore plant equipment following SI</i></b>	D,S,L	II
c.	(ECCS) Terminate SI following imminent FR-P.1	D,S,L	III
d.	(RCS) Perform NC with steam void in RV W/O RVLIS	D,S,L	IVp
e.	<b><i>(PRT) Drain the pressurizer relief tank</i></b>	M,A,,S	V
f.	(MTGS) Perform a turbine valve freedom test	M,A,S	IVs
g.	(FPS) Evacuate the control room due to a fire	M,A,,S	VIII

### B.2 Facility Walk-Through

a.	<b><i>(RCPS) Isolate RCP seals</i></b>	D,R,EOP,	IV
b.	<b><i>(Elect) Transfer vital bus from inverter to Sola T</i></b>	D	VI
c.	(SDP) Maintain stable plant conditions from the ASDP	D, AOP	I

\* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA, *Italics* and **bold** are SROu JPMs

Facility: North Anna		Date of Examination: (9/18-21/00) Operating Test Number: 1		
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).	b		KAS
b.	There is no day-to-day repetition between this and other operating tests to be administered during this examination.	b		KAS
c.	The operating test shall not duplicate items from the applicants' audit test(s)(see Section D.1.a).	b		KAS
d.	Overlap with the written examination and between operating test categories is within acceptable limits.	b		KAS
e.	It appears that the operating test will differentiate between competent and less-than-competent applicants at the designated license level.	b		KAS
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>	b		KAS
b.	The prescribed questions in Category A are predominantly open reference and meet the criteria in Attachment 1 of ES-301.	b		KAS
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.	b		KAS
d.	At least 20 percent of the JPMs on each test are new or significantly modified.	b		KAS
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.	b		KAS
Printed Name / Signature		Date		
a. Author	<u>Ronald F. Aiello</u>	<u>8/24/00</u>		
b. Facility Reviewer(*)	<u>N/A</u>			
c. NRC Chief Examiner (*)	<u>Richard S. Baldwin (Surry Chief)</u>	<u>8/24/00</u>		
d. NRC Supervisor (*)	<u>M. ERNSTES Harold O. Christensen</u>	<u>9/11/00</u>		
(*) The facility signature is not applicable for NRC-developed tests; two independent NRC reviews are required.				

Facility: North Anna		Date of Exam: 9/18-21/00		Scenario Numbers: 1 / 2 /		Operating Test No.:1	
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.			0		MS	
2.	The scenarios consist mostly of related events.			0		MS	
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)			0		MS	
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.			0			
5.	The events are valid with regard to physics and thermodynamics.			0		MS	
6.	Sequencing and timing of events is reasonable, and allows the examination team to obtain complete evaluation results commensurate with the scenario objectives.			0		MS	
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.			0		MS	
8.	The simulator modeling is not altered.			0		MS	
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.			0		MS	
11.	All individual operator competencies can be evaluated, as verified using Form ES-301-6 (submit the form along with the simulator scenarios).			0		MS	
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).			0		MS	
13.	The level of difficulty is appropriate to support licensing decisions for each crew position.			0		MS	
TARGET QUANTITATIVE ATTRIBUTES (PER SCENARIO; SEE SECTION D.4.D)				Actual Attributes			
1.	Total malfunctions (5-8)		7 / 6 /	0		MS	
2.	Malfunctions after EOP entry (1-2)		2 / 2 /	0		MS	
3.	Abnormal events (2-4)		2 / 2 /	0		MS	
4.	Major transients (1-2)		2 / 2 /	0		MS	
5.	EOPs entered/requiring substantive actions (1-2)		2 / 2 /	0		MS	
6.	EOP contingencies requiring substantive actions (0-2)		1 / 1 /	0		MS	
7.	Critical tasks (2-3)		2 / 3 /	0		MS	

OPERATING TEST NO.:

Applicant Type	Evolution Type	Minimum Number	Scenario Number				
			RO	1	BOP	RO 2	BOP
RO/BOP	Reactivity	1	4		0	1	0
	Normal	1	1		0	1a	1
	Instrument	2	2		5	3	2
	Component	2	3		6	4	3a
	Major	1	6		6	5	5

As RO	Reactivity	1	4		1
	Normal	0	1		1a
	Instrument	1	2		3
	Component	1	3		4
	Major	1	6		5
SRO-I					
As SRO	Reactivity	0	4		1
	Normal	1	1		1a
	Instrument	1	2		2,3
	Component	1	3		3a,4
	Major	1	6		5

SRO-U	Reactivity	0	4		1
	Normal	1	1		1a
	Instrument	1	2		2,3
	Component	1	3		3a,4
	Major	1	6		5

- 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: Ronald F. Aietto

Chief Examiner: Richard S. Baldwin

Competencies	RO/SRO-U		BOP/SRO-U		SRO-I/SRO-U	
	SCENARIO		SCENARIO		SCENARIO	
	1	2	1	2	1	2
Understand and Interpret Annunciators and Alarms	1,2,3,6,7	1,3,4,5,6,7	4,5,6,7	2,3a,5,6,7	1,2,3,4,6,7	1,2,3,3a,4,5,6
Diagnose Events and Conditions	2,3,6,7	3,4,5,6,7	5,6,7	2,3a,5,6,7	2,3,5,6,7	2,3,3a,4,5,6
Understand Plant and System Response	1,2,3,4,6,7	1,3,4,5,6,7	4,5,6,7	2,3a,5,6,7	1,2,3,4,5,6,7	1,2,3,3a,4,5,6
Comply With and Use Procedures (1)	1,2,3,4,6,7	1a,1,3,4,5,6,7	4,5,6,7	2,3a,5,6,7	1,2,3,4,6,7	1a,1,2,3,3a,4,5,6
Operate Control Boards (2)	1,2,3,4,6,7	1a,1,3,4,5,6,7	4,5,6,7	2,3a,5,6,7	N/A	N/A
Communicate and Interact With the Crew	1,2,3,4,6,7	1a,1,3,4,5,6,7	4,5,6,7	2,3a,5,6,7	1,2,3,4,6,7	1a,1,2,3,3a,4,5,6
Demonstrate Supervisory Ability (3)	N/A	N/A	N/A	N/A	1,2,3,4,6,7	1a,1,2,3,3a,4,5,6
Comply With and Use Tech. Specs. (3)	N/A	N/A	N/A	N/A	1,2,3,5	2,3,3a

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: Ronald T. Aiello

Chief Examiner: Richard S. Baldwin

Facility: <u>North Anna</u>		Date of Exam: <u>9-14-2000</u>		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers technically accurate and applicable to facility			SC	JPL	✓
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available			SC	JPL	✓
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401			SC	JPL	✓
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	SC	JPL	✓
		0	4			
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]			SC	JPL	✓
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	SC	JPL	✓
		4	7			
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	C/A	SC	JPL	✓
		42	58			
8.	References/handouts provided do not give away answers			SC	JPL	✓
9.	Question distribution meets previously approved examination outline; deviations are justified			SC	JPL	✓
10.	Question psychometric quality and format meet ES, Appendix B, guidelines			SC	JPL	✓
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet			SC	JPL	✓
		Printed Name / Signature		Date		
a. Author	<u>Steven R. Crawford</u>		<u>[Signature]</u>	<u>7-12-2000</u>		
b. Facility Reviewer(*)	<u>Joseph B. Scott Jr.</u>		<u>[Signature]</u>	<u>7/12/2000</u>		
c. NRC Chief Examiner(*)	<u>Richard K. Adair</u>		<u>[Signature]</u>	<u>7/24/00</u>		
d. NRC Regional Supervisor(*)	<u>MIKE ERNSTES</u>		<u>[Signature]</u>	<u>7/11/00</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>North Anna</u>		Date of Exam: <u>9-14-2000</u>		Exam Level: <u>RO/SRO</u>		
Item Description				Initial		
				a	b*	c*
1.	Questions and answers technically accurate and applicable to facility			SC	JM	0
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available			SC	JM	0
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401			SC	JM	0
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	SC	JM	0
		0	3			
5.	[No (Less than 5 percent) question duplication from the license screening/audit exam (if independently written)]			SC	JM	0
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	SC	JM	0
		3	8			
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		SC	JM	0
		46	CIA			
8.	References/handouts provided do not give away answers			SC	JM	0
9.	Question distribution meets previously approved examination outline; deviations are justified			SC	JM	0
10.	Question psychometric quality and format meet ES, Appendix B, guidelines			SC	JM	0
11.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet			SC	JM	0
				Printed Name / Signature		Date
a. Author	<u>Stelen R. Crawford / SC Crawford</u>					<u>7-12-2000</u>
b. Facility Reviewer(*)	<u>Joseph B. Scott on / Joseph B. Scott</u>					<u>7/12/2000</u>
c. NRC Chief Examiner(*)	<u>Ronnie F. Riehl / Ronnie F. Riehl</u>					<u>7/24/00</u>
d. NRC Regional Supervisor(*)	<u>MIKE ERNSTEJ / Mike Ernst</u>					<u>9/11/00</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>						

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			
76 ✓	F	2	X										S ✓	New - Second Bullet in stem refers to ALL equipment was placed in pull to lock. The term "ALL" should be replaced by "all equipment powered from" or something similar
77	H	3											S	New
78 ✓													OK	New - The curve for subcooling equal to zero includes loop uncertainty. The correct answer is the negative sign indicates the plant is below this line and may still be subcooled or it may be saturated or superheated. There appear to be no correct answers as the question is written. I think this is OK CAP
79 ✓	F	2											S ✓	New - E-0, Reactor Trip or Safety Injection, could be moved to the stem
80 ✓	F	3						X					S ✓	New - Distractor A may be worded better "to prevent excessive cooldown" The procedural step will actually prevent the entry into FR-P.1.
81	H	3											S	New
82	H	2											S	New
83 ✓	F	2											S	New
84 ✓	C	3											S ✓	New - Remove " you have noted" from the stem
85 ✓	K					X	X						NO	New - the MSLB must be in containment. If B is correct the D must by default be correct. Perhaps a reference to a LOCA may provide more plausible material for distractors A and B. CAP

THIS AREA HAS SBD THAT IS QUANTITY

END. QUALIFIED AT 125

✓ = RGP-22

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		
<b>Instructions</b>													
[Refer to Appendix B for additional information regarding each of the following concepts.]													
1.	Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.												
2.	Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).												
3.	Check the appropriate box if a psychometric flaw is identified:												
	<ul style="list-style-type: none"> <li>• The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).</li> <li>• The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).</li> <li>• The answer choices are a collection of unrelated true/false statements.</li> <li>• More than one distractor is not credible.</li> <li>• One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).</li> </ul>												
4.	Check the appropriate box if a job content error is identified:												
	<ul style="list-style-type: none"> <li>• The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).</li> <li>• The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).</li> <li>• The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).</li> <li>• The question requires reverse logic or application compared to the job requirements.</li> </ul>												
5.	Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?												
6.	For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.												

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		
86	F	3										S	New
87	H	3										S	New
88	F	2										S	New - Please change the monitor in the stem and make A the correct answer. <i>deleted</i>
89	F	2										S	New
90	H	2										S	New
91	F*	2										S	New - Is the word "ensure" correctly used in "A". Does this not mean - if it is not that way make it that way? Would an operator be expected to <i>CAF</i> <i>change to point</i>
92	C	3										S	New
93	F	2										S	New - Add "only" to distractor D <i>only if the are others</i>
94	F	2										S	Modified - the term "team" should be eliminated from the stem and the correct answer or it should be added to all distractors <i>→ allows the determination</i>
95	F	2										S	New
96	C	3					X					S	New - distractor A is an additional correct answer - @ 0947 will be off scale low, @ 0955 level will be on scale and @ 1052 vessel level will be adequate. Stem should be worded to eliminate A as a correct answer. <i>insert "lowest" in stem</i>
97	C	2										S	New - OPAP6.4.5 states that A would be correct for remote location. If there is no possibility that some one would be unsure that the SW pump house is a remote location, as defined by this OPAP, then do not add this information to the stem. If the possibility exists, then add it to the stem. <i>CAF</i>
98	C*	3										S	New - remove cue from stem (all other delta-p readings are with in limits) list delta-p readings. <i>no not possible to know limits</i>
99	C	2										S	New
100	C*											S	New - there are no correct answers. C is not a correct answer. Manual insertion of control rods is the RNO of the previous step. It MUST be attempted prior to going to step 2, trip the turbine. Correct answer is Verify automatic control rod insertion (if not, begin manually inserting rods), then trip the turbine. The standard EOP usage guidance will provide this as an acceptable alternative. Does OPS current philosophy over rule written rules of usage for EOPs? If so leave question as written, but include new distractor written above.

SRO ONLY QUESTIONS

*deleted*

*only if the are others*

*→ allows the determination*

*insert "lowest" in stem*

*CAF*

*no not possible to know limits*

*stem already covered that CR not a distractor*

*→ "a" correct ALSO*

*Build EOL for b, c, d.*

*change to point*



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		
1	H	3										S	New Update reviewed - S
2	✓					X							New - There are no conditions under which Distractor A or C could possibly be correct. If A is correct then B is correct. If C is correct then D must be correct
3	✓	F	2			X						S	New Distractor A - entry into ES-0.0 is never "required" The wording in the stem eliminates this as a possibility. Update reviewed - did not resolve question
4	H	2										S	New
5	F	1										S	New
6	✓	F*	1									S U-U	New Update reviewed - Distractor B may now be a correct answer. TS requires forced shutdown. Forced shutdown must be reported to the operations center
7		F*	1				X					S	New Is D an incorrect answer. If an operator attempted to insert the rod, would that action be incorrect? <u>DIS NOT REC</u>
8		F	2									S	New
9		H	3									S	Modified
10		H	3									S	New
11		F	2									S	New
12		H	3									S	New
13	✓	F*	1									S	New Low level of discrimination
14	✓												New - Documents provided for stated that distractor D is a correct answer. - Feed and bleed is not intended to provide long term core cooling. It is only an interim measure until secondary heat sink can be restored OR RHR can be placed in service. There seem to be two correct answers Update reviewed - did not resolve question
15		F	2									S	New
16		F	1									S	Modified
17		H*	2									S	Bank
18		F	2									S	New

*re write A, B, C*

*change required*

*TS. 2nd (only)*

*← Applies to TS - 6.2.1*

*re write to match  
OR A. S. T. C. ...  
... 14K ...*

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		
18	H	3										(S) <i>print out</i>	New - This question assumes there was no significant activity in the secondary side, since it was not included in the stem, that assumption seems valid.
20	H	2										S	New
21	F	1										S	Modified - add enough information in the stem to set up adverse containment. Lower pressure in A to 350. A remains the correct answer. Changes question to a Higher Level and LOD to 3. Update reviewed - S Review proposed changes to alter LOD
22	H	3										S	New
23	H	3										S	New Temperature increase is due to RCPs running, under the conditions listed in the stem, will they always be running? If not the temperature may decrease because of the RHR flow. <i>Q is x BAZ. → LOSE RHR DUE TO LOSS OF EA → TEMP INCREASES</i>
24					X								New Distractors A and B seem to have nothing to do with the BIT tank.
25	H	2										S	New
26	H	2										S	New
27	F	2										S	New
28	H	3										S	New Remove (CTMT) from stem Update reviewed -S
29	F	2										S	New Normally we don't write questions that state which of the following is wrong. Details are in NUREG 1021 Appendix B 2.e Update reviewed - Modified question resolved comment
30	F	2										S	New
31	F*	2										S	New
32	H	3										S	New. While the procedure says "when the reactor is tripped" I expect that it means when the first four steps of E-0 are complete. I believe the turbine must also be tripped, before this action is complete. If this is the case, then the answer is technically not correct. There may be no correct answers. The applicant will not have the procedure in front of him and will have to reason the intent of the procedure. Update reviewed - Did not resolved question
33	H	3										S	New
34	F*	2										S	New
35	H	2										S	Modified
36	F	2										S	New
37	F	2										S	New Update reviewed - If 1-PT-24.1 page 3 is the reference provided to the applicant, this makes this fundamental question a direct look-up. Solution - provide entire procedure or provide not reference

*modified  
DICKERSON  
TO SUB*

*NO REF ACCOUNT*

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			
38	F	2										S	New	
39	F	2										S	New	
40	H	3										S	New	
41	H	3										S	New	
42	H	2										S	New	
43	F*	2										S	New	
44	F	2										S	New	
45	F	2										S	Bank	
46	H	2										S	Bank	
47	H	3										S	New	
48	H	3											New Distractor A produces the desired results, and could be argued to be partially correct. Is there an administrative procedure, ops policy or night order that states this should be done in automatic?	
49	H*	3										S	New	
50	H	2										S	New	
51	H*	3										S	New	
52	H	3										S	New	
53	F	3				X							<del>modified distractors A and B are not discriminating. See attached</del>	
54	H	3										S	New	
55	H	3				X							New Distractors A and C are not discriminating. Nothing is done in the slow direction	
56	F	2										S	New	
57	F	2										S	New	
58	F	1					X						Distractor D, while not the best answer could be argued to contribute, in that although there are fewer N-16 isotopes produced, those that are produced have such a short half life that few, if any make it to the monitor. Perhaps a replacement could be - reduced sensitivity to RCS activity and Air ejector flow rate.	
59	F*	1										S	New. Update reviewed - S	
60	H*	3										S	New	
61	F*	2										S	New	

~~modified distractors A and B are not discriminating. See attached~~

changed slow part → slow/cw

changed part. (D)

→

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		
52	F	2										S	New
53	H	3										S	New
54	H	3										S	New. Distractor A is only incorrect because a recent modification removed this indicator. Drawing must be provided for the applicant to determine this fact.
55	H	2										S	New
56	F	2										S	New
57	H	3										S	New
58	F	2				X						S	New. Replace distractor A with - Prevents potential contamination of the component cooling water system
59	F	1					X					S	Modified. If the procedure is not in hand, it would be impossible to sign off procedure steps as they were performed. This may be a partially correct answer.
70	H	3										S	New
71	F	2										S	New. Move "Remove the danger tags in accordance with an approved" to the stem
72	H /U-F	2 /U-1										S /U-S	New Update reviewed - Normally we don't write questions that state which of the following is wrong. Details are in NUREG 1021 Appendix B 2.e - Question is a lower level question than original.
73	H /U-F	2 /U-1										S /U-S	New Update reviewed - Question is a lower level question than original.
74	H	3										S	New
75	H	3										S	New

*medical*

*cause of problem in stand*

*skills of craft  
→ no procedure step*

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initials		
				a	b	c
1.	Answer key changes and question deletions justified and documented			SC	JM	Ⓟ
2.	Applicants' scores checked for addition errors (reviewers spot check > 25% of examinations)			SC	JM	Ⓟ
3.	Grading for all borderline cases (80% +/- 2%) reviewed in detail			SC	JM	Ⓟ
4.	All other failing examinations checked to ensure that grades are justified			SC	JM	Ⓟ
5.	Performance on missed questions checked for training deficiencies and wording problems; evaluate validity of questions missed by half or more of the applicants			SC	JM	Ⓟ

  

	Printed Name / Signature	Date
a. Grader	<u>Steven R. Crawford / <i>SC Crawford</i></u>	<u>9-21-2000</u>
b. Facility Reviewer(*)	<u>Joseph B. Scott / <i>JB Scott</i></u>	<u>9/21/2000</u>
c. NRC Chief Examiner (*)	<u>Ronald A. Ho / <i>R. Ho</i></u>	<u>9/27/00</u>
d. NRC Supervisor (*)	<u>MICHAEL E. ENWITES / <i>ME Enwites</i></u>	<u>10/3/00</u>

(\*) The facility reviewer's signature is not applicable for examinations graded by the NRC; two independent NRC reviews are required.

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of 9-18-00 and 9-19-00 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

To the best of my knowledge, I did not divulge to any unauthorized persons any information concerning the NRC licensing examinations administered during the week(s) of 9-18-00. From the date that I entered into this security agreement until the completion of examination administration, I did not instruct, evaluate, or provide performance feedback to those applicants who were administered these licensing examinations, except as specifically noted below and authorized by the NRC.

PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1. <u>STENON R. CRAWFORD</u>	<u>Instructor/Exam Author, Facility Rep.</u>	<u>[Signature]</u>	<u>4-11-00</u>	<u>[Signature]</u>	<u>9-22-00</u>
2. <u>TRICIA L. HICKS</u>	<u>ADMIN SUPPORT</u>	<u>[Signature]</u>	<u>5-1-00</u>	<u>[Signature]</u>	<u>9-26-00</u>
3. <u>CONNIE L. ARMSTRONG</u>	<u>ADMIN SUPPORT</u>	<u>[Signature]</u>	<u>5-1-00</u>	<u>[Signature]</u>	<u>9-22-00</u>
4. <u>JOSEPH B. SCOTT JR</u>	<u>Supervisor - Operations Training</u>	<u>[Signature]</u>	<u>5/3/00</u>	<u>[Signature]</u>	<u>9-22-00</u>
5. <u>KENNETH W. EUGER</u>	<u>simulator coordinator</u>	<u>[Signature]</u>	<u>5/22/00</u>	<u>[Signature]</u>	<u>10-11-00</u>
6. <u>ALLAN KOZAK</u>	<u>SIMULATOR COORDINATOR</u>	<u>[Signature]</u>	<u>5/22/00</u>	<u>[Signature]</u>	<u>9-25-00</u>
7. <u>SHARAO KOTIAO</u>	<u>SIMULATOR COORDINATOR</u>	<u>[Signature]</u>	<u>05/22/00</u>	<u>[Signature]</u>	<u>10/06/2000</u>
8. <u>CARL STEBBINS</u>	<u>SOFTWARE ENGINEER</u>	<u>[Signature]</u>	<u>05/22/00</u>	<u>[Signature]</u>	<u>9/26/00</u>
9. <u>Walt Shura</u>	<u>supervisor training support</u>	<u>[Signature]</u>	<u>6/2/00</u>	<u>[Signature]</u>	<u>9/26/00</u>
10. <u>MANUEL M. VALEZ JR</u>	<u>ERO - written exam validation</u>	<u>[Signature]</u>	<u>6-29-00</u>	<u>[Signature]</u>	<u>10-23-00</u>
11. <u>LEE D. KELLY</u>	<u>ERO - written exam validation</u>	<u>[Signature]</u>	<u>6/30/00</u>	<u>[Signature]</u>	<u>9/26/00</u>
12. <u>BILL STANLEY</u>	<u>ERO WRITTEN EXAM VALIDATION</u>	<u>[Signature]</u>	<u>7/1/00</u>	<u>[Signature]</u>	<u>10/6/2000</u>
13. <u>K.D. DeVos</u>	<u>SRO written exam validation</u>	<u>[Signature]</u>	<u>7-7-00</u>	<u>[Signature]</u>	<u>9/26/00</u>
14. <u>RS. KLEIMAN</u>	<u>INST / written exam validation</u>	<u>[Signature]</u>	<u>7-27-00</u>	<u>[Signature]</u>	<u>9-25-00</u>
15. <u>KENTH M. LINK</u>	<u>INST / EXAM CO-AUTHOR</u>	<u>[Signature]</u>	<u>8-4-00</u>	<u>[Signature]</u>	<u>9-22-00</u>

NOTES:

1. Pre-Examination

I acknowledge that I have acquired specialized knowledge about the NRC licensing examinations scheduled for the week(s) of Sept 18, 2000 as of the date of my signature. I agree that I will not knowingly divulge any information about these examinations to any persons who have not been authorized by the NRC chief examiner. I understand that I am not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered these licensing examinations from this date until completion of examination administration, except as specifically noted below and authorized by the NRC. Furthermore, I am aware of the physical security measures and requirements (as documented in the facility licensee's procedures) and understand that violation of the conditions of this agreement may result in cancellation of the examinations and/or an enforcement action against me or the facility licensee. I will immediately report to facility management or the NRC chief examiner any indications or suggestions that examination security may have been compromised.

2. Post-Examination

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	PRINTED NAME	JOB TITLE / RESPONSIBILITY	SIGNATURE (1)	DATE	SIGNATURE (2)	DATE NOTE
1.	SLATTERY JOHN	Shift supervisor / Scenario validator	<i>[Signature]</i>	8-14-00	<i>[Signature]</i>	9/27/00
2.	PARK TONY D	CRO / Scenario validator	<i>[Signature]</i>	8-14-00	<i>[Signature]</i>	9-27-00
3.	Kelly Lee D	CRO / Validator	<i>[Signature]</i>	8/19/00	<i>[Signature]</i>	9/27/00
4.	Lee C Baran	Instructor / Exam Co-author	<i>[Signature]</i>	8/29/00	<i>[Signature]</i>	9/24/00
5.	Diana L. Bessko	Admin Clerk / Sequencing Procedures	<i>[Signature]</i>	9/16/00	<i>[Signature]</i>	9/26/00
6.	N. L. Lang	Chief of Off Observer	<i>[Signature]</i>	9/19/00	<i>[Signature]</i>	9/22/00
7.	J. A. Shoemaker	Surrogate	<i>[Signature]</i>	9/19/00	<i>[Signature]</i>	9/26/00
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						

NOTES:

Task Description	Date Complete
1. Facility written exam comments or graded exams received and verified complete	9/27/00
2. Facility written exam comments reviewed and incorporated and NRC grading completed, if necessary	N/A
3. Operating tests graded by NRC examiners	10/06/00
4. NRC Chief examiner review of written exam and operating test grading completed	10/06/00
5. Responsible supervisor review completed	10/10/00
6. Management (licensing official) review completed	10/10/00
7. License and denial letters mailed	10/12/00
8. Facility notified of results	10/11/00
9. Examination report issued (refer to NRC MC 0610)	10/19/00
10. Reference material returned after final resolution of any appeals	N/A