

**NRC COMMENTS**

**FOR THE DONALD C. COOK INITIAL RETAKE**

**EXAMINATION - SEPTEMBER 10, 2001**

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		
1	F	2										N		S	Question does not match K/A. The K/A is for E-plan PARS, the quest is on usable RVLIS channel in S/D. Also, the question was designated SRO only, but it is a generic systems type question. <b>Determined that wrong K/A was noted for the question, correct K/A 016K403. Question corrected.</b>
2	H	2										Y		E	One distractor 'c' needs improvement. Fire protection system is it a RCP component? NO! This is a higher level question if answered from memory of RCP/CCW lineup, but the question proposes to give the P&ID of ccw to RCP, then it is an easy lookup question. Rewrite question without use of ref diagram. <b>Also removed requirement to provide P&amp;ID reference handout.</b>
3	F	3										Y		S	
4	F	3										N		U	Question does not match K/A. The K/A is an accident K/A APE for a pzz vapor space accident and its interrelation with sensors and detectors. The question is a basic inputs to cold overpressure protection circuitry for pzz PORV. Nothing to do with a pzz steam leak.
5	F	2										Y		S	
6	F	2										Y		S	
7	F	3										Y		S	
8	H	2		✓		✓						Y	✓	E	Answer 'b' is a fail safe answer, given in the stem cue that a system is inoperable. To improve this question, need to give a specific condition for the Ice Bed Temp Monitoring Sys (i.e., 3 ice bed temp RTDs have failed). Otherwise it simply directs you to the one T/S, given as a reference, associated with the temp monitoring system, simple look up. Increase the challenge to determine which T/S to use. Typo in dist 'c', (withn) should be (within). Make dist's 'c' more credible, change to, "Restore ice bed to operable status within 48 hours ..." Also, enhance answer 'b' by "Verify ice bed temperature status and ..." This would give balance to the four choices.
9	H	3										Y		S	
10	H	2										Y		S	

## Instructions

[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 using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).
- Check the appropriate box if a psychometric flaw is identified:
  - 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.
  - More than one distractor is not credible.
  - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).
- Check the appropriate box if a job content error is identified:
  - 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.
- Check questions that are sampled for conformance with the approved K/A and those that are designated SRO-only (K/A and license level mismatches are unacceptable).
- 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?
- At a minimum, explain any "U" 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. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
11	F	3										Y		S	
12	F	3										Y		S	
13	H	2										N		U	Question does not match K/A. K/A concerns IR level trip bypass. Question does not reflect condition of the level trip bypass. Need to reflect status of bypass switch and how it would affect the NI system. <u>Insert in stem that IR NI is in level trip bypass. Licensee noted in their final review, logic error, original answer was incorrect. Changes made to 'd' to reflect IR instead of SR will cause reactor scram, and distractor 'b' to permissive blocked instead of actuated.</u>
14	F	3										Y		S	
15	F	1				✓						Y		U	Too easy, not challenging enough. Also, question #22 has info on rad limits are associated with 10 CFR 20. Gives away the answer. Need another question. <u>New question - add neutron to distractor 'b', and add TLD readings to distractors 'a' and 'b'.</u>
16	H	2	✓									Y		U	Use the proper description of the color as in procedures, Magenta vice purple. In the stem, change 'should' to 'would' or 'must'. <u>Need technical verification of the answer? Answer was incorrect, had to add requirement to place RMS in reset to make the answer correct.</u>
17	F	1										Y		U	As written the answer is given away with the added descriptions in the distractors. Rewrite the question to give a condition, a color on the CRT status, and determine/interpret the condition. <u>Initially recommended to change one yellow color indication to blue in accordance with procedure. Found that procedure was incorrect, no blue light indication. Settled to change stem to determine what constituted placing RMS in local control - answer "yellow-trend".</u>
18	<del>F</del> H	1										Y	✓	U	The exam handout gives the applicable table from ODCM. With the given ref handout the question is a direct lookup. The table specifically notes RFS-1010 inop which leads directly to the action statement which is the answer. Need to rewrite question. Make it more involved, rather than a quick lookup. <u>Needed to change 'performed' to 'continued' and add in the stem 'A liquid waste release is in progress,' to make the question correct.</u>
19	F	3										Y		S	
20	H	3										Y		U	Need explanation on technical validation of question. Is T21A power the ESW pump causing low press? The ARP on low press indicates no Auto functions? Question stated in negative phase, 'NOT' the answer. <u>Found the question was technically incorrect. Added clarifying info in stem to make the question correct. Added breaker fault and EDG supplying bus.</u>
21	H	3										Y		S	
22	F	3										Y	✓	S	The question was not listed as an SRO only question; however, T/S bases questions are 10CFR55.43 item specific for SRO only.
23	F	3				✓						Y		E	Need technical validation of answer. Two distractors 'a' and 'd' not credible, justify a reason for a containment isolation that causes a fan to start. <u>Determined the question to be correct. Added enhancement, changed distractor 'a' from fan will start to trip.</u>
24	H	2										Y		S	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
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25	F	3										Y		S	
26	F	3										Y		S	
27	H	2		✓		✓						Y		U	To better balance the distractors, change 'b' to all "closed", (i.e., CR AC Intake - closed). Otherwise the only choice that has the CR AC Intake closed is the correct answer 'd'. During validation found the question to be technically incorrect, needed further info on dampers for 1A and 2A to ensure correct answer. Revised question to properly include the two dampers.
28	F	3										Y	✓	S	Note: This was a T/S question noted as a RO question. It is more towards an SRO only question.
29	F	3										Y		S	The question had the incorrect reference attached. The ref was for question #28. Found that the ref for question #29 was found in #30. Note: found that other question references were also incorrectly transposed and were found in subsequent questions.
30	<del>F</del> H	3										N		E	Question does not match K/A. K/A is for load sequencer (safeguards), the question asks about load shedding capability during a LOOP/SI. Also, the question in general appears incorrect. The question notes that on a LOOP/SI the diesel will run and load shedding will not occur. References indicated on a LOOP/SI the diesel will undergo load conservation, which automatically trips and locks out all non-safety related loads except NESW pumps. Load conservation could be argued as a type of load shedding, making the selected answer 'a' incorrect, and makes 'b' correct. Either get a new question for the selected K/A, or enhance the question to include load sequencing along with shedding, and fix the question. Added in stem that loads sequenced on. Also, terminology verified between load conservation and load shedding, and satisfactorily justified answer. Consider only to require enhancement and not unsat.
31	H	2										Y		S	
32	F	3										Y		S	
33	H	3										Y		S	
34	H	2										Y		S	
35	F	3										Y		S	
36	<del>F</del> H	2										N		U	Question does not match K/A. K/A asks to predict impacts to a malfunction or operation of SAS with cross-connection with IAS. The question only asks what supplies the 20 psig air header. Need to rewrite question to involve more of the operational implications of cross-connecting the air systems. Developed new question, slight enhancement to clarify stem and two distractors.
37	H	2										Y		S	
38	F	3										Y		S	
39	F	2										Y		S	
40	H	2										Y	✓	S	Note: This was a T/S question noted as a RO question. It is more towards an SRO only question

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41	F	3										Y		S	
42	F	3										Y		S	
43	F	2		✓								Y		U	The question as written without any understanding of the system, easily focuses on the lowest time which is the most conservative answer choice and gives away the answer. The most conservative answer turns out to be the correct answer. Reword the question stem so as not to focus on the minimum time, but the maximum time. Also, readjust the choices to include a lower value, i.e., 1minute. <b>Changed to require max time, added distractors of 30 and 60 seconds.</b>
44	F	3										Y		S	
45	F	2		✓		✓						Y		U	As written the question asks the reason for slowly initiating seal injection flow to re-establish RCS seal flow. The only choice that gives such a reason for slowly initiate flow is the correct answer. The other choices gives conditions if it is restored too quickly, i.e., sudden initiation of flow, and does not give plausible reasons for slow injections. Need to reword the other choices, (i.e., to minimize ..., or to prevent ...)
46	H	2										Y		S	
47	F	3										Y		S	Note: Requires technical validation, the submitted reference does not justify the answer. <b>Proper reference validated the answer.</b>
48	F	3										Y		S	
49	H	3				✓	✓					Y		U	Distractor 'a' could be argued to be correct. The procedure allows for SI injection as compensation for emergency boration (i.e., if SI is actuated then continue with procedure bypassing alternate actions to get boration flow). Distractors 'b' and 'd' not credible compared to stem of question focusing on boration lineups. Recommend rewrite with valve alignment that limits to one of four boration flow path (i.e., alternate, emergency, RWST suction, normal boration). <b>Changed stem to ask next priority of action. Added new distractor.</b>
50	F	4										Y		S	Note: Incomplete reference info, question was missing subsequent pages which made it difficult to verify the answer. Additional procedure used to verify answer.
51	H	2				✓						Y		E	Distractor 'a' is not credible. Stem notes SG tube leak, but 'a' is zero gpm. Recommend <1gpm. <b>Changed distractor 'a' to 1 gpm.</b>
52	F	3				✓						Y		S	Reference provided does not support the answer. Appropriate reference verified.
53	H	2	✓	✓								Y	✓	U	Need to enhance stem to note that no other malfunctions other than a LOCA occurred. Otherwise any assumption could be made to justify that the EDGs are running, i.e., loss of electrical power. The answer is a give away, for it is the only choice that has both CTS and SI pumps running, understanding that a LOCA occurred these two system will be obviously be in operation. Recommend changing distractor 'c' CTS running from NO to YES.
54	H	2										Y	✓	S	Note: This is an EOP status tree assessment question noted as a RO question. It is more towards an SRO/STA only question.

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55	H	3										Y		S	
56	H	2				✓						Y		S	
57	H	3	✓				✓					Y	✓	U	Need to focus the stem to indicate that FR-S1 was not immediately entered at the onset of the reactor trip, i.e., RO did not identify the five rods that did not insert at the time of the trip. Recommend adding statement that, "The RO subsequently identified and reported the five rods ..." Otherwise, assumptions could be made to justify distractor 'c'. Also, distractor 'd' could be argued to be correct, i.e., similar to emergency borate with more boron than needed. Note: This question is an EOP insight question noted as a RO question. It is more of an SRO response question.
58	H	2										Y		E	Enhance stem to note that operator actions will be needed to reduce AFW flow, to better fit K/A.
59	H	2				✓						Y	✓	E	Recommend changing distractor 'a' final temp to 310 degrees F to also reflect a high cooldown rate of > 200 F/hr as in the correct answer. The distractor 'a' is still incorrect, although it is at the highest RCS pressure with a high cooldown rate, the final condition is still out of the brittle fracture region and therefore it does not meet all the conditions for PTS.
60	H	3										Y	✓	S	
61	H	3										N	✓	U	How does the question meet the K/A concerning actions between units? It appears to be priority concerns for local actions for only one unit. <b>Changed to an appropriate K/A 2.4.35.</b>
62	H	2										Y		S	<b>Wrong exam handout was provided for the question. The handout was Attachment 4, a cooldown rate graph, when the question required Attachment 1, a heatup graph.</b>
63	F	3										Y		S	
64	F	2										Y	✓	S	The question was noted as a high level RO type question. The question is a fundamental memory SRO only question. Although an RO should be aware of Fire Brigade manning requirements, i.e., number of minimum staffing; however, the T/S time limit to take an action to restore the minimum staffing would be more of an SRO responsibility, as is noted by the K/A value of RO as 2.3 and SRO as 3.4.
65	H	2		✓								Y		E	The answer choice is the only one which gives an alarm condition that requires an action. This is a cue to the correct answer when compared with other choices that only states a condition. Recommend changing the answer 'b' to give only a condition and not a specific alarm (i.e., rising radiation levels on the RCS radiation monitor). <b>Clarified to licensee to remove ERA 8309.</b>
66	H	2				✓						N		U	The question is a direct lookup. The stem of the question notes that the system is inoperable; therefore, no assessment is required by the applicant. With the T/S handout given in the exam, there is only one action associated with that T/S; therefore, it is a simple matter of looking at the question choices that matches the one and only action statement. Changed stem to note failed and not inop, also change a distractor to include no action required.
67	F	3		✓								Y		U	The answer choice gives away the answer for it is the only choice that specifically denotes the NI channel in question and associated actions necessary for reactor startup. Recommend rewording the answer choice to, "Reactor power must not be increased above 5%."

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68	H	2										Y	✓	E	Recommend changing wind direction from 355 to 320, this will allow the sector choice to be either are as 1,2, and 3 OR 1 and 3, depending on identifying the associated three sectors. Otherwise the original question noted sector J which will always be area 1 and 3, regardless of identifying the correct adjoining sectors.
69	H	2	✓	✓			✓					Y		U	The question stem does not focus on the plant operation at hand. The answer choice indicates startup operations; therefore, with only two CW pumps running the normal plant ops procedure dictates starting another pump to increase CW flow. However, without noting a startup is in progress, any of the other three choices could be arguably correct. Also, need to restate the question to require what operator actions is required First, and not should be First. Again, using "should" could be misunderstood to mean any action deemed necessary. <b>Take turbine out of stem and changed dist 'a'</b>
70	H	2	✓									Y		S	Question stem indicated RVLIS Pressure of 985 psig. Should it not be RCS Pressure instead of RVLIS Pressure? Minimum subcooling margin is 36 deg F per procedure, which corresponds to a sat temp of 540 deg F to get the answer choice of 504 deg F. However, for RCS pressure of 985 psig, that is 1000 psia, the sat temp is 544 deg F, which would correspond to a temp of 508 deg F. Need to verify the answer. (Psia = Psig + atm) Temp of 508 is correct; however, the question asks which is the highest value, which would then correspond to answer 'c', 504 deg F.
71	<del>F</del> H	3										N		U	The question does not match the K/A. The K/A asks interrelation between High Containment Radiation with components and functions of control and safety systems. The question asks the interlock and auto function of ECCS suction realignment, but has nothing to do with High Containment Radiation. <b>New question submitted, satisfactory.</b>
72	<del>F</del> H	3							✓			Y		U	The question is asking for a speculative (hypothetical) answer, "may have been manually closed." Also, the question does not exactly match the K/A. The K/A asks for reasons for normal, abnormal, or emergency operating procedure as they apply to High Containment Pressure. Although the question is asking about a reason for a step in a procedure for High Containment Pressure, the specifics of the step in question is only a precautionary step that has no real bearing to High Containment Pressure condition. It has to do with the potential that a valve "may" have been closed in some previous procedure. The question is also an EOP basis question, more suited for SRO only. <b>Question replaced. New question satisfactory.</b>
73	F	2				✓						Y	✓	E	Recommend changing the choices to be more credible by changing it to multiple of 5 minutes (i.e., 5, 10, 15, 20).
74	F	3										Y	✓	S	
75	F	2										Y		S	This question is the one that required the reference material <b>found to be offset by one question as identified in question # 29.</b> New reference checked, licensee found technical problem and corrected.
76	H	2										Y		S	The question was originally noted as an SRO only question; however, this is an action that an RO must also be knowledgeable of (an action to be taken immediately to manually trip the reactor).

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77	H	2										Y	✓	E	The attached ref does not support the answer choice. Distractors 'a' should have additional info on action to be taken for RCP #3 following reactor shutdown. The difference in choices between 'a' and correct answer 'd' is the immediacy of the required action, this must be verified by actual reference.
78	H	3				✓						Y	✓	U	Change the distractors 'c' or 'd' other than a Fire pump bearing oil pump. What difference does it make if it is an East or West Fire pump bearing oil pump, it is practically the same answer. The question is focused on the Unit 1 problem, select another DC load for the other Unit 1 diesel as a distractor. In addition, another choice of distractors other than the Fire pumps should be considered, because on a station blackout there is the diesel driven fire pump, which makes distractors 'c' and 'd' not credible. <b>Question rewritten to ask what NOT be shed.</b>
79	H	2		✓		✓						Y	✓	U	The attached ref does not support the answer choice. Also, the question directly focuses on the fault of Bus T21D and the other plant conditions, including SI termination procedure being implemented, appears to have nothing to do with the question and is not needed. Of the four choices, only one (the answer choice) has the specific electrical mitigating procedure which cues it to be the correct choice. <b>Answer choice was incorrect - correct answer is 'c'.</b>
80	H	3										Y	✓	S	
81	H	3										Y	✓	S	
82	H	2										Y	✓	S	
83	H	2										Y	✓	S	
84	H	3										N	✓	S	
85	H	3										Y	✓	S	
86	H	2										Y	✓	S	
87	F	3										Y		S	
88	H	2										Y		S	This question was originally noted as an SRO only question; however, an automatic system actuation on high radiation alarm should be equal knowledge for ROs.
89	H	2										Y		S	This question was originally noted as an SRO only question; however, an automatic system actuation on high radiation alarm should be equal knowledge for ROs.
90	H	3										Y		S	This question was originally noted as an SRO only question; however, understanding the auto switchover to alternate power supply for electrical systems should be equal knowledge for ROs.
91	H	3										Y		S	This question was originally noted as an SRO only question; however, understanding the ALARA concept of dose rate changes to shielding and distance should be equal knowledge for ROs. Also, the reference does not support the answer.



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92	H	2										Y		S	This question was originally noted as an SRO only question; however, knowing the number of thermocouple inputs to the saturation meter is a systems type knowledge and should be equal knowledge for ROs.
93	H	2										N		U	This question was originally noted as an SRO only question; however, operation of the hydrogen recombiners including determination of KW setting is an RO responsibility. The question does not match the K/A. The K/A is a generic diagnose and recognize trends using control room reference material. Although the question uses a reference material, it is a basic use of graphs and not associated with diagnosing and recognizing trends. In addition, this is an exact duplicate of a JPM task that the applicant took during the last NRC exam. Recommend replacing it with another question pertaining to hydrogen recombiners. <b>New question acceptable.</b>
94	H	2										Y		S	This question was originally noted as an SRO only question; however, understanding of general plant effects associated with plant conditions are also equal knowledge required for ROs and not just SROs.
95	H	2										Y	✓	S	The attached ref does not specifically justify the answer choice. No where does it state eCAP is the primary process, it could be argued that 'a' is used to track LCOs. <b>Licensee determined this is the case.</b>
96	F	3										Y	✓	S	
97	F	3										Y	✓	S	
98	F	3										Y		S	This question was originally noted as an SRO only question; however, safety procedures and actions necessary for personnel safety is also equal knowledge for Ros.
99	F	3										Y	✓	S	
100	H	2										Y		S	