

Facility: SSES		Date of Exam: March 2018		Exam Level: RO / SRO								
Item Description			Initial									
			a	b*	c*							
1. Questions and answers are technically accurate and applicable to the facility.			W	C	PS							
2. a. NRC K/As are referenced for all questions. b. Facility learning objectives are referenced as available. c. Correct answer explanation and distractor analysis provided (ES-401, D.2.g)			W	CS	PS							
3. SRO questions are appropriate in accordance with Section D.2.d of ES-401			W	CS	PS							
4. The sampling process was random and systematic. (If more than four RO or two SRO questions were repeated from the last two NRC licensing exams, consult the NRR/NRO OL program office).			W	CS	PS							
5. Question duplication from the licensee screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate. <input checked="" type="checkbox"/> The audit exam was systematically and randomly developed, or <input type="checkbox"/> the audit exam was completed before the license exam was started, or <input type="checkbox"/> the examinations were developed independently, or <input checked="" type="checkbox"/> the licensee certifies that there is no duplication, or <input type="checkbox"/> other (explain).			W	CS	PS							
6. Bank use meets limits (no more than 75% from the bank, at least 10% new, and the rest new or modified); enter the actual RO/SRO-only question distribution(s) at right.			<table border="1"> <tr> <td>Bank</td> <td>Modified</td> <td>New</td> </tr> <tr> <td>32 / 6</td> <td>15 / 9</td> <td>28 / 10</td> </tr> </table>	Bank	Modified	New	32 / 6	15 / 9	28 / 10	N/A	N/A	N/A
Bank	Modified	New										
32 / 6	15 / 9	28 / 10										
7. Between 38 and 45 questions of the questions on the RO exam and at least 13 questions of the questions on the SRO-only portion of the exam are written at the comprehension/analysis level (see ES-401, D.2.c); enter the actual RO/SRO-only question distribution(s) at right.			<table border="1"> <tr> <td>Memory</td> <td>C/A</td> </tr> <tr> <td>35 / 6</td> <td>40 / 19</td> </tr> </table>	Memory	C/A	35 / 6	40 / 19	N/A	N/A	N/A		
Memory	C/A											
35 / 6	40 / 19											
8. References/handouts provided do not give away answers or aid in the elimination of distractors.			W	CS	PS							
9. Question content conforms to specific K/A statements in the previously approved examination outline and is appropriate for the tier to which they are assigned; deviations are justified.			W	CS	PS							
10. Question psychometric quality and format meet the guidelines in Appendix B.			W	CS	PS							
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.			W	C	PS							
Printed Name/Signature			Date									
a. Author	Michael Wilcox / M Wilcox		2-19-18									
b. Facility Reviewer (*)	Colin Breiman / Colin Breiman		2/19/18									
c. NRC Chief Examiner (#)	Peter Presby / Peter Presby		2/23/18									
d. NRC Regional Supervisor	Donald Jackson / Donald Jackson		2/23/18									
<p>Note: * The facility reviewer's initials or signature are not applicable for NRC-developed examinations.</p> <p># Independent NRC reviewer initials items in Column "c"; chief examiner concurrence is required.</p>												

Q	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist	Partial	Job- Link	Minutia	#/Units	Backward	Q – K/A	SRO Only			
1	H	2.8												N	S	
2	H	3												M	S	
3	F	2.8												B	E	Removed reference to breaker control power in Choice d to improve discriminatory value. Minor edits to choice to improve symmetry.
4	H	3												N	S	
5	F	2.8												N	U	Overlapped with operating test. Reselected K/A, wrote new Q.
6	H	3												B	E	Modified part 1 of the choices to improve discriminatory value.
7	F	3												B	S	
8	F	3												B	S	

Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts:

- Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
- Enter the level of difficulty (LOD) of each question a 1 (easy) to 5 (difficult); questions with a difficulty between 2 and 4 are acceptable.
- Check the appropriate box if a psychometric flaw is identified:
 - "Stem Focus": The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
 - "Cues": The stem or distractors contain cues (e.g., clues, specific determiners, phrasing, length).
 - "T/F": The answer choices are a collection of unrelated true/false statements.
 - "Cred. Dist.": The distractors are not credible; single implausible distractors should be repaired, and more than one is unacceptable.
 - "Partial": One or more distractors are partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by the stem).
- Check the appropriate box if a job content flaw is identified:
 - "Job Link": 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).
 - "Minutia": 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).
 - "#/Units": The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
 - "Backward": The question requires reverse logic or application compared to the job requirements.
- Check questions that are sampled for conformance with the approved K/A and those K/As that are designated "SRO-only." (K/A and license-level mismatches are unacceptable.)
- Enter question's source: (B)ank, (M)odified, or (N)ew. Verify that (M)odified questions meet the criteria of Form ES-401, Section D.2.f.
- Based on the reviewer's judgment, is the question, as written, (U)nsatisfactory (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- At a minimum, explain any "U" status ratings (e.g., 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. Other		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist	Partial	Job-Link	Minutia	# / Units	Backward	Q – K/A	SRO Only			
9	H	3												B	E	Minor stem rewording for clarity.
10	H	3												B	S	
11	H	3												B	S	Used on 2017 NRC exam.
12	H	3												B	S	
13	F	3												M	S	
14	H	3												M	E	Modified stem conditions slightly to ensure Q cannot be answered without application of KA knowledge.
15	H	3												B	S	
16	H	3												B	S	
17	H	3												N	S	
18	F	3												M	E	Removed stem reference to "pressurization mode" and Part 2 column heading reference to "pressure" to improve discriminatory value.
19	F	3												B	S	
20	F	3												B	S	
21	H	3												M	S	
22	H	3												M	S	
23	H	4												M	S	
24	F	3												B	S	

Q	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist	Partial	Job-Link	Minutia	# / Units	Backward	Q – K/A	SRO Only			
25	F	3												N	S	
26	H	2												N	S	
27	F	3												N	S	
28	H	3												N	E	Modified stem and reworded some choices to improve plausibility of distractors.
29	H	3												M	S	
30	H	3												B	S	
31	H	3												B	E	Removed specific temperatures in Choices C and D to improve distractor plausibility.
32	F	3												B	S	
33	H	3												M	E	Minor stem edits for clarity.
34	F	3												B	S	
35	F	2												N	S	
36	H	3												B	E	Removed unnecessary information in Choice D about correct method for resetting scram to improve Q discriminatory value.
37	F	3												B	S	
38	F	3												N	S	
39	F	3												B	E	Used on 2015 NRC exam. Modified distractor choices to 1 and 4 vice 2 and 4 to improve plausibility.

Q	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist	Partial	Job-Link	Minutia	# / Units	Backward	Q – K/A	SRO Only			
40	H	3												N	S	
41	H	4												N	E	Minor stem modifications to enhance distractor plausibility.
42	H	3												M	E	Minor choice wording edits to improve clarity.
43	F	3												B	S	
44	H	3												N	S	
45	H	3												N	E	Modified Choices C and D to improve discriminatory value.
46	F	3												M	S	
47	H	3												N	E	Minor edits to stem and choices to eliminate unnecessary information and improve symmetry of choices.
48	F	3												B	S	
49	H	2												N	S	
50	F	3												N	S	
51	H	3												N	S	
52	F	3												N	S	
53	F	3												N	S	
54	H	3												N	E	Added specific component to stem and choices for improved symmetry between choices.
55	F	3												N	E	Removed terms from stem and distractors that would diagnose the condition for the applicant.

Q	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist	Partial	Job-Link	Minutia	# / Units	Backward	Q – K/A	SRO Only			
56	H	3												B	S	
57	H	3												B	S	
58	F	3												B	E	Minor editing of choices for balance.
59	F	3												N	S	
60	F	4												N	S	
61	H	3												B	E	Modified choices and added information to stem to improve distractor plausibility.
62	H	3												M	E	Removed references to the backup component as unnecessary and potentially leading.
63	H	3												N	S	
64	F	3												B	E	Replaced one component with another in two of the choices to improve discriminatory value.
65	H	3												B	S	
66	F	3												B	S	Used on 2017 NRC exam.
67	F	3												M	S	
68	H	2												B	E	Removed extra information from choices to improve plausibility of distractors.
69	F	3												N	S	
70	H	3												B	E	Redacted power supply information from drawing to ensure this Q doesn't help to answer Q43.

71	F	3										X		N	U	Q was specific to a particular system and therefore not testing generic knowledge per expectations for Tier 3 questions. Replaced with a new Q.
72	F	3												B	S	
73	H	3												M	E	Modified a stem bullet to ensure this Q doesn't help with answering Q#28.
74	F	3												B	S	
75	F	3												N	S	
76	H	3												N	S	Redacted information in handout that helps with answering Q87.
77	H	3												N	S	
78	H	3												N	E	Changed value in Choice D to improve plausibility.
79	H	3												M	S	
80	H	3												B	S	
81	H	3												N	S	
82	H	3												N	E	Modified stem and choices to improve plausibility of distractors.
83	H	3												M	S	Redacted information in handout that helps with answering Q87.
84	H	1												N	U	Q too low LOD. Reselected K/A because could not write adequate SRO Q to original K/A
85	F	3												M	E	Minor changes to choices to improve distractor plausibility.
86	H	3												M	E	Changes to improve discriminatory value of the question. Removed provided references. Changed Choice D.
87	H	3												M	S	Used on 2015 NRC exam.

[illegible]