

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/2 RO	003/AK3.03	Knowledge of the reasons for the following responses as they apply to the Dropped Control Rod: Turbine automatic runback with reactor in order to balance power output. Rejected due to KA not applicable to Waterford 3 and similarities with Operating Test. Replaced with 005/AK3.04
2/1 RO	007/A1.01	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining Quench Tank water level within limits. Rejected due to this K/A being too similar to question 87 on the SRO portion of this exam. Replaced system with 013, but maintained A1.01.
2/2 RO	028/K2.01	Knowledge of bus power supplies to the following: Hydrogen Recombiners. Rejected due to over sampling of power supply K/As. A3 was not originally selected for Tier 2 group 2, No A3 K/As existed for 028. Replaced with 041/A3.02
1/1 SRO	054/AA2.02	Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW): Differentiation between loss of all MFW and trip of one MFW pump. Rejected due to similarity with Operational Exam. Replaced with AA2.06
1/1 SRO	E55/2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits. Rejected due to no technical specification bases relating to SBO. Replaced with 2.4.48 (kept E55).
2/1 SRO	061/A2.01	Ability to (a) predict the impacts of the following malfunctions or operations on the AFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Startup of MFW pump during AFW operation. Rejected due to Low Operational value for discriminatory SRO level question. Replaced with A2.03
1/2 SRO	037/2.1.34	Ability to maintain primary and secondary plant chemistry within allowable limits. Rejected the Generic K/A due to having low validity regarding Operations decisions relating both primary and secondary chemistry control to SGTL. Replaced with 2.4.11

SRO/RO written Revisions NRC comments/Operations Feedback

RO NRC/OPS COMMENT RESOLUTIONS			
		COMMENT	RESOLUTION
	1.		
	2.		
	3.		
NRC	4.	Change to Direct From Bank.	Done
NRC	5.	A & C have 2 actions, stem asks for one.	Stem asks "What is required" instead of "What ONE action is required"
	6.		
OPS	7.	Editorial changes based on Operations feedback to add realism for common fault of both trains of SDC	Stated that both SDC trains are lost due to a common fault.
	8.		
	9.		
	10.		
NRC	11.	466°F implausible.	Chaged to 449°F (Sat temp for 550 psia)
	12.		
OPS	13.		
NRC	14.	Provide NRC LO to prove RO level. Editorial changes based on Operations feedback for common nomenclature for equipment ventilation	LO provided to NRC Changed "verify equipment ventilation" to "open Control Room and PAC doors".
	15.		
	16.		
	17.		
	18.		
	19.		
	20.		
	21.		
OPS	22.	Editorial changes based on Operations feedback for accepted nomenclature	Changed "Refueling Ventilation with RAB Normal Ventilation" to "Containment Purge is in the Refueling Mode", which is more in-line with Operations.
	23.		
NRC	24.	Change to fundamental	Done
	25.		
OPS	26.	Editorial changes based on Operations feedback swapped distractors for human factoring added initial condition to clarify valve alignment	Swapped answers "B" and "C".

RO NRC/OPS COMMENT RESOLUTIONS			
		COMMENT	RESOLUTION
	27.		
	28.		
	29.		
	30.		
	31.		
	32.		
OPS	33.	Editorial changes based on Operations feedback	Added conditions to stem to allow SIAS reset for distractors C&D to be more plausible to Operations
	34.		
	35.		
	36.		
	37.		
NRC	38.	Tests knowledge of ECCS, not effect of loss.	Changed to ask for the effect of a loss of ECCS
NRC	39.	Change to fundamental, Provide NRC LO to prove RO level.	Done
	40.		
	41.		
	42.		
OPS	43.	Editorial changes based on Operations feedback.	Moved the "A" designation to the stem of the question.
OPS	44.	Editorial changes based on Operations feedback.	Corrected MS-417 valve number in distractor D. Added "depressurize steam header" to distractors A and C to more closely match procedure verbiage.
	45.		
	46.		
OPS	47.	Editorial changes based on Operations feedback.	Added valve number and noun name to SI-116A(B) in stem for clarification.
NRC	48.	Change to high cognitive	Done
NRC	49.	Only meets part of K/A.	Added statement for using procedure to mitigate consequences of failure.
NRC	50.	D is not credible with conditions in stem. Need ref's to verify B is not correct. New Question (cognitive level 2)	Complete revision. Original procedure did not contain enough actions for enough good distractors. Now using High Activity in CCW.
	51.		
	52.		
NRC	53.	B and C easily eliminated.	Rephrased stem to make B and C plausible.
NRC	54.	Provide NRC LO to prove RO level.	LO provided to NRC.
NRC	55.	Wording in stem eliminates Shield Building.	Convinced NRC of the plausibility of Shield Building.

RO NRC/OPS COMMENT RESOLUTIONS			
		COMMENT	RESOLUTION
	56.		
	57.		
NRC	58.	Change to Direct From Bank.	Done
NRC	59.	Spell out OOS. Need to reverse question to malfunction effect “on” NIS.	Created new question.
	60.		
NRC	61.	Spell out OOS. Need ref’s to verify distracters.	Spelled out “OOS”. Linked stem to procedure.
	62.		
	63.		
NRC OPS	64.	Editorial changes based on Operations feedback, removed unnecessary wording. (direct) Change to Direct From Bank.	Removed “and then take Action a”, which added no value to the stem. Changed to Direct from Bank.
NRC	65.	Change GPM to GPD.	Done
	66.		
NRC	67.	Stem implies further action required.	Added “if any” to stem.
NRC	68.	Kirk – Rewrite. C & D not plausible.	Created new question.
NRC	69.	Kirk – Rewrite.	Created new question.
	70.		
	71.		
NRC OPS	72.	Editorial changes based on Operations feedback, (explanation) Kirk – F. D is not clear.	Reworded to make more plausible for Operations. Reworded to be more in-line with Operations.
NRC	73.	Kirk - Tie to procedure. B may be true. D not plausible.	Tied to procedure. Reworded stem to ensure B is clearly false. Revised D.
	74.		
NRC	75.	D not credible with 1-hr action item.	Changed D to indicate the valve fails as-is. This is a true statement, but outweighed by protecting personnel in the CR.

SRO NRC COMMENT RESOLUTIONS

		NRC COMMENT	W3 RESOLUTIONS
NRC	76.	Delete “most” from stem. Create new distracter C (LOCA & SGTR not credible)	Deleted “most”. Added LOOP condition to stem and to distracter C.
NRC	77.	Rewrite to give conditions and ask correct actions for K/A match.	Provided conditions in the stem and actions in the answers. Converted from LOCA to SGTR.
NRC	78.	Delete from stem that other DCT fans are operable. Insert “are” in distracter D.	Corrected as described.
OPS	79.	Editorial changes based on Operations feedback.	Changed distracter C to 60 % to make conditions not as close to solid pressurizer.
NRC	80.	Delete 2 nd part of question that has “desired/undesired” statements. Update Explanation.	Corrected as described.
OPS	81.	Editorial changes based on Operations feedback.	Changed value in stem to 35°F to give margin from 28°F subcooled margin limit.
OPS	82.	Editorial changes based on Operations feedback.	Reworded stem to more closely follow accepted procedural guidance.
NRC	83.	Need new question	Rejected old K/A. Added K/A of 2.4.11. Created new question
	84.		
	85.		
	86.		
NRC	87.	Give NRC OP-008-003, Precaution 3.1.2 as a reference	Corrected as described.
NRC	88.	Tie to procedure	Corrected as described.
NRC	89.	Tie to procedure. Spell out OOS.	Corrected as described.
NRC OPS	90.	Editorial changes based on Operations feedback. Spell out OOS	Spelled out OOS Added clarification to stem to clarify fault caused loss of Bus.
	91.		
	92.		
NRC	93.	Tie to procedure (OP-009-004)	Corrected as described.
	94.		
	95.		
OPS	96.	Editorial changes based on Operations feedback,	Changed “SM only” to “DPM”, “SM only” is too close to “SM or designee” per procedure.
NRC OPS	97.	Editorial changes based on Operations feedback. Tie to procedure (OP-005-001)	Removed unnecessary wording. Removed “determine need for evacuation” from 3 distracters Corrected as described.
	98.		
NRC	99.	Add to stem that maintenance personnel are in Cntmt OPS saw the answers to this question and procedure trivia.	Rephrased question and added all new answers (no longer need to add “maintenance personnel are in Cntmt”). This question was seen by OPS as trivia knowledge.
	100.		

Blue previously approved by NRC, Operations comments incorporated
 Red NRC Comments

Questions 7, 13, 22, 26, 33, 43, 44, 47, 64, 72, 79, 81, 82, 90, 96, and 97 were revised beyond NRC comments and require review.

JPM COMMENT RESOLUTIONS

Gen	Bold only Critical Steps
Gen	Initiating Cue: Add "IAW procedure" if you are going to provide candidate a procedure.
Gen	Investigate writing a TEAR to include Elec Safety Training in Requal (Lymans's comment)
Gen	Investigate writing a DR to see if RCPs starts are delayed too long (Perry's comment)
A	Delete Note on p 3 that Examinee may initiate boration. Initiating Cue: Add "You are the ATC operator."
B	Step 8: Spell out HPSI. Add note to not use radio to direct NAO if JPM is performed with another JPM (prevent cueing other candidate).
C	Does not meet definition of Alternate Path.
D	Step 14: Malfunction is RC07C (not A)
E	Delete Step 16.
F	
G	Step 4: Add that candidate will have to cycle CS Open/Closed to close valves.
H	
I	Initiating Cue: Add "IAW procedure"
J	Initiating Cue: Add "IAW procedure". Initial Conditions: PDP 90 is "energized"
K	

ADMIN COMMENT RESOLUTIONS

RO1	Provide good straight edges with graphs, and/or allow use of RefLib for graphs.
RO2	Opened Band on step 7 and 11 based on operations feedback
RO3	
RO4	
SRO1	
SRO2	
SRO3	
SRO4	Rework Initiating Cue. CRS review is prior to start of pcdr. Will not get to the point of checking Meteorological conditions. Met shouldn't be signed off.
SRO5	Step 2: should be EP-001-020.

Per Chief examiner request

Critical tasks Bolded

Add "IAW procedure" if procedure provided to candidate.

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ES-401

W3-11-2006 Written Examination
Review Worksheet (password:) (TAC#:)

Form ES-401-9

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												S	(B)
2	H	4												S	(N) Are RO's required to know the reason for these steps from memory in the procedure and the bases?
3	H	3												S	(N)
4	F	2												S	(B) (NRC02)
5	H	3		X										E	(M) Distractors A and C have 2 actions, stem asks for "one"
6	H	3												S	(N)
7	H	3												S	(B) (NRC02)
8	H	3												S	(B)
9	H	3												S	(N)

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.
 - One or more distractors is (are) 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		
10	F	2												S	(N)
11	H	3				X								E	(M) (NRC03) Can't see reasonable mistake/error that would yield a 466F answer.
12	H	3												S	(N)
13	H	3												S	(B)
14	F	4												S	(B)
15	F	3												S	(N)
16	F	3												S	(N)
17	H	4												S	(M)
18	F	3												S	(B) (NRC02)
19	F	3												S	(N)
20	H	3												S	(N)
21	F	3												S	(N)
22	F	3												S	(B) (NRC02)
23	F	3												S	(N)
24	F	3												S	(N)
25	F	3												S	(N)
26	H	3												S	(N)
27	F	3												S	(N)
28	H	3												S	(N)
29	H	3												S	(N)

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		
30	H	3												S	(B) (NRC02)
31	H	3												S	(N)
32	H	3												S	(N)
33	H	3												S	(N)
34	H	3												S	(N)
35	H	3												S	(N)
36	H	3												S	(N)
37	H	3												S	(N)
38	F	3										X		U	(B) Q appears to test for the knowledge of the ECCS system instead of the effect of a ESFAS loss.
39	F	3												S	(B)
40	H	3												S	(M) (NRC02)
41	F	3												S	(N)
42	H	3												S	(N)
43	F	2												S	(B)
44	H	3												S	(B)
45	F	2												S	(N)
46	F	3												S	(B)
47	H	3												S	(B)
48	H	2												S	(N)

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			
49	F	3											X		U	(B) (NRC00) Only meets part A of KA.
50	F	3				X									.U	(B) (NRC02) Distractor "D" is not a credible response for the conditions discussed in the stem. Need additional references to verify B is not correct as well
51	H	3													S	(B)
52	F	2													S	(B)
53	F	3				X									U	(N) B and C can be eliminated based on stem asking for design of IA system. B and C relate to systems/components served by IA
54	H	3													S	(B)
55	F	3		X		X									U	(B) Stem refers to containment vacuum relief, leads on to eliminate Shield Bldg.
56	H	3													S	(N)
57	F	3													S	(B)
58	H	3													S	(B) (NRC04)
59	F	3											X		U	(N) KA is effect of malfunction of component interconnections will have on NIS, question is effect of NIS failure on interconnected component. More like KA 6.01.
60	H	3													S	(N)
61	F	3													S	(B) (NRC03)
62	F	3													S	(B)
63	H	3													S	(B)
64	F	3		X		X									U	(B) Concentrations given in stem to reduce gases provide a cue to Oxygen. Grammatical clues in sentence structure make distractors C & D not plausible.
65	F	3								X					E	(N) Need to change GPM to GPD in stem.
66	F	2													S	(B)

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		
87	H	2												E	(N) Where is the requirement that running all four CFC's is prohibited?
88	H	2										X		U	(N) Second half of KA to use procedures to correct, control, mitigate is not covered.
89	F	2										X		U	(N) KA is to predict impact of the loss of DCand use procedures to correct, control, mitigate. Question asks time limit .
90	H	3												S	(N)
91	H	3												S	(M) (NRC02)
92	F	2												S	(N)
93	H	3										X		E	(N) KA is predict impact of fire damage due to failure of FPS to actuate. This question is how to correct a failure of FPS due to inadvertent CIAS. You need to add the procedure to the question.
94	H	3												S	(N)
95	H	2												S	(N)
96	F	2												S	(N)
97	F	2										X		U	(M) Need to add a reference procedure to meet the K/A.
98	F	2												S	(N)
99	F	2	X			X								U	(N) Stem doesn't give information on personnel in containment. Is C still correct if no personnel in containment?
100	F	2												S	(M)

Last two NRC Exams: 2003 & 2004 # used on exam: RO 5, 3-03 & 2-04
SRO 1, 04