Perry

January 2001

NRC COMMENTS ON WRITTTEN EXAMINATION

NRC Written Exam Question Tracking Sheet (Final)

Original Question Number	Exam RO/SRO/Both	RO Question Number	SRO Question Number	New / Bank / Mod Bank	Level 1 / 2 / 3	Answer / Comments
1	SRO	N/A	1	New	L1	B
2	SRO	N/A	2	New	L3	A Not part of 25 SRO Group
3	SRO	N/A	3	New	L1	D
4	SRO	N/A	4	New	L1	B
5	SRO	N/A	5	New	L2	B Not part of 25 SRO Group
6	SRO	N/A	6	New	L2	C
7	SRO	N/A	7	New	L3	B
8	SRO	N/A	8	Bank	L3	D TS 3.1.7
9	BOTH	50	50	New	L2	B
10	BOTH	56	56	New	L1	A
11	SRO	N/A	11	New	L1	B
12	SRO	N/A	12	New	L1	A
13	SRO	N/A	13	New	L3	D
14	SRO	N/A	14	Bank	L1	D OT-3039-01
15	SRO	N/A	15	New	L3	C
16	SRO	N/A	16	New	L3	D
17	SRO	N/A	17	Mod Bank	L1	B
18	SRO	N/A	18	New	L1	D
19	SRO	N/A	19	New	L1	A
20	SRO	N/A	20	New	L1	C
21	SRO	N/A	21	Bank	L1	D
22	SRO	N/A	22	New	L3	B
23	BOTH	45	45	New	L1	B
24	RO	24	N/A	Bank	L1	A OT-3036-04
25	SRO	N/A	24	New	L1	D
26	BOTH	73	73	New	L1	C
27	BOTH	100	100	New	L1	D
28	BOTH	28	28	New	L2	A
29	BOTH	29	29	New	L1	C
30	BOTH	30	30	New	L3	B

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Original Question Number	Exam RO/SRO/Both	RO Question Number	SRO Question Number	New / Bank / Mod Bank	Level 1 / 2 / 3	Answer / Comments
31	BOTH	31	31	New	L2	A
32	BOTH	32	32	New	L2	C
33	BOTH	33	33	New	L3	B
34	BOTH	34	34	Bank	L2	D
35	BOTH	35	35	New	L1	D Simplified FDW System
36	BOTH	36	36	New	L2	D
37	BOTH	37	37	New	L1	A
38	BOTH	38	38	New	L1	B
39	BOTH	39	39	New	L1	A
40	BOTH	40	40	New	L3	C
41	BOTH	41	41	New	L3	C
42	BOTH	42	42	New	L3	A PEI-SPI Suppl. Figure 1a
43	BOTH	43	43	New	L1	A
44	BOTH	44	44	New	L3	C
45	SRO	N/A	25	New	L3	D PEI-M51/56
46	BOTH	46	46	New	L2	B
47	BOTH	47	47	New	L3	C
48	BOTH	48	48	New	L1	A
49	BOTH	49	49	New	L2	B
50	SRO	N/A	26	New	L2	C
51	BOTH	51	51	New	L2	A
52	BOTH	52	52	New	L2	D
53	BOTH	53	53	New	L3	C
54	BOTH	54	54	New	L2	B
55	BOTH	55	55	New	L3	D
56	SRO	N/A	27	New	L2	B
57	BOTH	57	57	Bank	L2	C OT-3036-06
58	BOTH	58	58	New	L1	A
59	BOTH	59	59	New	L3	B
60	BOTH	60	60	New	L1	A

NRC Written Exam Question Tracking Sheet (Final)

Original Question Number	Exam RO/SRO/Both	RO Question Number	SRO Question Number	New / Bank / Mod Bank	Level 1 / 2 / 3	Answer / Comments
61	BOTH	61	61	Mod Bank	L2	D OT-3036-01
62	BOTH	62	62	New	L1	D
63	BOTH	63	63	New	L2	C
64	BOTH	64	64	New	L1	C
65	BOTH	65	65	New	L2	D
66	BOTH	66	66	New	L2	D
67	BOTH	67	67	Bank	L2	D
68	BOTH	68	68	Bank	L1	C
69	BOTH	69	69	New	L2	B
70	BOTH	70	70	Bank	L2	D
71	BOTH	71	71	New	L3	B
72	BOTH	72	72	New	L2	C
73	RO	26	N/A	New	L2	C
74	BOTH	74	74	New	L3	D
75	BOTH	75	75	New	L2	B
76	BOTH	76	76	New	L2	D
77	BOTH	77	77	New	L2	B
78	BOTH	78	78	New	L1	B
79	BOTH	79	79	New	L2	D
80	BOTH	80	80	Bank	L1	B
81	BOTH	81	81	New	L2	B
82	BOTH	82	82	New	L2	B
83	BOTH	83	83	New	L3	B
84	BOTH	84	84	New	L1	C
85	BOTH	85	85	New	L1	D
86	BOTH	86	86	Mod Bank	L2	C
87	BOTH	87	87	Mod Bank	L2	B
88	BOTH	88	88	New	L1	B
89	BOTH	89	89	New	L2	B
90	BOTH	90	90	New	L3	C

NRC Written Exam Question Tracking Sheet (Final)

Original Question Number	Exam RO/SRO/Both	RO Question Number	SRO Question Number	New / Bank / Mod Bank	Level 1 / 2 / 3	Answer / Comments
91	BOTH	91	91	Mod Bank	L2	A OT-3036-06
92	BOTH	92	92	New	L1	B
93	BOTH	93	93	New	L2	B
94	BOTH	94	94	New	L1	D
95	BOTH	95	95	New	L2	D
96	BOTH	96	96	New	L1	B
97	BOTH	97	97	New	L2	C
98	BOTH	98	98	Bank	L1	C
99	BOTH	99	99	New	L1	C
100	RO	27	N/A	New	L1	A
101	RO	1	N/A	New	L2	B
102	RO	2	N/A	New	L2	C
103	RO	3	N/A	New	L1	D
104	RO	4	N/A	New	L1	D
105	RO	5	N/A	New	L2	B
106	RO	6	N/A	New	L2	A
107	RO	7	N/A	Bank	L1	B OT-3036-02
108	RO	8	N/A	New	L1	A
109	RO	9	N/A	Bank	L1	B OT-3036-06
110	RO	10	N/A	New	L2	D
111	RO	11	N/A	New	L2	B
112	RO	12	N/A	Bank	L1	C OT-3036-06
113	RO	13	N/A	New	L1	B
114	RO	14	N/A	New	L1	B
115	RO	15	N/A	New	L2	B
116	RO	16	N/A	New	L1	B
117	RO	17	N/A	New	L1	C
118	RO	18	N/A	New	L1	B
119	RO	19	N/A	New	L1	D
120	RO	20	N/A	Mod Bank	L2	A

NRC Written Exam Question Tracking Sheet (Final)

Original Question Number	Exam RO/SRO/Both	RO Question Number	SRO Question Number	New / Bank / Mod Bank	Level 1 / 2 / 3	Answer / Comments
121	RO	21	N/A	Mod Bank	L2	A OT-3036-03
122	RO	22	N/A	New	L1	D
123	RO	23	N/A	Bank	L2	A
124	SRO	N/A	23	New	L3	D
125	RO	25	N/A	New	L1	C
126	SRO	N/A	9	New	L2	A
127	SRO	N/A	10	New	L3	B PAP-1914

ES-401 | Written Examination Review Worksheet | Form ES-401-9

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
1	F	2										ok	SRO	S	N	Weak link to K/A 10 CFR 55.43 (b)(2)
2	H	3	*									ok	RO	E	N	10 CFR 55.41 (b)(1 or 2) are applicable. Suggest rewording the stem t o read "Which of the following will cause fuel temperature to act first..." Change: Licensee accepted enhancement comment.
3	F	3				*						ok	SRO	E	N	10 CFR 55.41 (b)(10) but at an SRO-level (applicability of 10 CFR 50 54 (x) Distractor a and b state damage is immediate while stem says may occur. Not very credible. Distractor c doesn't make sense. Suggest rewording distractors: a. Equipment damage is expected to occur immediately. A 10 CFR 50.54 (x) determination must be made prior to operating a pump at a suppression pool level less than 5.75 ft. b. Equipment damage is expected to occur immediately. However, a 10 CFR 50.54 (x) determination is NOT necessary prior to operating a pump at a suppression pool level less than 5.75 ft. pumps. c. Equipment damage is NOT expected to be immediate. However, a 10 CFR 50.54 (x) determination must be made prior to operating a pump at a suppression pool level less than 5.75 ft. d. Equipment damage is NOT expected to be immediate. However, a 10 CFR 50.54 (x) determination is NOT necessary prior to operating a pump at a suppression pool level less than 5.75 ft.. Change: Licensee accepted enhancement

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q-K/A	SRO Only	U/E/S	B/M/N	Explanation
4	H	2		X								ok	SRO	U	N	10 CFR 55.43 (b)(2) Entry condition for TS but question also addresses what should be the next direction. (Application of TS) Distractor b is the only one which doesn't mention PEI-T23. Cue. Suggest hitting on other TS requirements - such as scramming the reactor (above 110), Change: Licensee changed distractor c to include reference to TS but no reference to PEI-T23.
5	H	3										ok	RO	E	N	10 CFR 55.41 (b)(7) System knowledge Distractor a and b reverse logic. Suggest rewording: a. The SDC system will isolate if pressure exceeds 135 psig b. The RHR pump seals could be damaged if pressure exceeds 135 psig. Change: Licensee accepted enhancement comment.
6	H	3										ok	SRO	S	N	10 CFR 55.43 (b)(5) Spelling error - assures not assure
7	H	1				x						ok	SRO	U	N	10 CFR 55.43 (b)(5) LOD - Stem states Max safe operating condition is 4R and that areas are 4.1 and 4.2. Distractor b states two areas exceed max limits - too easy. Only analysis is whether 4.1 and 4.2 are > 4.0. Distractor c not credible - states only 1 exceeds max limit. Why would someone believe 4.2 > 4.0 but not 4.1 > 4.0? Distractor a not credible - shutdown required to protect components- not to isolate.....could be worded better. Change: Licensee changed stem to read only one area exceeded max limit - same answer as this condition implies other areas exceed max limit also.
8	H	2										ok	SRO	S	B	10 CFR 55.43 (b)(1 and 2)
9	H	2										ok	RO	S	N	Final question 50 on both exams.
10	F	2/3										ok	RO	S	N	Final question 56 on both exams.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
11		1										ok	U-S	U	N	RO applicants should know the definition of reactor modes. Careful - RO question 114 deals with mode.
11N	F	2										ok	SRO	S	N	
12	F	2				*						ok	SRO	E	N	10 CFR 55.43 (b)(1) Change 30 days to 4 hour notification in distractor c and d - more credible. Change: Licensee accepted enhancement comment.
13	H	2/3		*								ok	SRO	E	N	10 CFR 55.43 (b)(5) Take out "the main turbine....scram" since this somewhat cues that an ATWS occurred. Suggest replacing with "the unit remained at 100% power." Change: Licensee accepted enhancement comment.
14	F	2				*						ok	SRO	S	B	10 CFR 55.41 (b)(10) but test knowledge of SRO responsibilties. Is distractor really incorrect - can't shift supervisor sign? Also, double negative stem - which is NOT...without.... Change: Licensee unable to switch to a positive statement. There were no problems during examination validation. Also, changed shift supervisor to supervising operator to verify only one correct answer.
15	H	2										ok	SRO	S	N	10 CFR 55.43 (b)(7)
16	H	3										ok	SRO	S	N	10 CFR 55.43 (b)(2 and 7)
17	F	2										ok	SRO	S	M?	10 CFR 55.41 (b)(10) but at an SRO level - responsibilities.
18	F	2				X						ok	SRO	U	N	10 CFR 55.41 (b)(10) but tests SRO responsibilities. distractors a and d are opposites - makes this a 50/50 question. Suggest the following: a. may NOT be waived for personnel safety or ALARA purposes b. may NOT be waived for personnel safety but may be waived for ALARA purposes c. may be waived for personnel safety but may NOT be waived for ALARA purposes d. may be waived for personnel safety and ALARA purposes Change: Licensee made the above changes.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
19	F	2										ok	SRO	E	N	10 CFR 55.43 (b)(4) Add "work" after "radiological" in stem - currently doesn't make sense. Change: Licensee accepted enhancement comment.
20	F	2										ok	SRO	S	N	10 CFR 55.41 (b)(10) but tests SRO responsibilities - key control
21	F	2										ok	SRO	S	B	10 CFR 55.41 (b)(10) but tests SRO responsibilities - accountability.
22	H	3										ok	U-S	U	N	Question asks for the immediate actions to DC bus fault - operators expected to know these. Not SRO-only. Change: Licensee accepted comment. Licensee removed statement that bus D-1-A indicated 0 volts. This removal required the applicant to evaluate the conditions and direct actions (now considered at SRO-level)
23	F	2/3										ok	RO	S	N	
24	F	1/2										ok	U-S	U	B	10 CFR 55.41 (b)(10) - RO immediate actions - Does not meet definition of SRO-only. Change: Licensee made this question a RO-only question.
25	F	2										ok	SRO	S	N	10 CFR 55.43 (b)(5)
26	F	1*										ok	RO	S	N	Normally, this would be considered low level - what is power supply - but recent modification makes this more important and Chief Examiner decided to use question.
27	~~H~~ F	2										ok	RO	S	N	Applicant need only know bases for 3700 MWt - no analysis
28	H	3										ok	RO	S	N	
29	F	2										ok	RO	S	N	
30	H	3										ok	RO	S	N	
31	H	3										ok	RO	S	N	
32	H	3										ok	RO	S	N	
33	H	3										ok	RO	S	N	
34	H	2										ok	RO	S	N	Add "the" after "until" in distractor a

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
35	F	2										ok	RO	S	N	
36	H	2/3										ok	RO	S	N	
37	F	2										ok	RO	S	N	
38	F	3				X						ok	RO	U	N	Distractor a and c are not credible. Why would someone think that a high drywell pressure scram (RPS signal) would mitigate an ATWS? Change: Licensee rewrote distractors to mirror other RPS signals.
39	F	2	*									ok	RO	E	N	Eliminate first sentence - training material which is not appropriate for an exam. Change: Licensee removed training information.
40	?	2										X	RO	U	N	K/A 295026EK1.01 deals with relationship between suppression pool high temperature and NPSH. Question as written deals with recognizing NPSH concerns - the stem info regarding suppression pool temperature, plant conditions is not needed to answer the question. LOK - currently is F - definition of cavitation
40N	H	2/3										ok	RO	S	N	
41	H	2										ok	RO	S	N	
42	H	1										ok	RO	U	N	LOD low - can increase by forcing steam table use. (Series of different pressures and temperatures instead of recognition that one temp is above 212 °F. Change: Licensee accepted comment. Licensee changed sets of conditions to require candidate to read graph instead of steam tables. Licensee explained that this was more operationally expected of ROs.
43	F	3										ok *	RO	S	N	K/A match is not obvious. After discussion, accepted question and K/A.
44	H	3										ok	RO	S	N	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
45	H	3				X						ok	SRO	U	N	10 CFR 55.43 (b)(5) Distractor b and c not credible as question is currently written. Cue is word "secured" - no reason to believe one system would be operating and one would be secured. Suggest changing initial conditions such that containment H2 is 8.2 (8.6 is highest on graph - initial is 8.7 - obvious that it is outside of band) and drywell H2 7.0 instead of 8.9 (applicant will go down different path if s/he uses 7.5 instead of 8.2 on the HDOL chart. This will then make distractor c credible. Change: Licensee accepted comment and changed initial conditions.
46	H	3										ok	RO	S	N	
47	H	4										ok	RO	S	N	Facility commented that this is an RO-level question.
48	F	2										ok	RO	S	N	
49	H	2/3										ok	RO	S	N	
50	H											X	SRO	U	N	10 CFR 55.43 (b)(2) K/A 295004AA2.03 deals with the relationship between battery voltage and a loss or complete loss of DC power. Question as written deals with TS applicability for battery voltages.
50N	H	3										ok	SRO	S	N	
51	H	2	*									ok	RO	S	N	Distractor c - change "Implement" to "implement" Stem is redundant. Just say reactor power is at 25 %. Change: Licensee accepted enhancement comment.
52	H	2	*									ok	RO	E	N	Distractor b not credible as it contradicts the stem (stem says level increased, distractor b states level decreased. Suggest taking out "but the ....injection" as it is not needed. Change: Licensee accepted enhancement comment.
53	H	2										ok	RO	S	N	Low 2

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
54	F											X	RO	U	N	KA 295012AK2.02 deals with high drywell temperatur and drywell cooling. Question as written asks when drywell coolers start. Weak link because coolers do not start automatically on drywell temperature and this is distractor c.
54N	H	3										ok	RO	S	N	
55	H	3	X									ok	RO	E	N	Annunciator response procedure states that the alarm comes in at 93 °F; stem states temperature is 86 °F. Change: Changed to 93 °F.
56	H	2/3										ok	S	S	N	10 CFR 55.43 (b)(2)
57	H	3										ok	RO	S	B	
58	F	2										ok	RO	S	N	
59	H	3										ok	RO	S	N	Verify system knowledge not memorization of a procedure step (supplemental actions) Confirmed with licensee - this is an acceptable question.
60	F	2										ok	RO	S	N	
61	H	2/3		*								ok	RO	E	M	Cue in distractor a - question asks for how "A" will respond; distractor states "B" response. Suggest putting "the" in from of "of" and taking out "train A" in stem.
62	F	3										ok	RO	S	N	
63	H	3										ok	RO	S	N	
64	F	2		X								ok	RO	U	N	distractor b and d mention withdraw - why would someone think that insert blocks would cause withdraw blocks? How is this plausible? Suggest system fault and gang misalignment.
64N	F	2										ok	RO	S	N	
65	H	4										ok	RO	S	N	
66	H	3										ok	RO	S	N	
67	H	2/3										ok	RO	S	B	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
68	F	2	*									ok	RO	E	B	Teaching in stem. Suggest making stem a statement of fact - "HPCI automatically initiated due to receipt of BOTH low level and high drywell signals. HPCS initiation may/will be reset..... Change: Licensee accepted enhancement comment.
69	H	3	*									ok	RO	E	N	Change to F022C - Fo22A was used as an example in the student text. Also change order of distractors (B, C, A, D with answer C) Change: Licensee accepted enhancement comment.
70	H	3										ok	RO	S	B	
71	H *	4										ok	RO	S	N	Expectation to have formula memorized?
72	H	3										ok	RO	S		
73														U	M?	Series of T/F statements
73N	H	3										ok	RO	S	N	This is RO question number 26.
74	H	3										ok	RO	S	N	
75	F	3									*	ok	RO	E	N	Change "not positive" to "negative" in distractor b. Change: Licensee accepted enhancement comment.
76	H	2										ok	RO	S	N	
77	H											ok*	RO	S	N	? How does failed drywell instrument affect the answer? Licensee stated that candidate needs to determine that there is no effect. This meets K/A.
78	F	2										ok	RO	S	N	
79	H	2										ok	RO	S	N	
80	F	2										ok	RO	S	B	
81	H	2/3										ok	RO	S	N	
82	H	2										ok	RO	S	N	
83		1												U		Too easy. Only one distractor (the answer) contains the opposite RPS train.
83N	H	3										ok	RO	S	N	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
84	F	2/3				*						ok	RO	E	N	Need to relook at distractor b - not credible. It states that the loss of seal flow decreases the possibility of seal failure - if this is true then having seal flow INCREASES the possibility for seal damage....then why have seal flow? Change: Difficult to find another distractor. Decided to keep this one.
85	F	2										ok	RO	S	N	
86	H	2/3		*								ok	RO	E	M	Distractor c only one with 2 items - one of the items is repeated in distractor b. Could cue. Suggest using another non-E31 signal for B and eliminating high differential flow from distractor c. Change: Licensee accepted enhancement comment.
87	H	2/3										ok	RO	S	M	
88	F	2										ok	RO	S	N	
89	H	3										ok	RO	E	N	Capitalize NOT in stem question. Change: Underlined "not"
90	H	2										ok	RO	S	N	
91	H	3										ok	RO	S	M	
92	F	3										ok	RO	S	N	
93												X		U		Good question but doesn't meet K/A. K/A 272000K4.02 focuses on design interlocks for auto actions in the event of a release greater than pre\determined values - question deals with initiations (K4.03 or A2.16)
93N	H	3										ok	RO	S	N	
94												X	RO	U		KA 290003A4.03 deals with CRHVAC and damper positions. Question deals with initiation (A3.01 or A4.01)
94N	F	3										ok	RO	S	N	
95	~~H~~ F	3										ok	RO	S	N	
96	F	2										ok	RO	S	N	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
97	H	2		*								ok	RO	E	N	Parallel construction - change distractor a to read "the steam dryer....was removed..... Add "the" in front of all distractors. Eliminate "due to ..." in distractor d. Change: Licensee accepted enhancement comments and modified distractors to parallel construction.
98	F	2/3		*								ok	RO	E	B	Change distractor a to condensate booster pump "B" not "A" and add "hotwell pump C" to distractor b. This makes distractors more credible (common mistake of mixing buses.) Change: Licensee accepted enhancement comment.
99	F	2										ok	RO	S	N	
100	F	3	*									ok	RO	E	N	Modify note to read: NOTE: Selection of a duration less than or greater than the minimum design will be an INCORRECT response. This takes out the bias that 12 is incorrect . Although the lowest number is the correct number, this note should not influence those who know the answer. Change: Licensee accepted enhancement comment.
101	H	2/3										ok	RO	S	N	
102	H	2		*								ok	RO	E	N	Move distractor a to distractor c position (order of length). Underline AND (like only) Change: Licensee accepted enhancement comment.
103	F	2										ok	RO	S	N	
104	F	2			*							ok	RO	S	N	This is a series of T/F but it is appropriate for this type of question - i.e. what is the definition of RCIC interlocks.
105	H	2/3										ok	RO	S	N	
106	H	2										ok	RO	E	N	
107	F	2										ok	RO	S	N	
108	F	3										ok	RO	S	N	
109	F	3										ok	RO	S	B	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
110	H	2/3		*								ok	RO	E	N	Parallel construction (eliminates cue in distractor d) Change distractor d to read "The plant operator manually valves in the deluge system locally and opens the initiation valve to fill the charcoal filter plenum with water. Change: Licensee accepted enhancement comment.
111	H	2/3										ok	RO	E	N	
112	F	2										ok	RO	S	B	
113	F	2			*							ok	RO	S	N	This is a series of T/F but it is appropriate for this type of question - i.e. what is the definition of H2 igniters.
114	F	2			*							ok	RO	S	N	This is a series of T/F but it is appropriate for this type of question - i.e. what is the definition mode
115	H					X	X					ok	RO	U	N	Need to reword bolded comment - as written, distractor c and d are also correct in that, they contain all the required items (plus some additional ones. Need to state "complete and only those required - or minimal list of required..... Change: Licensee modified bolded statement. Only one answer remains valid.
116	F	2										ok	RO	S	N	
117	F	2/3										ok	RO	S	N	
118	F	2	*									ok	RO	E	N	Low 2 Most of the stem information is not needed. Suggest deleting the "Given the following.....MSIV closure" and start with "Which of the following" Change: Licensee accepted enhancement comment.
119	F	2										ok	RO	S	N	
120	H	2										ok	RO	S	M	low 2
121	H	2										ok	RO	S	M	
122	F	3										ok	RO	S	N	
123	H	2										ok	RO	S	B	

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		56.	*	67.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q≠ K/A	SRO Only	U/E/S	B/M/N	Explanation
124	H	3		X								ok	U-R	U	N	Distractor d is too long - cues to answer since it is only distractor which references power. Is this expected RO knowledge? Change: Licensee agreed that this is a SRO-only level question and moved question to the SRO exam. Licensee changed distractor d and eliminated power reference.
125	F	3										ok	RO	S	N	
126	H	2	*									ok	SRO	E	N	Reword stem to request Unit Supervisor direction (after evaluating conditions.)
127	H	3										ok	SRO	S	N	

Instructions

[Refer to *Section D of ES-401 and* Appendix B for additional information regarding each of the following concepts.]

1. Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.

2. Enter the level of difficulty (LOD) of each question using a 1 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).

3. Check the appropriate box if a psychometric flaw is identified:
   - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
   - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
   - The answer choices are a collection of unrelated true/false statements.
   - More than one distractor is not credible.
   - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).

4. 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.

5. *Check the appropriate box if the sampled question does not match the approved K/A or an SRO-only question is not at the SRO level.*

6. 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?

67. For any "U" ratings, at a minimum, explain how the Appendix B psychometric attributes are not being met.

* Source of question: Bank/Modified/New. B-P means used on previous NRC exam, pre-validated.

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QUESTION 11

Which one of the following statements describes when Perry Technical Specification LCO 3.0.4 would allow a MODE change from MODE 2 to MODE 1?

A. When the ACTION(S) of the LCO not met permit continued operation of the plant for 30 days.

B. When the ACTION(S) of the LCO not met permit continued operation of the plant for an unlimited period of time.

C. When compliance with the associated ACTION(S) of the LCO not met would place the plant back into MODE 2.

D. When compliance with the associated ACTION(S) of the Operational Requirement (OR) not met would place the plant back into MODE 2.

ANSWER: B

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		3
	Group #		Cat 1
	K/A#	GEN 2.1.22	
	Importance Rating		3.3

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – the associated ACTION must permit continued operation in the MODE for an unlimited period of time.

C / D – Mode change is not allowed if the Applicability to be entered would require the plant to exit that Applicability to comply with the ACTION of the LCO or OR not in compliance. (LCO 3.0.4 does also apply to the ORM).

Technical Reference(s): Tech Spec LCO 3.0.4 and Bases, ORM (PDB-R0001) Section 2.0	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3037-005-04 Obj D OT-3037-000-16 Obj D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	_____	
	55.43	__X__	

Comments (Why is it an upper level question): N/A

QUESTION 40

The following plant conditions exist:

- An ATWS is in progress
- MSIVs are isolated
- SRVs are being used to control reactor pressure

As Suppression Pool temperature increases, ECCS pump NPSH _____.

A. increases resulting in the potential for ECCS pump cavitation.

B. increases resulting in the potential for pump runout.

C. decreases resulting in the potential for ECCS pump cavitation.

D. decreases resulting in the potential for pump runout.

ANSWER: C

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A#	295026 EK1.01	
	Importance Rating	3.0	3.4

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A / B – pump NPSH decreases as SP temp increases.

D – there is no correlation between pump NPSH and pump runout

Technical Reference(s): Supp Pool Temperature PEI Bases, GP Components Text	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3303-003-02 Obj 3, OT-3402-004-06 Obj B

Question Source:	Bank #	_____
	Modified Bank #	_____ (Note changes or attach parent)
	New	__X___
Question History:	Previous NRC Exam	_____
	Previous Quiz / Test	_____
Question Cognitive Level:	Memory or Fundamental Knowledge	_____
	Comprehension or Analysis	_X_(A)
10 CFR Part 55 Content:	55.41	__X__
	55.43	_____

Comments (Why is it an upper level question): Requires student to analyze the abnormal indications to determine the cause. Increasing Supp Pool temperature reduces pump suction temperature creating conditions for pump cavitation.

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QUESTION 50

An inadvertent High Pressure Core Spray (HPCS) Pump start occurred.

Before the Control Room Operators could take any action for the inadvertent HPCS Pump start, a loss of DC Bus ED-1-C occurred.

Bus EH13 is being powered from the preferred off-site power source.

Which one of the following methods should be directed by the Unit Supervisor in order to shutdown the HPCS Pump?

A. From the Control Room, take the HPCS PUMP, 1E22-C001, control switch to the STOP position.

B. From the Control Room, take the PREFERRED SOURCE BREAKER, EH1303, control switch to the TRIP (open) position.

C. Locally at HPCS PUMP BRKR EH1304 cubicle, depress the MANUAL TRIP pushbutton.

D. Locally at HPCS PUMP BRKR EH1304 cubicle, take the test control switch to the TRIP (open) position.

ANSWER: C

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #		1
	Group #		2
	K/A#	295004 AA2.04	
	Importance Rating		3.3

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – On a loss of DC control power, the HPCS Pump breaker will not open using the control room switch.

B - On a loss of DC control power, the Bus EH13 Preferred Source Breaker will not open using the control room switch.

D – The local Test Control Switch only functions when the breaker is racked out to the TEST position.

Technical Reference(s): ONI-R42-3, SDM-R10, ONI-E12-1, SDM-R42	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3552-001-00 Obj D, E, J OT-3036-006-R42 Obj E, OT-3036-006-R10 Obj B, OT-3036-004-E22A Obj K

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	_X_(C)_	
10 CFR Part 55 Content:	55.41	_____	
	55.43	__X__	

Comments (Why is it an upper level question): Requires student to analyze the given conditions in order to determine the correct off-normal procedure and associated method of securing the HPCS Pump.

QUESTION 54

A cold reactor startup is in progress. Drywell temperature is slowly increasing as reactor heatup and pressurization is being performed.

Which one of the following describes how the Drywell Cooling System (M13) responds during normal plant operation?

Assume the Drywell Cooling System is in normal operation.

A. The standby Lower Drywell Cooling Fan will automatically start when Reactor Vessel Support Skirt area temperature exceeds 120 °F.

B. The Lower Drywell Cooler NCC Bypass Valve, P43-F365, will re-position to cause more cooling water to flow through the in-service Lower Drywell Air Handling Unit cooling coil.

C. The Lower Drywell Cooler NCC Bypass Valve, P43-F365, will re-position to cause less cooling water to flow through the in-service Lower Drywell Air Handling Unit cooling coil.

D. The Lower Drywell Cooler 3-Way NCC Supply Valve, P43-F025, will throttle open to provide additional cooling water flow through the in-service Lower Drywell Air Handling Unit cooling coil.

ANSWER: B

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A#	295012 AK2.02	
	Importance Rating	3.6	3.7

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – There is no auto start feature associated with the standby fan due to high temperature (only low air flow)

C – F365 will re-position to direct more flow to the in-service cooling coil (not less flow) in order to provide more cooling of the air coming from the discharge of the AHU

D – The 3-way valve does not throttle. It provides full cooling water flow to either cooling coil selected to be in-service.

Technical Reference(s): SDM-M13	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3036-004-M13 Obj B, C and F

Question Source:	Bank # _____ Modified Bank # _____ (Note changes or attach parent) New __X___
Question History:	Previous NRC Exam _____ Previous Quiz / Test _____
Question Cognitive Level:	Memory or Fundamental Knowledge _____ Comprehension or Analysis _X_(C)_

*** Original question was a Level 1 question, this is now a Level 2 question which affects totals.**

10 CFR Part 55 Content:	55.41 __X__ 55.43 _____

Comments (Why is it an upper level question): Requires the student to predict the response of the Drywell Cooling System to an increasing Drywell temperature condition

QUESTION 64

When a control rod is selected, the Control Room Operator observes that the control rod has an "Insert Block" and "Insert Inhibit" light.

This means that the control rod **cannot** be INSERTED _____.

A. since this might allow the LHGR or MCPR limit to be exceeded.

B. since this would indicate a control rod block due to a system fault.

C. since this might allow a control rod to have excessive rod worth.

D. since this would indicate a control rod block due to a bypassed control rod position indicator.

ANSWER: C

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	201005 A2.03	
	Importance Rating	3.2	3.2

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – the control rod cannot be inserted but the reason is not due to LHGR or MCPR limits.

B – An RC&IS 'system fault' will cause an Insert Block light by itself (but not an Insert Inhibit light in conjunction).

D – A control rod that has had its position indication bypassed in RACS is essentially invisible to the RPC and will not cause either an Insert Inhibit or Insert Block.

Technical Reference(s): SDM-C11(RCIS), SOI-C11(RCIS)	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3036-004-C11(RCIS) Obj B & C

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question): N/A

QUESTION 73

During RCIC System operation, a RCIC turbine trip occurred.

The Supervising Operator attempted to reset the RCIC turbine by closing the RCIC TURBINE TRIP THRT V LATCH, 1E51-F510, and then taking the control switch to the OPEN position.

The following RCIC System valve position indications exist:

RCIC TRIP THROTTLE VALVE	GREEN light ON	RED light OFF
RCIC TURBINE TRIP THRT V LATCH	GREEN light OFF	RED light ON
RCIC TURBINE GOVERNOR VALVE	GREEN light OFF	RED light ON

Which one of the following currently describes the operation of the RCIC System?

A. The RCIC System should be operating at a speed based on governor demand.

B. The RCIC System is reset awaiting the re-opening of RCIC STEAM SHUTOFF VALVE, 1E51-F045.

C. The RCIC System is still tripped awaiting the reset of the trip device linkage locally at the RCIC turbine,

D. The RCIC System is still tripped awaiting the reset of the RCIC Division 1 and/or Division 2 isolation signals.

ANSWER: C

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	
	Group #	1	
	K/A#	217000 K5.06	
	Importance Rating	2.7	

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A / B – The RCIC System is still tripped as indicated by the Trip Throttle Valve still in the Close position.

D – The RCIC System is still tripped but it is due to the mechanical overspeed trip device not being reset (not because of a Divisional isolation signal).

Technical Reference(s): SOI-E51, SDM-E51	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3036-003-E51 Obj D, F, K

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	_X_(C)_	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question): Requires student to predict the operational status of the RCIC System based on given conditions.

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QUESTION 83

The following plant conditions exist:

- The plant is operating at 100% reactor power
- Feedwater Level Control is on the Master Level Controller with Narrow Range Level Channel 'A' selected
- Narrow Range Level Channel 'A' has failed upscale

The reactor will scram on _____.

A. low RPV water level; water level will be restored to approximately 200 inches in accordance with ONI-C71-1, Reactor Scram.

B. low RPV water level; water level will be restored to 185 - 215 inches in accordance with PEI-B13, RPV Control (Non-ATWS).

C. high RPV water level; water level will be restored to approximately 200 inches in accordance with ONI-C71-1, Reactor Scram.

D. high RPV water level; water level will be restored to 185 - 215 inches in accordance with PEI-B13, RPV Control (Non-ATWS).

ANSWER: B

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A#	212000 A2.08	
	Importance Rating	4.1	4.2

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – PEI-B13 is the higher tier document that will supercede ONI-C71-1.

C / D – the reactor does not scram on high RPV water level (scrams on low RPV water level).

Technical Reference(s): ONI-C71-1, PEI-B13, RPV Control (Non-ATWS), PEI Bases Document	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3402-005-01 Obj B OT-3402-005-02 Obj A,B,C,F

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	_X_(A)	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question): Requires student to analyze the given conditions in order to determine the cause of the scram and then evaluate which procedure should be used to restore RPV level.

QUESTION 93

The plant is in a refueling outage and the M14 Containment Vessel and Drywell Purge System (CVDWP) is operating in the Refuel mode. Containment Ventilation Exhaust Radiation Monitor D17-K609C is in alarm due to a Downscale indication.

An I&C Technician is troubleshooting D17-K609C when the following alarms are received in the Control Room:

- CNTMT & DW PURGE EXHAUST FAN A FLOW LOW
- CNTMT & DW PURGE EXHAUST FAN B FLOW LOW
- CNTMT PURGE SUPPLY FAN A FLOW LOW
- CNTMT PURGE SUPPLY FAN B FLOW LOW
- DW PURGE SUPPLY FAN A FLOW LOW
- DW PURGE SUPPLY FAN B FLOW LOW

Which one of the following conditions is the probable cause for the current status of the CVDWP System?

A. Either Containment Ventilation Exhaust Radiation Monitor D17-K609A or D17-K609D is in an UPSCALE TRIP (HI-HI) condition due to a refueling accident in Containment.

B. Containment Ventilation Exhaust Radiation Monitor D17-K609B is in an UPSCALE TRIP (HI-HI) condition due to a refueling accident in Containment.

C. The I&C Technician inadvertently placed the MODE SWITCH for D17-K609D to the ZERO position.

D. The I&C Technician inadvertently placed the MODE SWITCH for D17-K609A to the TRIP TEST position.

ANSWER: B

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	272000 K4.02	
	Importance Rating	3.7	4.1

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

CVDWP isolation dampers isolation logic is an 'inbd-outbd' logic (either A and D or B and C)

A – Channels A and C or Channels C and D do not satisfy the isolation logic.

C – Channels C and D do not satisfy the isolation logic.

D – Channels A and C do not satisfy the isolation logic.

Technical Reference(s): SDM-M14, SDM-D17A	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3036-003-M14 Obj F, OT-3036-004-D17A Obj D

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X___	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	_____	
	Comprehension or Analysis	_X_(C)	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question): Requires student to analyze current plant conditions, and in conjunction with knowledge of Cont Vent Exhaust Rad Monitor logic and CVDWP isolation damper logic, determine the reason for the response current state of the CVDWP System.

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QUESTION 94

Control Room HVAC and Emergency Recirculation (M25/26) Train 'A' has been manually shifted from the NORM mode to the EMERG RECIRC mode by placing CONT RM HVAC TRAIN A MODE SELECT, M25-S7, in the EMERG RECIRC position.

Assume no other operator actions were performed.

Which one of the following describes the current damper lineup for M25/26 Train 'A'?

	HVAC A OTBD SUPP DAMPER F010A	HVAC A INBD SUPP DAMPER F020B	EMG RCIRC DAMPER A F040A	HVAC A RETURN DAMPER F110A	HVAC A EXHAUST DAMPER F130A
A.	Open	Open	Closed	Open	Closed
B.	Open	Open	Closed	Closed	Open
C.	Closed	Closed	Open	Closed	Closed
D.	Closed	Open	Open	Closed	Closed

ANSWER: D

Examination Outline Cross-Reference	Level:	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A#	290003 A4.03	
	Importance Rating	2.8	2.8

Proposed Question: See attached

Proposed Answer: See attached

Explanation (Why the distractors are incorrect):

A – this is the damper lineup for the NORMAL mode.

B – this is the damper lineup for the SMOKE CLEAR mode.

C – Per SOI-M25/26, Section 5.5, this damper F020B must be manually closed by the CR Operator. The question stem stated that no other operator actions were performed, therefore, this damper will be open.

Technical Reference(s): SDM-M25/26, SOI-M25/26	Reference Attached: __X__ (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective (As available): OT-3036-002-M26/26 Obj B & E

Question Source:	Bank #	_____	
	Modified Bank #	_____	(Note changes or attach parent)
	New	__X__	
Question History:	Previous NRC Exam	_____	
	Previous Quiz / Test	_____	
Question Cognitive Level:	Memory or Fundamental Knowledge	__X__	
	Comprehension or Analysis	_____	
10 CFR Part 55 Content:	55.41	__X__	
	55.43	_____	

Comments (Why is it an upper level question): N/A