

[illegible]

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job- Link	Minutia	#/ units	Back- ward	Q= K/A	SRO Only			
<p style="text-align: center;">Instructions</p> <p style="text-align: center;">[Refer to Section D of ES-401 and Appendix B for additional information regarding each of the following concepts.]</p> <p>1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.</p> <p>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).</p> <p>3. Check the appropriate box if a psychometric flaw is identified:</p> <ul style="list-style-type: none"> • The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information). • The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc). • The answer choices are a collection of unrelated true/false statements. • The distractors are not credible; single implausible distractors should be repaired, more than one is unacceptable. • One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem). <p>4. Check the appropriate box if a job content error is identified:</p> <ul style="list-style-type: none"> • 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). • 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). • The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons). • The question requires reverse logic or application compared to the job requirements. <p>5. <u>Check questions that are sampled</u> for conformance with the approved K/A and those that are <i>designated SRO-only</i> (K/A and license level mismatches are unacceptable).</p> <p>6. 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?</p> <p>7. At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met).</p>																

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82	H	3				U	U						U	U (S)	C- This question has some problems. First two of the distractors have grammatical errors which means 99% of the time they can be considered incorrect by the test taker. Second, the KA is focused on the function of major system components and the question is on operator actions. Third, the stem has conflicting information with regard to the status of CEA #20. Changed K/A to G2.1.12 because of oversampling, because needed more TS type questions for SRO exam, and because could not develop SRO level question on this topic for this K/A. New Q.
83	H	3										U		U (S)	A- The KA is focused on operator responsibilities and the question is focused on operator actions. Modified "A" to include procedure and added items to other selections for symmetry as well as embellished explanation for responsibilities include actions taken by SRO.
	H	3												S	A
85	H	3												S	A
	H	3											U	U (S)	B- This question is focused on the operator actions which makes it an RO question. It should be focused on diagnosis and which procedure to implement in response to the given conditions. Removed RO knowledge items and modified selections to include SRO only information.
87	H	3												S	D
88	H	3												E (S)	D-pt value incorrect on exam and outline. Corrected.
89	H	3										U		U (S)	B- The question does not address the predict impact part of the KA. Consulted NRR and every question does not have to address both parts of the A2 K/A, but the emphasis is to TRY to write it on both if possible.
90	H	3												E (S)	A-symmetry of distractors. Modified selections for better symmetry.
91	H	3										U		U (S)	A- The question does not address the predict impact part of the KA. Consulted NRR and every question does not have to address both parts of the A2 K/A, but the emphasis is to TRY to write it on both if possible.
92	H	3												S	A-
93	H	3												S	D
94	H	3												E (S)	D-from memory? Yes and LO provided.

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General Comments:																
1. Answer Distribution: a = 12 + 9 = 21 b = 30 + 5 = 35 c = 15 + 6 = 21 d = 18 + 5 = 23 Recommend reducing the number of "B" answers to less than 30..																
2. Average Level of Difficulty (LOD) is: RO = 2.84 and SRO = 3.0. Both these values are within the expected norms.																
3. Learning objectives were not provided for most of the questions, nor could they be located in the system descriptions. Therefore some questions were not clear as to whether they were memory items. These questions are highlighted in the review. LO provided.																
4. The parent questions were not provided for modified questions, therefore all modified questions were counted as bank questions for the purpose of meeting the NUREG-1021 requirements. Modified question parents provided.																
5. There is a very high percentage of scenario based questions (i.e. answer a question based on given a set of plant conditions) on the exam. The exam reviewer found over 70 percent of the questions are scenario based. (Observation) This is encouraged in the NUREG to support operational validity and raises cognitive level required to answer question.																
6. The distribution of questions is statistically skewed toward the generic KAs. The exam has 34 questions (including the 17 Tier 3 questions) from the generic section of the KA catalogue and 18 (53%) of these are from generic section 2.1, Conduct of Operations. Thirteen exam questions are derived from 5 generic KAs from Section 2.1. A random review of 3 other NRC exams found that on average there were 27 generic KAs and 9 were from Section 2.1. Recommend reducing the number of questions from Section 2.1 that are presently on the RO exam. The contractor that wrote the exam explained that they used the rule in NUREG-1021, ES-401, Att-1 for K/A suppression, rule 1, that allows the suppression of all Generic K/A's except for a select few for T1 and T2, which is allowed. The problem of too many G2.1.2, G2.1.27, and others was addressed by requiring the utility to resample other K/A's for balance.																
7. On the SRO only portion of the exam, there are 2 questions involving the application of the technical specifications whereas a typical exam has 6-8 questions of this nature. Secondly, there are no questions involving refueling. (Observation) In changing the sampling per item 6 above, required addition of TS question to shift balance.																
8. The questions on the RO exam were within the guidelines for higher order questions (54.7%) and were higher then the guidelines for SRO (76%). The guideline is 50-60% of the questions should be at the comprehension/analysis level.																
9. Twenty questions were sampled for determining if they had been on either of the previous 2 NRC exams and none selected were repeats.																
10. The SRO exam has 11 new questions (44%) and 14 bank questions (56%). The RO exam has 31 (41%) new questions and 44 (59%) bank questions. Both these values meet the guideline of no more than 75% bank questions. (See comment 4 above.)																