

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation		
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q=K/A	SRO only				Ref needed	
1	H	2	X				B						N	N	N	N	U	Possibly replace B with High PR trip. Good question but it does not test knowledge of the bank step counters. Change the K/A to match the question. Good question - step counters are LoD 1
2	H	3	X										Y	N	N	N	E	Capitalize "one minute" in stem. Choice A - Is 45% too close to 33%. Give actual parameter values for "B" and "D". Will lower seal injection by 2 gpm. Will lower HX CCW flow by ?? - TBD 45% is sufficiently high to discriminate from 33%.
3	H	3.5											Y	N	Y	N	S	Do ROs have to know how to make procedure transitions? Will get back with answer
4	F	2					B						Y	N	N	NRC	S	Why is "B" plausible - why would someone think injection sources should be isolated during a LBLOCA? This question was used on the last 2 NRC exams so it should be OK
5	H	3											Y	N	N	B	S	
6	H	3.5	X										Y	N	N	N	E	Move "RHR HX Bypass" to A. Better yet - rearrange stem and choices so that both valves are in the stem - or both valves are in the choices - but not split. This tests knowledge of a subsequent action in an attachment to an AOP. Is this fair? Should the applicant know this based on system knowledge alone? Will verify this is RO level of knowledge - had a high miss rate by ROs during validation. If used - will rearrange distracters to clarify Substantially revised question to test concept - not procedure steps
7	H	2.5					A						Y	N	N	N	E	A - why plausible in mode 1 (RHR HX)? Replace "A" - add "by 50% without exceeding limits to last sentence in stem.
8	F	2.5											Y	N	N	B	S	Controllers and positioners not in Q - But isn't this implied? Can we get controllers or positioners into the stem? Draft K/A match analysis
9	H	3	X										Y	Y?	N	N	E	Replace "CRS" with "crew." Based upon answer explanation B could be correct. Edit B and D to say "under any conditions" or such. I am OK with their wording. Verify this really RO level of knowledge at Salem. This is memory level of knowledge - you have either memorized the step/bases or not. High miss rate on validation - will review and get back to us. Decided this was really higher LoK after discussions with DMS.
10	F	2.5											Y	N	N	N	E	Choice A sounds like a good operator practice - possibly technically correct??? Time is wrong - 10 minutes not correct - good distracter. Add "required by the FSAR" in the stem Will add FSAR
11	F	2.5											Y	N	N	N	S	

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12	H	3				A, B	C,D						N	N	N	N	U	Could C be construed as a subset of D?? Does not test K/A - nothing about the implications of the introduction of feedwater on a dry S/G. Revise question to add in the implications - recommended changes on reverse page Will consider changes
13	F	2	X			D							Y	N	N	M	E	Choice D is worded awkwardly??? Q seems somewhat simplistic. Not sure how to enhance. Proposed enhancement to add when are FRPs effective and why (reverse side of question). Will review proposed change and let us know
14	H	3	X						X				Y	N	N	N	E	Capitalize "not" is 3rd bullet. 115 F is choice D doesn't match with 105 F in answer explanation. Expected to know what comes off of P-250??? Agree - proposed revision tests where P-250 gets power and what temperatures are reasonable Proposed change to question to explicitly test loss of power
15	F	2.5					A,B		X				Y	N	N	M	S	A seems to be correct based upon answer explanation. "A" is not the bases - but is likely a factor - testing minutia (memorize the bases for an ARP caution). Replace "A" with something clearly incorrect. "A" is incorrect - consider changing "A" - high miss rate on validation
16	F	4.5											Y	N	N	N	E	Do we expect applicants to memorize the bases for NOUEs? This may be LoD 5. Replace question - reselect K/A
17	F	3.5	X			D			X				Y	N	N	N	E	Choice A - is RCS may already be at CSD boron concentration??? Mode 4 - may be - change to mode 3 and state boron concentration? Are we testing minutia - knowledge of AOP bases for subsequent action step? Last sentence in "D" does not make sense with 1st sentence? Change IC to mode 3 and remove last sentence in "D"
18	H	3	X										Y	N	N	N	E	Q asks about Class "B" but answer explanation talks about Class "C." ??? What is DFOST???? DFOST = Diesel Fuel Oil Storage Tank. Revise answer explanation to correlate with question. The DFOST has an oil fire and suppression is from a CARDOX system (CO2) Is this memory level?
19	F	2				C							N	N	N	B	E	C (spray actuation) not plausible for causing high containment press. Replace with feedline break in CNMT. Good question but not really testing the K/A - but the K/A is very simplistic (effects of pressure on leak rate)? Draft K/A match analysis. Add "mass leakage" to stem. Change C to feedline break.

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20	H	2											Y	N	N	N	S	Instead of stating that offsite power lost, provide applicants with condenser vacuum value or circ pumps have tripped and they can assess if main steam dumps are available???? I am OK with LOOP - consider changing C to PZR spray valve. Distracter C was picked because 25% steam dump capacity is the normal cooldown rate - this is plausible. Rearrange stem as discussed. Decided tgo change C to lower RCS pressure using spray valves
21	H	4	X										N	N	N	M	U	Capitalize LOCA in 1st bullet. Specify 2B EDG in stem. Don't see the KA connection to this Q. Write K/A match analysis or replace question Will replace question
22	F	1.5											Y	N	N	B	E	Seems too simplistic. Perhaps provide a list of various symptoms and choice those related to LOCA outside CNMT. Proposed change to test which system and why. Used on recent NRC exam. Revise question as proposed
23	F	2											Y	N	N	N	S	
24	H	1				B,D							Y	N	N	N	U	Of the choices A is very obvious. Other distractors don't seem to be very discriminating. "B" and "D" are not plausible Replace
25	H	2.5	X			D							Y	N	Y	B	E	Delete dashes in 2nd set of bullet.(i.e., "-10 F" indication of superheat????) Reword stem to ask for the alignment that meets minimum heat removal while minimizing RWST depletion. Revise distracters C and D
26	H	2.5											Y	N	N	B	S	Verify correct answer in TRIP-1 vice LOSC-1/2 (E2) OK as is
27	H	3											Y	N	N	B	S	This is different from what would be predicted by the pump curves - bypass flow is higher. Is this a fair question? Licensee retained this question
28	F	4				D			X				Y	N	N	B	E	Interesting but not operationally oriented. "D" is not plausible for Mode 6. Is this a fair question? Change D to RCDT - this is considered fair
29	F	4					A,B						Y	N	N	N	S	Choice A is (over)conservative??? It is the AL3 action statement - therefore is plausible. Do you hold your ROs responsible for this level of knowledge? Will get back to us Licensee retained this question
30	H	2.5	X										Y	N	N	B	S	What is C7? = Letdown isolations valve
31	H	2.5	X				A,C						Y	N	N	N	U	Reference needed for this question??? C is too ambiguous - would expect RCS boron to increase a little. Little = "approximately the same"? The distracter analysis says no reference is provided? The stem points to the exact reference. 1. Do they need a reference? 2. Distracter D is a correct statement - make it wrong. Do the applicants have to know cold shutdown boron concentration at EOL from memory? Learning objective is from LOR? Consider providing the reference and ask for exact change? Or ask what happens and why.

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32	H	3											Y	N	Y	N	S	Question 31 states that curve book S1.RE.RA.ZZ-0016 will be provided as a reference. Does this include the SI pump curve which makes this question pretty easy. SI Pump curve not provided in Q31
33	F	4								X			Y	N	N	N	E	Requires operators to have memorized the design bases seal leakage from an RHR pump in the FSAR. This is not generally expected knowledge from memory. Verify that this is expected knowledge (learning objective is not specific). Can use question if delete the 50 gpm and revise distracter "D"
34	H	4.5								X			N	N	N	B	U	This requires detailed knowledge of an infrequently performed procedure from memory (step 5.3.5 in S1.OP-SO.RC-002). BUT there is a learning objective ("major precaution and limitations"). Is this a major precaution? This does not match the K/A - this is about drawing a bubble in the PRT not the PZR. Replace question Will get back
35	F	3.5	X							X			Y	N	N	N	E	Delete "Given the following conditions" because there is only one condition. Why is knowing this from memory important??? How does this test the "system implications" part of the K/A? Will get back Revised question to test system implications
36	H	2.5				B							?	N	N	B	E	The K/A is to test how a malfunction in the PZR PCS effects the RCS. Need to add in something about RCS pressure into each distracter. As it stands, this just tests the PZR PCS response. "B" seems implausible - do not expect code safeties to be the first response for an instrument failure. Consider changing "B" to "PZR Heater turn on and pressure slowly increases" which is correct. This would make "B" the correct answer because B happens before D. Will get back
37	H	3.5								X			Y	N	N	N	S	Are they required to memorize yellow path entry conditions? They would also have to have memorized the first step in FRCI-1. Yellow paths may be referred to - can an applicant claim that "B" is not correct because it could be entered and immediately exited. There may be no correct answer. Is this a fair question for ROs? question is considered fair and B is correct
38	F	2				B,C		X					Y	N	N	N	U	Why are B & C plausible if there is no self test feature? Furthermore, it is not an operator actions/responsibility. Does not test K/A explicitly. Does not test knowledge of design features or interlocks. Replace question
39	F	2.5	X			D							Y	N	N	M	E	Q40 Typo - desinged vs designed. What does PZR low pressure have to do the power density limits? Can you replace "D" with high flux (high power)?
40	H	3											Y	N	N	N	S	Q41 Why is a 1 second inadvertent SI chosen as the stem condition? Is there anything important about 1 second?

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41	H	3											Y	N	N	B	S	Q42
42	H	3.5	X			A							Y	N	N	M	E	Q43 Delete the last zero in "100.0%" - possible cue. What is the correct answer C or D as per the key? "A" does not appear to be plausible. Why would a high level condition cause a locked in low level alarm? Will explain linkage
43	F	4.5							X				Y	N	N	B	E	Q44 Is it reasonable for operators to memorize power supplies to HSD panel indications??? Narrow range S/G levels not plausible for HSD panel. - Change to PZR pressure - Will revise as discussed
44	H	3	?										Y	N	N	M	S	Q45 Editorial change to stem - remove "will".
45	H	3	X										Y	N	N	N	E	Q46 Typo - remove first "will." Distractor C is vague and needs a reason to be parallel with other choices. Why would D be wrong? The stem implies that the failure of 21RH4 to close is addressed in the EOPs in the context of containment spray. Will this be confusing? No leave as is
46	F	2											Y	N	N	B	S	Q47
47	F	2.5											Y	N	N	N	S	Q48
48	F	2.5											Y	N	N	B	S	Q49 Need better explanation of answer/distractors. Could "A" be correct? A is not correct - Added to answer explanation
49	H	3.5											Y	N	N	B	S	Q50
50	H	3	X			C							Y	N	N	N	E	Q51 For distractor C 11SGFP "trips" or loses steam supply. C is incorrect because SGFP will not trip. Lo lo level vs SG level shrink? Revise distractor "C" to read: "The 11 SGFP will trip and the MDAPW pumps will auto start. The TDAFW pump will start if S/G levels drop to the lo lo level setpoint." Revise stem to make power level higher. No need to change C
51	H	2.5	X		X		A, B						Y	N	N	N	E	Q52 Capitalize "ONE MINUTE". "B" - change "interlock" to "isolation" and add "SGFPs will not trip". If "A" was correct - then "B" is a subset answer. "C" and "D" not related to feedwater - does not test the K/A? almost a T/F question. See proposed revision. Will make revision
52	H	2	X			A,B							Y	N	N	N	S	Q53 Typo in A & B "following." A & B - Why would some one think that overcooling is a concern when an AFW pump fails to start? Q is more about operator action than AFW system response? Agree - "A" and "B" are not credible distractors Explained why A and B were plausible. Has to do with site specific orientation of AFW system!
53	H	3											Y	N	N	M	S	Q54 Why does "MODE II" have an ""? Single bus undervoltage
54	H	3											Y	N	N	B	S	Q55 Does the last sentence of the explanation make sense ??? Yes - to me.

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55	F	3											Y	N	N	N	E	Q56 - how does this test part "A" - predicting the impact of the ground? Should applicants have to memorize the threshold for UNSAT grounds on a DC bus? Is this relevant to the job? Yes - need to know - will get back Revised to test implications
56	F	2					B						Y	N	N	N	S	Q57 Is it plausible that a standing order could be written? I am OK with this one. Verified answer was correct and unique
57	H	3				A							Y	N	N	N	E	Q58 Distractor "A" - will run until its day tank and 7 day tank is empty. "unless it is manually shutdown" conflicts with "NO operator action." Agree Will revise A
58	F	2.5					C,D						Y	N	N	N	S	Q59 Are C & D true statements? Does not test part a of K/A. Why not? Could it be tested? No - adding the impact would make the question too simple - i.e. the impact is you can't release...
59	H	2	X			C, D							Y	N	N	B	E	Q61 (missing Q60) C & D don't seem credible. Perhaps 40 and 400r/hr??? Agree - NRC exam bank question Revise 3 and 4
60	H	3											Y	N	N	B	S	Q62 Which is the real KA? - Why was K/A 2.1.19 suppressed? 2.1.39 is from new Catalog - conservative decision making. Salem blew up a turbine - they hold their people responsible to know this
61	F	2				C,D							Y	N	N	N	S	Q63 Given that SW 308 & 311 are overpressure valves, why are C & D plausible. Agree - explain plausibility or revise C and D. Consider C. SW pumps trip on low suction pressure. D. [valve] shuts to isolate the SW trains. These valves are real and will open to reduce service water header pressure - not like a relief valve. It is wrong because they are not opned at this pressure.
62	F	2.5	X										Y	N	N	N	S	Q64 Is there a discernable difference between 80 and 85#? Testing knowledge of setpoint only. At 80 psig - the operators have direction to trip the reactor. This is the pressure where valves start moving around. They expect their opertaors to know this
63	F	3				B							Y	N	N	B	S	Q65 Why is B plausible if there are no flow indications on 2RP5? Agree OK as is - no change required
64	H	3				A							Y	N	N	NRC	E	Q66 A is not plausible. Is "D" testing minutia? "D" is a tech spec - we expect them to know. A - replace distracter
65	F	3	X						X				N?	N	N	N	U	Q67 Capitalize "REQUIRED" Important to know from memory? Is this KA appropriate for a written exam - making verbal reports? This is really just reading a written report. Either change the K/A or replace the question
66	F	2											Y	N	N	NRC	S	Q68
67	H	4.5											Y	X	Y	N	U	Q69 SRO level question. Providing a reference cues the applicants to correct answer. Will get back

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68	F	3											Y	N	N	N	S	Q70 KA seems to be a stretch as the Q deals with a mode 6 condition vs something directly related to refueling. Does not match the K/A selected in the sample plan. 2.2.26 was not selected? This question is matched to 2.1.40. OK
69	H	3.5				C		X					Y	?	N	N	E	Q71 Seems like an SRO level Q. Combination of A, B and C together makes A, B and C not plausible. All Tech Specs are on associated equipment and are not required to be invoked (cascaded) under 3.0.4. Can fix by replacing C OK to replace C - not SRO level - this concept is important for ROs to know.
70	F	2.5					A						Y	?	N	N	E	Q72 A is subtle "...MUST be made in person." K/A is not correct - the new K/A is different but still fits. Is this RO level of knowledge? Has a valid learning objective for RADCON E003? RADCON is a ILT objective - not a RAD Worker objective. ROs are responsible. Revise "A"
71	F	3.5					B		X				Y	N	N	N	U	Q73 Is B a conservative action that could be done and would be correct? This is not required knowledge from memory. How would someone know this unless they were experienced in this evolution? Does not test learning objective and K/A is broad. No reference provided. Will replace
72	F	2.5											?	?	N	B	S	Q74 Seems like a stretch for the KA - maybe?? Agree - radiation releases means controlled releases. Also, knowledge of tech spec bases has traditionally been reserved for SRO level. Will get back to us Question is considered appropriate for ROs
73	F	2.5											Y	N	N	N	S	Q75
74	F	3											X	N	N	M	S	Q76 Q is about DG alignment/response vs knowledge of a fire protection procedures. Need to discuss with licensee? Tests the fire emergency bypass switches - fits K/A
75	H	3.5											Y	N?	Y	N	S	Q77 Possibly an SRO level Q. - Disagree - ROs actually make this adjustment OK as is

Total	75	2.9	23	0	1	22	11	2	11	0	0	5	75	75	75	Sum
F	35	46.7%							U		B	Bank =	28%	21	10	UNSAT
H	40	53.3%							E		M	Modified=	11%	8	29	Enhancement required
		100.0%							S		N	New =	57%	43	36	SATISFACTORY
											NRC	Exams=	4%	3	75	Total graded
														75	13.3%	% UNSAT

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1	H	2				d							y	y	B	S	Explain why D is plausible? Change distractor A to E-2 faulted SG -perhaps more plausible than LOPA-1. E2 is considered to be less plausible - OK as is
2	H	4											y	y	N	S	Consider adding "IAW Opxxx" to 3rd bullet in stem? Add RWST level is "high" in the stem to clarify that A and D are incorrect. Procedures listed in selections - assumption is RWST is within limits - so it is high
3	H	3											N	y	N	U	It appears that the correct answer may be incorrect. The distracter analysis states that a leak in R19A "would not cause counts to rise". This seems to imply that VI is not correct - in which case "D" is incorrect and there is no correct answer. KA match - Q about radiation in CCW system vs a loss of CCW. Revised answers to make D correct - deleted VI and added I.
4	H	4											Y	Y	N	S	
5	H	4											Y	Y	N	S	TSAS 3.3.1.1 - should we reference an action statement or state the action? This is how we say it Terminology "block P 6" - should this be rephrased to "manually block the source range high flux trip"? P-6 either defeats or manually blocks the source range high flux trip. Change to "block source range high flux trip."
6	H	4											Y	Y	N	E	The stem asks for the "least useful" indication. This requires the applicant to make a subjective judgment. The question should be re-written to eliminate the "least useful" terminology. Proposed change - "Which one of the following statements correctly describes the parameter and trend that would identify that 24MS167 has failed to shut?" Proposed changes were accepted.
7	F	4											Y	Y	N	S	Verify this is memory level knowledge. Difficult Q due to memorizing procedural details and differences. Last sentence of answer explanation obviously does not apply. Revise last sentence to make it correct
8	F	4											Y	Y	N	S	I think this is comprehensive level of knowledge. Is the term "unmonitored release" defined anywhere in plant procedures? Not defined - question validated OK - accept as is
9	F	2				A	B,C						Y	N	N	E	This is not SRO level but it addresses the K/A. Can we add another element to make it SRO level? "A" not plausible. B could be a correct choice depending upon interpretation of "directly"? Perhaps capitalize DIRECTLY. Revised to test EAL call - as we proposed.
10	H	3				C							Y	Y	N	E	Can we make distracter "C" more plausible? Suggest changes to question to eliminate "C" and replace with revised format. Will replaced distracter C

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11	H	3	X										Y	Y	N	E	"explains" vs identifies. Typos Made change
12	F	3					C	A,B					Y	Y	B	S	If FRCE directs operators to follow LOCA-5, which procedure are they actually implementing? LOCA-5 is the correct procedure - but "C" is not very plausible. Suggest changing C to complete LOCA-5 then immediately transition to FRCE-1. C is plausible because Salem does not swap containment spray suction to the sump when the ECCS suction swap to the sump. CNMT Spray continues to take suction from the RWST and will be swapped later. Suggest this is comprehensive LoK?
13	F	3											Y	Y	B	S	1. Verify WG-00006 P&L 3.7 is not met or distracters C and D. 2. Provide reference that correlates loss of Aux Bld Air D/P low alarm with failure of Aux Bld fans. Caution on page 10 of WG0006 states clearly that alarm = termination
14	H	3					D						Y	Y	B	E	Why add "since 23BF40 flow is small compared to 23BF14 flow" to distracter "D". This explanation is not added to any other distracters? The explanation is true so it makes the distractor more plausible - also a "since" explanation was added to "C".
15	F	2											Y	N	N	U	Not really SRO level of knowledge - more like NLO. Asks for knowledge of ST procedure steps from memory. Recommend replace or revise question - consider replacing K/A. Replace with EDG tech spec question
16	H	3	X				D						Y	Y	M	S	Q17 Lengthen D for the sake of being parallel to other distractors. Handout only included the attachment vs the procedure. Is it necessary to provide the entire curve book??? Why is "C" plausible (4.33 hrs?). Need to walk through the question with the references. "C" is plausible because this would be the correct recirc time for discharging the CVCS monitor tank - wrong tank curve.
17	F	2					D	A,B					Y	Y	N	E	Q18 "always" flags choice D as not being a legitimate choice. What is the correct answer - A or B? Distractor analysis seems disjointed. Revise answer explanation to be consistent with distracters - delete "Always" in "D"
18	F	3											Y	Y	N	S	Q19 We thought this may be comprehension LoK
19	F	1						A,C					Y	Y	B	S	Q20 Choice C will eventual lower Li. Change Q to have SRO recognize a high Li condition and then take action. Not sure they should have memorized the Li concentration limits? Let's discuss. Do not think this is LoK 1 Accept as is

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20	H	2											Y	Y?	N	S?	Q21 While I think that "C is the best answer, how do you defend "C" as being the only correct answer using the referenced procedure? Is this really SRO level of knowledge? Try to make "C" tighter - reference another procedure?
21	F	2				C							Y	Y	N	E	Q22 Distractor analysis does not correspond with the Q. "C" is not plausible - change to "Director of Work Management" Will make change as requested
22	H	2				A							Y	Y	M	E	Q23 Where does the value 4775 Mrem come from to make it plausible? Change ankle X-ray to chest X-ray - whole body exposure vs extremity exposure Consider adding 50 Mrem exposure to right forearm or some other 50 Mrem exposure that does not count to make "A" plausible. Will make changes as noted to stem and to "A"
23	H	1					C,D						Y	N	N	U	Q24 Q assumes that the worker will enter the RCA. Instead of nuclear worker use a primary NPO - or describe path of worker in stem (i.e. entered PA, entered RCA, departed RCA, departed PA.) Pretty simplistic - only requires knowing location of monitors, nothing about what the monitors will/will not detect. Not SRO level of knowledge - replace question Will replace question
24	F	2	X			B							Y	Y	M	E	Q25 Typo - two periods in choice B. Also, in B, what is "Loss Fire Protection"? Why is "B:" plausible? Choice D states "Notification" whereas answer explanation states "AR" - does this matter? Verify title of the superintendent - change AR to notification
25	F	3					A-D			X			Y	Y	N	S	Q26 Could any of the conditions trigger an Alert based upon ED judgement? Are SRO required to memorize the EALs? Providing EALs - note EALs in reference material required. Applicants are told NOT to use ED judgment when making EAL calls -
Total	25	2.8	3	0	0	10	6	0	1	0	0	0	1	3	25	25	Sum
F	12	48.0%											U	B	5	3	UNSAT
H	13	52.0%											E	M	3	9	Enhancement required
		100.0%											S	N	17	12	SATISFACTORY
														Total	25	24	Total Graded
														0	1	1	Number not graded
															12.5%	12.5%	% UNSAT

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
1	H	2											Y	y	B	S	Explain why D is plausible? Change distractor A to E-2 faulted SG -perhaps more plausible than LOPA-1. E2 is considered to be less plausible - OK as is
2	H	4											Y	y	N	S	Consider adding "IAW Opxxx" to 3rd bullet in stem? Add RWST level is "high" in the stem to clarify that A and D are incorrect. Procedures listed in selections - No need to state that RWST is high - the assumption is RWST is within limits - so it is high
3	H	3											Y	y	N	S	It appears that the correct answer may be incorrect. The distractor analysis states that a leak in R19A "would not cause counts to rise". This seems to imply that VI is not correct - in which case "D" is incorrect and there is no correct answer. KA match - Q about radiation in CCW system vs a loss of CCW. Revised answers to make D correct - deleted VI and added I.
4	H	4											Y	Y	N	S	
5	H	4											Y	Y	N	S	TSAS 3.3.1.1 - should we reference an action statement or state the action? This is how we say it Terminology "block P 6" - should this be rephrased to "manually block the source range high flux trip"? P-6 either defeats or manually blocks the source range high flux trip. Change to "block source range high flux trip." - DONE
6	H	4											Y	Y	N	S	The stem asks for the "least useful" indication. This requires the applicant to make a subjective judgment. The question should be re-written to eliminate the "least useful" terminology. Proposed change - "Which one of the following statements correctly describes the parameter and trend that would identify that 24MS167 has failed to shut?" Proposed changes were accepted. DONE
7	F	4											Y	Y	N	S	Verify this is memory level knowledge. Difficult Q due to memorizing procedural details and differences. Last sentence of answer explanation obviously does not apply. Revise last sentence to make it correct - DONE
8	H	4											Y	Y	N	S	I think this is comprehensive level of knowledge. Is the term "unmonitored release" defined anywhere in plant procedures? Not defined - question validated OK - accept as is
9	H	2											Y	N	N	S	This is not SRO level but it addresses the K/A. Can we add another element to make it SRO level? "A" not plausible. B could be a correct choice depending upon interpretation of "directly"? Perhaps capitalize DIRECTLY. Revised to test EAL call - as proposed. DONE

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
10	H	3											Y	Y	N	S	Can we make distracter "C" more plausible? Suggest changes to question to eliminate "C" and replace with revised format. Will replaced distracter C - Replaced C
11	H	3											Y	Y	N	S	"explains" vs identifies. Typos Made change
12	H	3											Y	Y	B	S	If FRCE directs operators to follow LOCA-5, which procedure are they actually implementing? LOCA-5 is the correct procedure - but "C" is not very plausible. Suggest changing C to complete LOCA-5 then immediately transition to FRCE-1. C is plausible because Salem does not swap containment spray suction to the sump when the ECCS suctions swap to the sump. CNMT Spray continues to take suction from the RWST and will be swapped later. Suggest this is comprehensive LoK? Changed to comprehension
13	F	3											Y	Y	B	S	1. Verify WG-00006 P&L 3.7 is not met or distracters C and D. 2. Provide reference that correlates loss of Aux Bld Air D/P low alarm with failure of Aux Bld fans. Caution on page 10 of WG0006 states clearly that alarm = termination This is clearly defined in 2.12
14	H	3											Y	Y	B	S	Why add "since 23BF40 flow is small compared to 23BF14 flow" to distracter "D". This explanation is not added to any other distracters? The explanation is true so it makes the distracter more plausible - also a "since" explanation was added to "C".
15	H	3											Y	Y	N	S	Not really SRO level of knowledge - more like NLO. Asks for knowledge of ST procedure steps from memory. Recommend replace or revise question - consider replacing K/A. Replace with EDG tech spec question New question - Tests loss of power and procedure to implement - Is there anyway that an applicant could implement Trip-1 and AB.LOOP-1 concurrently? It would be inappropriate ot enter AB.LOOP-1 at this point - might refer to it later but not here.
16	H	3	X										Y	Y	M	S	Previous Q17 Lengthen D for the sake of being parallel to other distractors. Handout only included the attachment vs the procedure. Is it necessary to provide the entire curve book??? Why is "C" plausible (4.33 hrs?). Need to walk through the question with the references. "C" is plausible because this would be the correct recirc time for discharging the CVCS monitor tank - wrong tank curve.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
17	F	2											Y	Y	N	S	Previous Q18 "always" flags choice D as not being a legitimate choice. What is the correct answer - A or B? Distractor analysis seems disjointed. Revise answer explanation to be consistent with distracters - delete "Always" in "D" - DONE
18	F	3											Y	Y	N	S	Previous Q19 We thought this may be comprehension LoK - discussed - decided memory level was appropriate based on facility justifications
19	F	2											Y	Y	B	S	Previous Q20 Choice C will eventual lower Li. Change Q to have SRO recognize a high Li condition and then take action. Not sure they should have memorized the Li concentration limits? Let's discuss. Do not think this is LoK 1 Accept as is
20	H	2											Y	Y	N	S	Previous Q21 While I think that "C is the best answer, how do you defend "C" as being the only correct answer using the referenced procedure? Is this really SRO level of knowledge? Try to make "C" tighter - reference another procedure? There are no other procedures that address this issue. Matches the K/A - facility standby by the operational validity of the question - OK
21	F	2											Y	Y	N	S	Q22 Distractor analysis does not correspond with the Q. "C" is not plausible - change to "Director of Work Management" Will make change as requested - DONE
22	H	3											Y	Y	M	S	Previous Q23 Where does the value 4775 Mrem come from to make it plausible? Change ankle X-ray to chest X-ray - whole body exposure vs extremity exposure Consider adding 50 Mrem exposure to right forearm or some other 50 Mrem exposure that does not count to make "A" plausible. Will make changes as noted to stem and to "A"
23	H	4											Y	Y	NRC	S	Q24 Q assumes that the worker will enter the RCA. Instead of nuclear worker use a primary NPO - or describe path of worker in stem (i.e. entered PA, entered RCA, departed RCA, departed PA.) Pretty simplistic - only requires knowing location of monitors, nothing about what the monitors will/will not detect. Not SRO level of knowledge - replace question Will replace question New question: provide actual RAD data for 2R12A - have RAD data exceed 50% not 2x Provide actual times for exit. Distracters - when exceed GREAT LOR question - probably too hard for ILT. Do you have a learning objective for containment entries? Used on last 2 NRC exam should be good

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
24	F	2.5											Y	Y	M	S	Previous Q25 Typo - two periods in choice B. Also, in B, what is "Loss Fire Protection"? Why is "B:" plausible? Choice D states "Notification" whereas answer explanation states "AR" - does this matter? Verify title of the superintendent - change AR to notification DONE
25	F	3											Y	Y	N	S	Previous Q26 Could any of the conditions trigger an Alert based upon ED judgement? Are SROs required to memorize the EALs? Providing EALs - note EALs in reference material required. Applicants are told NOT to use ED judgment when making EAL calls - DONE
Total	25	3.0	1	0	0	0	0	0	0	0	0	0	0	1	25	25	Sum
F	8	32.0%											U	B	5	0	UNSAT
H	17	68.0%											E	M	3	0	Enhancement required
		100.0%											S	N	16	25	SATISFACTORY
													NRC	NRC=	1	25	Total Graded
														Total	25	0	Number not graded
															0	0.0%	% UNSAT

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. 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											Y	N	N	S	Possibly replace B with High PR trip. Good question but it does not test knowledge of the bank step counters. Change the K/A to match the question. Good question - step counters are tested in another question. Did not change B? B is considered plausible after further discussion - high power range trip would be a second correct answer
2	H	3											Y	N	N	S	Capitalize "one minute" in stem. Choice A - Is 45% too close to 33%. Give actual parameter values for "B" and "D". Will lower seal injection by 2 gpm. Will lower HX CCW flow by ?? - TBD 45% is sufficiently high to discriminate from 33%. Revised B and D as requested - OK
3	H	3.5											Y	N	N	S	Do ROs have to know how to make procedure transitions? Will get back with answer Yes - ROs are required to know procedure transitions
4	F	2											Y	N	NRC	S	Why is "B" plausible - why would someone think injection sources should be isolated during a LBLOCA? This question was used on the last 2 NRC exams so it should be OK
5	H	3											Y	N	B	S	
6	H	3.5											Y	N	N	S	Move "RHR HX Bypass" to A. Better yet - rearrange stem and choices so that both valves are in the stem - or both valves are in the choices - but not split. This tests knowledge of a subsequent action in an attachment to an AOP. Is this fair? Should the applicant know this based on system knowledge alone? Will verify this is RO level of knowledge - had a high miss rate by ROs during validation. If used - will rearrange distracters to clarify Substantially revised question to test concept - not procedure steps
7	H	2.5											Y	N	N	S	A - why plausible in mode 1 (RHR HX)? Replace "A" - add "by 50% without exceeding limits to last sentence in stem. Revised as directed
8	F	2.5											Y	N	B	S	Controllers and positioners not in Q - But isn't this implied? Can we get controllers or positioners into the stem? Draft K/A match analysis completed - accept as is

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q=K/A	SRO only				
9	H	3											Y	N	N	S	Replace "CRS" with "crew." Based upon answer explanation B could be correct. Edit B and D to say "under any conditions" or such. I am OK with their wording. Verify this really RO level of knowledge at Salem. This is memory level of knowledge - you have either memorized the step/bases or not. High miss rate on validation - will review and get back to us. Decided this was really higher LoK after discussions with DMS. Licensee states this is RO level of knowledge. Accept with changes to B
10	F	2.5											Y	N	N	S	Choice A sounds like a good operator practice - possibly technically correct??? Time is wrong - 10 minutes not correct good distracter. Add "required by the FSAR" in the stem Will add FSAR Change IAW FSAR to required by FSAR - typo in answer explanation "reason is tp prevent..." Will do DONE
11	F	2.5											Y	N	N	S	
12	H	3											Y	N	N	S	Could C be construed as a subset of D?? Does not test K/A - nothing about the implications of the introduction of feedwater on a dry S/G. Revise question to add in the implications - recommended changes on reverse page Will consider changes Made revisions as requested
13	F	2											Y	N	B	S	Choice D is worded awkwardly??? Q seems somewhat simplistic. Not sure how to enhance. Proposed enhancement to add when are FRPs effective and why (reverse side of question). Will review proposed change and let us know Did not accept proposed change Changed D to enhance plausibility
14	H	3											Y	N	N	S	Capitalize "not" in 3rd bullet. 115 F is choice D doesn't match with 105 F in answer explanation. Expected to know what comes off of P-250??? Agree - proposed revision tests where P-250 gets power and what temperatures are reasonable Proposed change to question to explicitly test loss of power Revised as requested
15	F	2.5											Y	N	M	S	A seems to be correct based upon answer explanation. "A" is not the bases - but is likely a factor - testing minutia (memorize the bases for an ARP caution). Replace "A" with something clearly incorrect. "A" is incorrect - consider changing "A" - high miss rate on validation - A is considered to be plausible and not correct
16	F	4.5											Y	N	N	S	Do we expect applicants to memorize the bases for NOUES? This may be LoD 5. Replace question - reselect K/A Reselected and replaced

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
17	F	3.5											Y	N	N	S	Choice A - is RCS may already be at CSD boron concentration??? Mode 4 - may be - change to mode 3 and state boron concentration? Are we testing minutia - knowledge of AOP bases for subsequent action step? Last sentence in "D" does not make sense with 1st sentence? Change IC to mode 3 and remove last sentence in "D" Revised as discussed - valid Learning objective
18	F	3											Y	N	N	S	Q asks about Class "B" but answer explanation talks about Class "C." ??? What is DFOST???? DFOST = Diesel Fuel Oil Storage Tank. Revise answer explanation to correlate with question. The DFOST has an oil fire and suppression is from a CARDOX system (CO2) Is this memory level? Changed to memory level
19	F	2											Y	N	B	S	C (spray actuation) not plausible for causing high containment press. Replace with feedline break in CNMT. Good question but not really testing the K/A - but the K/A is very simplistic (effects of pressure on leak rate)? Draft K/A match analysis. Add "mass leakage" to stem. DONE
20	H	2											Y	N	N	S	Instead of stating that offsite power was lost, provide applicants with condenser vacuum value or circ pumps have tripped and they can assess if main steam dumps are available???? I am OK with LOOP - consider changing C to PZR spray valve. Distracter C was picked because 25% steam dump capacity is the normal cooldown rate - this is plausible. Rearrange stem as discussed. Decided to change C to lower RCS pressure using spray valves - ok
21	H	4											Y	N	B	S	Capitalize LOCA in 1st bullet. Specify 2B EDG in stem. Don't see the KA connection to this Q. Write K/A match analysis or replace question Will replace question New question - question is OK - answer explanation does not correlate with question Replaced question - corrected answer explanation - DONE
22	F	2											Y	N	M	S	Seems too simplistic. Perhaps provide a list of various symptoms and choose those related to LOCA outside CNMT. Proposed change to test which system and why. Used on recent NRC exam at Prairie Island. Revise question as proposed - Revised OK - now modified question
23	F	2											Y	N	N	S	A and D have actions, B and C are just reasons. Add actions to B and C i.e return to LOCA-1 last step... See proposed revision Will do Revised as requested

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
24	H	3											Y	N	B	S	Of the choices A is very obvious. Other distractors don't seem to be very discriminating. "B" and "D" are not plausible Replace Reselected K/A after spending an inordinate amount of time trying to draft a question - replaced question New question - revise c and d to read "Has been established" vice occurring. Change made as requested
25	H	2.5											Y	N	B	S	Delete dashes in 2nd set of bullet.(i.e., "-10 F" indication of superheat????) Reword stem to ask for the alignment that meets minimum heat removal while minimizing RWST depletion. Revise distractors C and D Revised as directed - state reference provided in stem - DONE
26	H	2.5											Y	N	B	S	Verify correct answer in TRIP-1 vice LOSC-1/2 (E2) OK as is
27	H	3.5											Y	N	B	S	This is different from what would be predicted by the pump curves - bypass flow is higher. Is this a fair question? Licensee retained this question
28	F	4											Y	N	B	S	Interesting but not operationally oriented. "D" is not plausible for Mode 6. Is this a fair question? Change D to RCDT - this is considered fair
29	F	4											Y	N	N	S	Choice A is (over)conservative??? It is the AL3 action statement - therefore is A plausible. Do you hold your ROs responsible for this level of knowledge? Will get back to us
30	H	2.5											Y	N	B	S	Licensee retained this question What is C7? = Letdown isolations valve
31	H	2.5											Y	N	N	S	Reference needed for this question??? C is too ambiguous - would expect RCS boron to increase a little. Little = "approximately the same"? The distracter analysis says no reference is provided? The stem points to the exact reference. 1. Do they need a reference? 2. Distracter D is a correct statement - make it wrong. Do the applicants have to know cold shutdown boron concentration at EOL from memory? Learning objective is from LOR? Consider providing the reference and ask for exact change? Or ask what happens and why. Remove reference in stem - DONE
32	H	3											Y	N	N	S	Question 31 states that curve book S1.RE.RA.ZZ-0016 will be provided as a reference. Does this include the S1 pump curve which makes this question pretty easy. SI Pump curve not provided in Q31 Resolve LoK - discussed LoK - convinced me that this is H. Not at either end of the pump curve - have to interpolate mentally using pump curve laws

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
33	F	4											Y	N	N	S	Requires operators to have memorized the design bases seal leakage from an RHR pump in the FSAR. This is not generally expected knowledge from memory. Verify that this is expected knowledge (learning objective is not specific). Can use question if delete the 50 gpm and revise distracter "D" "D" is wrong for injection phase. OK
34	H	3											Y	N	N	S	This requires detailed knowledge of an infrequently performed procedure from memory (step 5.3.5 in S1.OP-SO.RC-002). BUT there is a learning objective ("major precaution and limitations"). Is this a major precaution? This does not match the K/A - this is about drawing a bubble in the PRT not the PZR. Replace question Will get back Revised question to test the K/A but still requires knowledge of infrequently performed procedures? Revise B - correct answer is D not B - Corrected as requested
35	F	3.5											Y	N	N	S	Delete "Given the following conditions" because there is only one condition. Why is knowing this from memory important??? How does this test the "system implications" part of the K/A? Will get back Revised question to test system implications - revise stem as previously requested - DONE
36	H	2.5											Y	N	M	S	The K/A is to test how a malfunction in the PZR PCS effects the RCS. Need to add in something about RCS pressure into each distracter. As it stands, this just tests the PZR PCS response. "B" seems implausible - do not expect code safeties to be the first response for an instrument failure. Consider changing "B" to "PZR Heater turn on and pressure slowly increases" which is correct. This would make "B" the correct answer because B happens before D. Will get back - revised as requested
37	H	3.5											Y	N	N	S	Are they required to memorize yellow path entry conditions? They would also have to have memorized the first step in FRCI-1. Yellow paths may be referred to - can an applicant claim that "B" is not correct because it could be entered and immediately exited. There may be no correct answer. Is this a fair question for ROs? question is considered fair and B is correct - OK
38	F	2											Y	N	N	S	Why are B & C plausible if there is no self test feature? Furthermore, it is not an operator actions/responsibility. Does not test K/A explicitly. Does not test knowledge of design features or interlocks. Replace question Minor revisions do not correct problems Replace New question - typos in stem "form vice from" - roid vice rod in answer explanation. Corrected typos

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
39	F	2.5											Y	N	M	S	Q40 Typo - desinged vs designed. What does PZR low pressure have to do the power density limits? Can you replace "D" with high flux (high power)? Replaced C and D Why are they plausible? Discussed at length - allowed to remain as is. DONE
40	H	3											Y	N	N	S	Q41 Why is a 1 second inadvertent SI chosen as the stem condition? Is there anything important about 1 second? Removed 1 second
41	H	3											Y	N	B	S	Q42
42	H	3.5											Y	N	M	S	Q43 Delete the last zero in "100.0%" - possible cue. What is the correct answer C or D as per the key? "A" does not appear to be plausible. Why would a high level condition cause a locked in low level alarm? Will explain linkage - noted in answer explanation
43	F	4.5											Y	N	M	S	Q44 Is it reasonable for operators to memorize power supplies to HSD panel indications??? Will revise - Revised - answer explanation states CCW hdr pressure is not present in the CR? True statement
44	H	3											Y	N	M	S	Q45 Editorial change to stem - remove "will".
45	H	3											Y	N	N	S	Q46 Typo - remove first "will." Distractor C is vague and needs a reason to be parallel with other choices. Why would D be wrong? The stem implies that the failure of 21RH4 to close is addressed in the EOPs in the context of containment spray. Will this be confusing? No leave as is
46	F	2											Y	N	B	S	Q47
47	F	2.5											Y	N	N	S	Q48
48	F	2.5											Y	N	B	S	Q49 Need better explanation of answer/distractors. Could "A" be correct? A is not correct - Added to answer explanation
49	H	3.5											Y	N	B	S	Q50
50	H	3											Y	N	N	S	Q51 For distractor C 11SGFP "trips" or loses steam supply. C is incorrect because SGFP will not trip. Lo lo level vs SG level shrink? Revise distractor "C" to read: "The 11 SGFP will trip and the MDAFW pumps will auto start. The TDAFW pump will start if S/G levels drop to the lo lo level setpoint." Revise stem to make power level higher. No need to change C - discussed
51	H	2.5											Y	N	N	S	Q52 Capitalize "ONE MINUTE". "B" - change "interlock" to "isolation" and add "SGFPs will not trip". If "A" was correct - then "B" is a subset answer. "C" and "D" not related to feedwater - does not test the K/A? almost a T/F question. See proposed revision. Will make revision - add "SGFPs will not trip" to B DONE

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
52	H	2											Y	N	N	S	Q53 Typo in A & B "following." A & B - Why would some one think that overcooling is a concern when an AFW pump fails to start? Q is more about operator action than AFW system response? Agree - "A" and "B: are not credible distracters Expained why A and B were plausible. Has to do with site specific orientation of AFW system'
53	H	3											Y	N	B	S	Q54 Why does "MODE II*" have an "***"? * means single safety bus undervoltage - defined in tech specs
54	H	3.5											Y	N	B	S	Q55 Does the last sentence of the explanation make sense ??? Yes - to me.
55	F	3											Y	N	N	S	Q56 - how does this test part "A" - predicting the impact of the ground? Should applicants have to memorize the threshold for UNSAT grounds on a DC bus? Is this relevant to the job? Yes - need to know - will get back Revised to test implications
56	F	2											Y	N	N	S	Q57 Is it plausible that a standing order could be written? I am OK with this one. Verified answer was correct and unique
57	H	3											Y	N	N	S	Q58 Distractor "A" - will run until its day tank and 7 day tank is empty. "unless it is manually shutdown" conflicts with "NO operator action." Agree Will revise A - Also revise D to delete "to fuel oil transfer pumps - typo in B - indefinitely - DONE
58	F	2.5											Y	N	N	S	Q59 Are C & D true statements? Does not test part a of K/A. Why not? Could it be tested? No - adding the impact would make the question too simple - i.e. the impact is you can't release...
59	H	2											Y	N	B	S	Record #61 (missing Q60) C & D don't seem credible. Perhaps 40 and 400r/hr??? Agree - NRC exam bank question Revise 3 and 4 - Revised as discussed - change to modified Did not change stem - so leave as Bank
60	H	3.5											Y	N	B	S	Q62 Which is the real KA? - Why was K/A 2.1.19 suppressed? 2.1.39 is from new Catalog - conservative decision making. Salem blew up a turbine - they hold their people responsible to know this
61	F	2											Y	N	N	S	Q63 Given that SW 308 & 311 are overpressure valves, why are C & D plausible. Agree - explain plausibility or revise C and D. Consider C. SW pumps trip on low suction pressure. D. [valve] shuts to isolate the SW trains. These valves are real and will open to reduce service water header pressure - not like a relief valve. It is wrong because they are not opened at this pressure.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
62	F	2.5											Y	N	N	S	Q64 Is there a discernable difference between 80 and 85#? Testing knowledge of setpoint only. At 80 psig - the operators have direction to trip the reactor. This is the pressure where valves start moving around. They expect their operators to know this
63	F	3											Y	N	B	S	Q65 Why is B plausible if there are no flow indications on 2RP5? Agree OK as is - no change required - discussed why B is plausible
64	H	3											Y	N	NRC	S	Q66 A is not plausible. Is "D" testing minutia? "D" is a tech spec - we expect them to know. A - replace distracter - replaced A
65	F	4											Y	N	N	S	Q67 Capitalize "REQUIRED" Important to know from memory? Is this KA appropriate for a written exam - making verbal reports? This is really just reading a written report. Either change the K/A or replace the question New question - need to state IAW [procedure] in stem. Need to reference procedure and provide copy to us. Reference does not provide solid clarity. Discussed at length with the licensee. Agreed to accept as is based on their insistence that they hold their people accountable for this knowledge
66	F	2											Y	N	NRC	S	Q68
67	H	4.5											Y	N	N	S	Q69 SRO level question. Providing a reference cues the applicants to correct answer. Will get back - Indicate reference is provided in stem without saying what reference is. Corrected
68	F	3											Y	N	N	S	Q70 KA seems to be a stretch as the Q deals with a mode 6 condition vs something directly related to refueling. Does not match the K/A selected in the sample plan. 2.2.26 was not selected? This question is matched to 2.1.40 - knowledge of refueling administrative requirements - OK
69	H	3.5											Y	N	N	S	Q71 Seems like an SRO level Q. Combination of A, B and C together makes A, B and C not plausible. All Tech Specs are on associated equipment and are not required to be invoked (cascaded) under 3.0.4. Can fix by replacing C OK - replace C - not SRO level - this concept is important for ROs to know.
70	F	2.5											Y	N	N	S	Q72 A is subtle "...MUST be made in person." K/A is not correct - the new K/A is different but still fits. Is this RO level of knowledge? Has a valid learning objective for RADCON E003? RADCON is a ILT objective - not a RAD Worker objective. ROs are responsible. Revise "A" OK

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N NRC	7. U/E/S	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Backward	Q=K/A	SRO only				
71	H	3											Y	N	B	S	Q73 Is B a conservative action that could be done and would be correct? This is not required knowledge from memory. How would someone know this unless they were experienced in this evolution? Does not test learning objective and K/A is broad. No reference provided. Will replace - New question: Remove DAC-hrs to ALI to dose thumb rule - even NRC inspectors have to memorize this thumb rule - change A to 412.5 - unlikely that applicant will forget to include TEDE dose - instead add 3-hr TEDE dose with 5-hr CEDE dose Agreed to allow DAC-ALI thumb rule to remain in question (not required to memorize) - made changes as requested to A.
72	F	2.5											Y	N	B	S	Q74 Seems like a stretch for the KA - maybe?? Agree - radiation releases means controlled releases. Also, knowledge of tech spec bases has traditionally been reserved for SRO level. Will get back to us Question is considered appropriate for ROs
73	F	2.5											Y	N	N	S	Q75
74	F	3											Y	N	M	S	Q76 Q is about DG alignment/response vs knowledge of a fire protection procedures. Need to discuss with licensee? Tests the fire emergency bypass switches - fits K/A
75	H	3.5											Y	N	N	S	Q77 Possibly an SRO level Q. - Disagree - ROs actually make this adjustment Indicate reference is provided DONE
Total	75	2.9	0	0	0	0	0	0	0	0	0	0	0	75	75	75	Sum
F	35	46.7%	40-50%														UNSAT
H	40	53.3%	50-60%														Enhancement required
	75	100.0%															SATISFACTORY
																	Total graded
																	75
																	0.0%
																	% UNSAT

Comments on 75-day Sample Plan Submittal:

Note – the last NRC exam was held December 11-18, 2006. The class consisted entirely of SROs.

ADAMs did not have the final ES 301-1/2 forms, only the draft forms. There may not have been any changes?

1. Admin JPMs:

- 1 potential SRO repeat from 2007 exam – Emergency Plan – classification. Will this JPM be performed at the end of scenarios or separately? **ANS: JPM will be performed at the end of each scenario.**
- 1 potential RO repeat from 2007 exam – Calculate SDM (vs. review SDM) – not noted as a repeat JPM on sample plan? **ANS: Will review.**

2. Simulator JPMs

- RO JPM “h” appears to be very similar to 2007 exam JPM “h” – reads “Start 21 CCW pump IAW APPX-1” vs. “Perform CCW pump restoration IAW APPX-1”. This JPM is not listed as a repeat on this exam – but was listed as a repeat on the 2007 exam. **ANS: Will review.**
- JPM “e” on the sample plan (“Perform CFCU operability and service water flow verification”) is listed as an alternate path JPM for SROs but not an alternate path JPM for ROs. What is the difference? **ANS: The alternate path drives the SRO into making a tech spec determination.**

3. Simulator Scenarios:

- The licensee is counting the component failures that occur after the major plant transient on form ES 301-5. ES 301 (page 17) states:
“The required instrument and component failures should normally be completed before starting the major transient; those that are initiated after the major transient should be carefully reviewed because they may require little applicant action and provide little insight regarding their performance.”
These events may be counted as component failures if they are carefully reviewed during the exam validation week.
- The licensee is counting the same normal evolution for reactivity and normal events on the ES 301-5 form. This is not allowable per ES 301 (page 17):
“With the exception of the SRO TS evaluations, each event should only be counted once per applicant; for example, a power change can be counted as a normal evolution or as a reactivity manipulation and, similarly, a component failure that immediately results in a major transient counts as one or the other, but not both.”
- The licensee is double counting events – a single component failure is counted for both the RO and PO.
- After re-evaluating the total number of scenario requirements, the scenario set for RO-2(4) will not get enough component failure unless we count component failures that occur after the major plant transient. All other minimum requirements are met – but some have no margin if the another applicant “gets the bean”.
- ESG1 (SGTR)

- The RO gets a reactivity manipulation; the PO gets a normal event.
- Will need to look at PZR level channel failure to see if both RO and PO can get credit for one event. This is likely not to happen.
- ESG-2 (LBLOCA – low power scenario)
 - The RO gets a reactivity manipulation; the PO gets a normal event
 - We will need to look at the sequence of events on the reactor trip. If the reactor is tripped manually due to a loss of auto and manual rod control, then the major transient initiates coincident with the trip and therefore - the MDAFW pump trip occurs after the major transient.
 - The component failures that are inserted after the major malfunction (LBLOCA) are generally considered part of the major transient, not as separate component failures.
- ESG-3 (Feedwater Rupture)
 - The RO gets a reactivity manipulation; the PO gets a normal event
 - The SGFP oil leak cannot count as both a reactivity event and a component failure - best fits a component failure.
 - The RO and PO cannot get “credit” for events 1 and 2 – one bean for each applicant only.
 - The feedwater discharge header rupture with MSLI failure – will reduce pressure and level in the S/G – why does the S/G code safety open? Does this occur when pressure is very low?
 - Will need to look at malfunction 5 (loss of a single 4KV group bus fails to transfer) in the scenario to see if it truly qualifies as a component failure.
- ESG-4 (IS LOCA)
 - The sequence of events 2 and 3 needs to be clarified. This appears to be a single component failure and would be credited to either the PO or RO. I can agree to giving the RO credit for the reactivity event and the PO credit for a component failure.
 - The loss of the 4th circulator is a component failure, not a major event.
 - The LOCA is the major event, not a component failure.
 - The RO and PO cannot get credit for both a component and reactivity event for the event 2. They cannot get credit for another reactivity event in event 3.
- ESG-5 (Steam line rupture – Spare)
 - Cannot credit both the RO and PO for the event 2 and event 3.
 - Event 5 is part of the major transient event – not a stand alone component failure. Will need to evaluate in the simulator.

Salem NRC Initial Written Exam Comments: 7/30/08

1. The Sample plan ES 401-2 forms did not include question numbers in the extreme right-hand column. Can the written exam sample plan be provided with question numbers in the extreme right hand column? **ANS: Will provide.** The numbers provided do not match up with the question numbers on the test questions. Need to fix. **SRO Exam – missing record number 26 in ES 401-1/2 sample plan. RO Exam – Sample plan has correct record numbers**
2. Question numbering had a gap in each exam. SRO Test question #16 is missing from the exam (goes from 15 to 17). RO question #39 was also skipped (goes from 38 to 40) and RO question #60 (numbering goes from 59 to 61). This problem needs to be corrected for the final exam. **Still not fixed! SRO Exam – missing record number 26 in ES 401-1/2 sample plan. RO Exam – Sample plan has correct record numbers but record numbers do not match test question numbers. Will need a correlation to be made.**
3. The test questions did not cite references to the level of detail that would have facilitated locating the information. Generally, the reference section cited the applicable procedure but did not include the section or page of the reference. Some references cited in the questions were not included on the reference CD-ROM disk. Need to provide these references. **Noted – Salem did not correct this problem. They only provided additional references when references were specifically requested.**
4. The questions did not include a plausibility analysis (not required but helpful). Do you want to prepare this or shall we? They did not prepare – we reviewed each question. **This effort added many hours (~20) to the exam review.**
5. Can the written exam be provided in Word or PDF format for docketing and upload to INPO? **ANS: No this is too difficult. We will scan the hard copy.**
6. Written exam references – when references are provided, the question should not do tell the applicant what reference is appropriate to answer the question. Just indicate that a reference is provided. Some questions that require references do not state that references are provided. **NOT CORRECTED**
7. The ES 401-6 form needs to be filled out for each exam (i.e. 1 form for the RO exam, 1 form for the SRO exam). The 1st blank space in blocks 6 and 7 are for the number of questions. The second blank space is for the percentage. **DONE**
8. ES 401-6 block 5 states that the audit exam was developed systematically and randomly. Some K/As were suppressed on the bases that the K/A was on the audit exam. This is not necessary if the exams were developed using a systematic and random sample process. Do we have a document that states how it was developed? **Both exam were developed using the WOG Random K/A generator**

9. The submittal did not include a description of the sample plan selection methodology (PWROG Random Sample Plan Generator – β version). **DONE**
10. For those questions that were modified, no copies of the original bank questions were provided for comparison. **NOT DONE**

Salem Initial Exam – Operating Test Comments:

Simulator JPMs:

General Comments: The JPMs look good overall. We do not need to replace any JPMs based on our review. JPM E may not be adequately discriminating so we need to look at that one in the simulator.

1. Please consider establishing specific and objective task standards for operator performance. NUREG 1021 Appendix D states: “**The JPM must clearly identify the task standard (i.e., the predetermined qualitative and/or quantitative outcome) against which task performance will be measured.** Every procedural step that the examinee must perform correctly (i.e., accurately, in the proper sequence, and at the proper time) in order to accomplish the task standard shall be identified as a *critical step* and shall have an associated performance standard.”

2. Please ensure that the cue sheets match the 1st page of the JPM. Some examiners will read from the 1st page while the applicant is handed the cue sheet. In addition, cue sheets may not be included in the docketed test file.

NRC SIM A Respond to Main Turbine runback with malfunctioning rod control:

The JPM task standard should address when the applicant has to identify the problem with the runback circuit or the rod control circuit.

If the reactor trips, does this constitute a failure of the JPM? ***Would have to evaluate – probably. Add task standard.***

Does the reactor operator have responsibility for / respond to the main turbine control panel? ***The applicant will respond to this panel.***

Does the RO have responsibility to determine the applicable procedure? **Yes**

Change rod failure from 8 SPM to failed completely failed. **NOT DONE?**

NRC SIM B: Place the CVCS make-up control in the manual mode:

The JPM task standard should address the desired completion state – i.e. “Restore VCT level using manual make up and secure alignment”

Do we need to tell the applicant that the auto makeup function is INOP? Should this be diagnosed after the VCT high level alarm? ***Respond to the failure of the level transmitter. Lower VCT level to auto-makeup setpoint.***

Add cue to tell applicant that 61 or 63 GPM is close enough to 62 GPM.

NRC SIM C: TCAF failed open pressurizer spray valve:

The task standard should identify criteria for pass/fail. E.g. – manually trip the reactor prior to 2000 psig? What if SI initiation occurs or Rx trip prior to manual trip / stopping RCPs, etc. **Criteria added in task standard – fails if does not trip before getting auto trip. Fails if does not stop RCPs before SI initiates.**

Should we insert auto trip failure (Rx trip required if PZR pressure < 2000 psig)? Need to evaluate how fast pressure drops in simulator. ***Trips on OTDP at around 2000 psig. If the applicant takes an auto trip – failure occurs. Verify in simulator.***

The applicants are directed to go to TRIP-1 when the reactor is manually tripped. Should they be cued to continue on in AB.PZR-001? **Yes – this is clear in the AB.**

NRC SIM D: Swap operating RHR loops with one loop aligned for ECCS injection:
Task standard – make specific to JPM. **DONE**

Evaluate time to warm-up 22 RHR loop in step 5.6.2.G. Consider using time compression cue once applicant opens 22RH12. **Not required.**

NRC SIM E: Perform a CFCU operability and service water flow verification:
Make task standard specific to task. There are RO and SRO versions of this JPM. **DONE**

Need to evaluate the degree of difficulty when on site – may be too simplistic. Need to add system number to K/A. **Will add 022A4.05 – Safety function 5**

Typo in step C.6 for both RO and SRO

Delete “refer to TSAS” in initiating cue for SRO

Make changes to initial conditions – delete “for post maintenance run” and replace with for monthly test. Ensure 25 CFCU is added to handout page. **DONE**

NRC SIM F: Failure of a 2C 4KV Vital Bus to transfer to alternate source:
Make task standard specific to task. **DONE**

Add note explaining step 3.3 in procedure (charging pump running) **DONE**

NRC SIM G: Calculate RCS Subcooling during performance of LOCA-1:
Make task standard specific to task. **DONE**

Change this to an ADMIN JPM – run in simulator in freeze. **OK - Make RO ADMIN A2**

K/A cited is for SBLOCA which correlates to SF3 not SF7. Select SF7 K/A on title page. **Will do Change to 2.2.44**

The JPM does not allow simulator to run dynamically – containment pressure prevented from increasing. No switch manipulation. More like an ADMIN JPM. Recommend replace JPM. **Swapped this JPM to become ADMIN JPM A-2. Replaced with ADMIN JPM A-2 which was more appropriate as a dynamic simulator JPM.**

NRC JPM H: Perform actions for CCW restoration (21 CCWE Pump):
Make task standard specific to task. **DONE**

Verify critical steps – why are steps 5.d, 5.e, and 6 not critical? **Steps 5d, e are there to unload the EDG – if not completed, will not prevent starting CCW pump in simulator. Step 6 is not required to meet task standard – plus it is a not performed step (dispatch operator). OK**

Note – there are 2 steps labeled as 5.d on page 5 of the JPM. This mirrors what is in 2-EOP-APPX-1 (typo).

NRC In-Plant JPM i: Locally isolate seal injection during a LOPA
Make task standard specific to task. **DONE**

Make this a Unit 1 JPM vice Unit 2. **Will change - DONE**

K/A cited is EPE 055 – which is correlated with SF-6 not SF-2. Find new K/A that correlates to SF-2. **Will do – new K/A Changed to 003K6.02**

This task would require entering a contaminated area. The JPM presumes that the applicant will not actually enter the area. But the applicant should discuss the necessary radiological precautions that would actually be taken to enter the area. Do they need a special RWP? If so – which one? Requirements for protective clothing? Are these requirements different for performance of an EOP step? **Will add discussion. There are no standard or expectations for this action – therefore - no critical task. This will be a post-exam comment.**

NRC In-Plant JPM j: TCAF Control Evacuation – Start 23 AFWP and feed SGs.
Make task standard specific to task. **DONE**

K/A for APE 068 is correlated to SF8 not SF4 (sec). Find new K/A or draft K/A match analysis. Specify valve locations in JPM. **Will revise to 061K1.01 DONE**

Add examiner note regarding entering alarmed panels. **DONE**

Consider changing this JPM from Unit 2 to Unit 1. All in-plant JPMs were written on Unit 2. **NOT DONE**

NRC In-Plant JPM k:
Make task standard specific to task. **DONE**

Designate valve locations for steps 5.3.3, 4, 5 and 5.5.4. **DONE**

Step 5.3.8 – valve 21SW472 – task standard says “locked closed”. Should be “locked open” - **Correct JPM step standard - DONE**

Change flow < 100 gpm – change in 2 places. 5.5.4 and 5.5.6 (Meter ranges 0-100 gpm). **Change to 80 gpm in step 5.5.4 and 95 gpm in step 5.5.6 - DONE**

ADMIN JPMs:

NRC RO ADMIN A: Calculate Shutdown Margin
Make task standard specific to task.

Add + or – acceptance criteria to calculations on page 4. **Will add**

1. Need revised ES 301-5 forms showing applicant rotation and number of malfunctions. ***This form was provided but revised D-1 forms were not included***
2. Did you respond to the comments on the 75-day outline? ***Discussed at validation week***

Scenario #1:

Changes:

- Page 12 – address tech spec AS 6 hours if they do not get to AL3 – 2-hour shutdown. How do we grade this if they miss the 2-hour shutdown? **Not addressed?**
- Page 13 1. Specify actions for isolation of 23 SG. 2. Add examiner note for variations between SEC B or C. **DONE**
- Pages 13 and 15 Add list of valves to be checked for S/G isolation. **Added to page 13 but not to page 15 (now 16)**
- Page 16 Add examiner note: If S/G safety valve lifts – the task is not a critical task. If the crew exceeds the 50 minute FSAR time requirement to isolate the S/G – not critical. The SRO should direct feeding 21, 22 and 24 S/G – not just 24 S/G. **DONE**

Scenario #2:

- Provide crew with IOP-3 marked up to step 5.4.1. **Not done?**
- Page 11 – note that MSLI may be required or have occurred. **DONE**

Scenario #3:

- Noted 24 S/G steamflow = 0 but CRT and computer shows 24 S/G = flow - corrected problem – problem was in AO with reversed inputs. Fixed problem. **Potential simulator fidelity issue**
- Page 11 – Add a step to trip the condensate pumps **DONE**
- Page 12 – List valves for verifying 24 SG is isolated. **DONE**

Scenario #4:

- Page 8 – Add several actions (reset SEC, 2CC 131 open) – add note about NOT closing 2SW26 – enter AB.SW0002.
- Page 10 – Add “Implements attachment 3” - delete 2nd entry for rapid boration
- Critical tasks – clarify “minimum complement” CT#1 – 2 supply and 1 exhaust **Took out CT**
- CT#2 – 1 CCW pump
- Consider shortening scenario by putting the leak in earlier. **Ramp back leakage- no need – put in full amount.**

Scenario #5

- Page 12 – critical task 1 – state the task standard clearly – how many ESW pumps – how do we evaluate this CT? **DONE**
- Page 13 – Note – add in 2SW-26 to note that says 23SW20 should be closed. – NOT DONE?

Missing SRO ADMINS A-5s (1-4) classification JPMs from package. Please submit ASAP. (Called/emailed Gerry Gauding 8/8 – will FEDEX to Regional Office.

RO ADMIN A1-1

The answer key was not attached to the JPM. Placed answer key from 45-day package in final exam.

RO ADMIN A1-2

Missing answer key screen shots. Note was added. **Will send**

RO ADMIN A-2

Should we add an error band to the answer? The original error band was + or – 2 degrees. **No need – tolerance is 0 – getting numbers off tables**

RO ADMIN A-4

Added steps to fax NRC data sheet and respond to an in-coming phone call from CNN. Need to assess grading criteria for these steps.

Proposal - The steps should be broken down into 2 separate JPM steps. Each step should reference the applicable step in the procedure.

- FAX form - Task standard should be locate the correct FAX machine and indicate which button will cause the FAX machine to dial out. This should be a critical step using the same logic as previous steps. ECG attachment 8 step A.7 “Obtain completed NRC Data Sheet from the primary communicator and FAX for to Group B.”
- Respond to CNN call – reference step ECG attachment 8 C.3 include:
 - CAUTION Communicators are NOT authorized to release any information to the News Media.
 - When contacted by any News Media Representative, READ the appropriate message below: Reading A is correct. Reading B will be sufficient for this step - depending if the ENC is activated (information not provided – should it be provided?) If the applicant should not provide any other relevant information regarding the event. This step should be critical?

Simulator JPMs

SIM A

NRC had a comment to evaluate failing all rod motion rather than failing rods to 8 steps per minute. We asked you to evaluate this comment. There is no change to the JPM.. We remain concerned that asking the applicant to assess that the rods are stepping in – but not fast enough – during a one person simulator scenario is VERY challenging. Do you think this is a fair challenge to your applicants? **The simulator does not have the capability to fail auto rod motion. They can fail rod motion completely – auto and manual- but not one or the other. They expect operators to identify the slow speed of the rods. This is considered a fair JPM.**

SIM B

OK

SIM C

OK

SIM D

OK – challenging – schedule for 45 minutes

SIM E – RO / SRO versions

Correct typo in step C.6 page 5. “Test results [?] by initialing the SAT ...” **NOT NEEDED**
SRO version has a mismatch between applicant handout sheet and page 2 initiating cue.
Difference is whether the initiating cue states “If required, identify entry into TSAS” Delete this from page 2 – leading.

SIM F

Initial conditions do not match between page 2 and handout sheet. Missing item 1.

SIM G

OK

SIM H

ES 301-2 for the RO/SRO-Is – JPM “I” is matched to SF 2 for the ROs but SF 4(pri) for SROs?
Same JPM – probably 4(pri) is correct?

In-Plant I

This task would require entering a contaminated area. The JPM presumes that the applicant will not actually enter the area. But the applicant should discuss the necessary radiological precautions that would actually be taken to enter the area. Do they need a special RWP? If so – which one? Requirements for protective clothing? Are these requirements different for performance of an EOP step? **Will add discussion. There are no standard or expectations for this action – therefore - no critical task. Removed cue eliciting discussion. This will be a post-exam comment. Gerry will check further but will not compromise exam security.**

This JPM should also be coded as “R” on the ES 301-2 form. It is inside the RCA. **Yes – will change**

In-Plant J

Typo in Task page 1 – “AFWPP” Also on page 2 and applicant handout. Is this a typo? **No – the small “p” means “pumps”**

This JPM was not changed from Unit 2 to Unit 1. Why not? We walked this down on Unit 1. We said that if the only changes were to change unit designations, then we would make the change. What happened? **Before we left the site – we said “don’t bother”**

In-Plant K

OK

Simulator Scenarios

Need revised/updated D-1 forms for all scenarios – incorporate 75-day scenario comments on all D1 forms.

Need to agree on crew rotation.

ES-301-5 form does not have revised numbers from the D-1 forms (bean count). You are counting on post-major transient instrument/component malfunctions to meet minimums.

- RO #2 appears to be missing one scenario's worth of beans on the ES 301-5 form. The totals do not add up.
- SRO(I) 1/3 appear to have 3 scenarios. SRO(I) 2/4 and RO 1 /2 have only 2 scenarios – ESG 5 is a spare – and the total event numbers do not add up.

Resubmit corrected copy of ES 301-5

Scenario #1

- Page 12 – address tech spec AS 6 hours if they do not get to AL3 – 2-hour shutdown. How do we grade this if they miss the 2-hour shutdown? **Not addressed? Will add tech spec number**
- Pages 13 and 15 Add list of valves to be checked for S/G isolation. **Added to page 13 but not to page 15 (now 16) Will add to page 16**

Scenario #2

- Provide crew with IOP-3 marked up to step 5.4.1 and add to turnover sheet. **Not added to turnover sheet? Will add**

Scenario #3

- OK

Scenario #5

- Page 13 – Note – add in 2SW-26 to note that says 23SW20 should be closed. – **NOT DONE? Not required**