

Q#	1. LOK	2. LOD	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6	7	Ans Letter	CFR	8 Explanation	
	(F/H)	(1-5)	stem focus	cueing	T/F	cred dist	partial	job link	minutia	# / units	back-ward	K/A	SRO-only	B/M/N	U/E/S	A/B/C/D	55.41x55 .43y		
																			General Comments: 1. All Tier 1 questions must meet the objective of testing demonstrated knowledge and proficiency of how to safely operate the plant during emergency or abnormal conditions. Satisfactory ways of meeting this objective include, but are not limited to, the following: (1) information contained in the site's procedures, including alarm response procedures, AOPs, EOPs, and their associated bases documents (2) diagnosis that leads to selection of the procedures that should be used to respond to the evolution (3) the progression of an event (4) assessment of the integrated plant response to emergency or abnormal situations crossing several plant systems and/or safety functions 2. Include the parent question for bank and modified questions. BC comment ->If you have give power level in the stem (like 50 or 100%), why include Mode 1? Seems like extra info that is NOT needed
1	H	3												N	E	C	41.7	Reference Picture To make the distractors more plausible change the first half of the distractor to: A and C, A and D, B and C, B and D. Put them in a logical order like above and then make the correct answer match the A and D choice. The way it is currently written the logical distractor is not even a choice for applicant. Also in the distractor analysis for the incorrect choices securing the RHR pump is plausible because AOP-34 does secure the RHR pump but not until after the injection valve is overridden and closed to prevent auto start	
2	H	3												N	S	B	41.7	No comments	
3	F	3				X								N	U	C	41.2	Distractor B and D are not credible why would anyone select the level of the main steam lines as the point that you would fill to or the steam Dryers? Second question is this RO level knowledge, since the reference to the correct answer is in the EOP basis? Reword the question with same initial conditions to ask per EOP-1 the band to maintain level in is 10 to 51 inches, 45 to 100 inches, -20 to 51 inches or 75 to 100 inches. Each of these bands are levels that correspond a level band in either EOP-1 or the ability to cool down to less than 200 degrees in NC. BC comments -> I agree with the question not being RO level. I thought the exact same thing and was wondering why in the distractor explanation a procedure would not be referenced vs EOP basis. As, I'm not much of a BWR guy, couldn't recall level of dryers as compared to steam lines so didn't pick Answer B as not valid, but immediately thought Answer D was not a valid distractor. I like the recommendation of using RPV levels based on procedural requirements	

4	H	3					X							N	U	A	41.8	Reference Picture , Have a question as to what RCS pressure goes to during the "smallest LBLOCA" is it greater than or less than 480psig? Is there a direct entry into EOP-1A I thought it needed to be entered from EOP-1 or EOP-4A. Going from EOP-1 to EOP-1A creates a subset issue. if the answer is EOP-1A then EOP-1 could also be correct making EOP-1A not a possible distractor. BC comments -> not sure I understand your comments above. The correct answer is EOP-1 NOT EOP-1A, so no subset issue. I could not find Encl 26 (TSG-3.10) in the references. How do the operators know that a single control rod stuck fully out will NOT impact the reactor remaining shutdown? This information is in the basis section of TS, so appears to be SRO only knowledge????
5	F	3												N	S	D	41.8	No comments
6	F	3												N	S	B	41.7	No comments
7	H	3					X							N	U	B	41.7	Reference Picture , What would make not firing plausible? Power is needed to fire off the valves and no one would design a boiler that any partial loss of power would fire a squib valve right. BC comments -> What is the value of including the picture, since already indicated no power? If no continuity, how is the circuit going to actuate? I don't like the idea of telling a candidate that the bkr to the pump is open, should tell them a condition and then let them determine impact on component(s). Recommend rewriting, getting rid of picture and question something along the lines of "Panel EHS-MCC2A has lost power. In this condition, manually initiating SLC A would result in SLC Pump A ___1___ and Squib Valve A ___2___: A. 1. Running 2. Firing B. 1. Running 2. Not Firing C. 1. Not Running 2. Firing D. 1. Not Running 2. Not Firing
8	H	3												N	S	A	41.10	Reference Provided (one Procedure page and picture in stem)
9	H	3												N	S	A	41.7	Reference Picture , No comments
10	H	3												N	S	D	41.5	Reference Picture , No Comments
11	F	2												M	E	D	41.2	LOD is a 2 not 3, need to provide the parent question to determine if it is modified or bank. Also need more justification as to why center of core and bottom of core are acceptable distractors. Is there any instruments that are at those levels?
12	H	3												B	E	B	41.7	1997 NRC Exam , I do not believe that IRM upscale is a credible distractor for A and C, the pedigree of the question goes back to a really old rev of NUREG 1021 when all of the distractors were not required to be credible.
13	H	2												N	E	C	41.7	Reference Picture , LOD is 2 not 3, APRM upscale does not seem plausible for three of the answer choices, if you changed the APRM upscale alarm with the RPS Trip Logic B or D would be more plausible. BC comments -> none.
14	H	3												N	S	B	41.7	Reference Picture , No Comments
15	H	3												N	E	B	41.7	can we change the wording a little that the applicant knows the question is asking how much time from time either operator took action. IF this is how the questions are normally worded at Riverbend it can remain as is.
16	H	3												N	S	C	41.7	No comments

17	H	3												N	E	B	41.5	provide more detail as to why each of the distractors is plausible
18	F	2												N	E	A	41.7	Reference picture in stem , is the light lit or not on the picture? Lod is 2 not 3. basic setpoints, I believe it is a functional type question.
19	H	3												N	E	C	41.5	the explanation does a good job at explaining how the system responds. The distractor analysis is not as clear as to why the drain plug choice is plausible. If you could reword the analysis to say that ____ is plausible because this action is taken in surveillance XYZ (noun name) not in AOP-10.
20	H	2												B	E	A	41.5	2019 NRC, Reference Picture , Extra Space between the and DIV 1, This is LOD 2 not 3. 6 O'clock is not a credible distractor. K/A match is questionable. Question would be unsat had in not been on a previous NRC exam. Consider revising the question to something that would test syncing in the slow direction resulting in a reverse power situation. Revised Question to new question and is not a previous NRC question is New and Sat with no comments
21	H	3				X								N	U	B	41.7	Distractor analysis does not provide any reason as to why the incorrect answers are plausible. Specifically distractor A seems not plausible if level is rising why would it stop? BC comments - > I thought 1 implausible distractor made it an "E" vs. a "U." Also, recommend: changing stem to say: 1) "Inverter BYS-INV01B lost ALL power." and 2) changing remainder of the stem to say "As a direct result of this transient, reactor water level will ____." The operators should know what impact the loss of that inverter will have on plant equipment and shouldn't be included in the stem - dumbs down the question. With that information, I knew level would increase, so automatically threw out Answers C and D as implausible
22	F	3												N	S	D	41.7	No comments
23	H	3												N	S	D	41.7	No comments
24	H	3												N	S	B	41.7	No comments
25	F	2												N	E	C	41.7	LOD is 2 not 3, is there a n additional switchgear other than the SWG1B? Simple minds eliminate that one because the IA compressor in question is the A one. What are the power supplies for the B and C IA compressors those would be good distractors. need plausibility statements
26	H	3												N	S	D	41.7	No comments
27	F	3												N	S	B	41.1	No comments
28	H	3												N	S	A	41.5	No comments
29	H	3												N	S	A	41.7	No comments
30	H	3												N	S	B	41.7	No comments
31	H	3									X			N	U	D	41.7	Mis operating a valve during a surveillance doesn't mean the same as operating nuclear instrument controls, BC comments -> In looking at the K/A and the question, seems to be ok???? However, I don't like the distractors with Level 3, why not Level 1 -> just the opposite of Level 8 and if the high side was the variable leg (if individual gets it opposite from actual design), then level should go to minimum, correct?

32	H	3												N	S	A	41.5	in the K/A statement on the is missing a space between words,
33	H	2				X								N	U	D	41.5	Reference Provided, When I read the distractor analysis I understand the plausibility of the 250 and 70 but not the 140 please explain how this is plausible. LOD is a 2 not 3. BC comments -> 1 implausible distractor makes it an "E" vs. a "U." The 140 (I would call it 130 - 135) is shell side pressure, so I see how the could get this wrong. However, I initially thought only answers B and D were plausible, because pressure, but they could read the chart incorrectly, so ok with Answers A and C.
34	H	3					X							N	U	A	41.7	extra space between a and steam in stem. There is a subset issue in the second half of the question if the system will automatically operate at >= 45 psig then it will automatically operate at >= 60 psig as well. This makes all of the second half answers correct. the second question is what makes 60 a plausible distractor? BC comments -> GREAT catch on subset!! I missed that when I looked at it before looking at your explanation. I review the question and try to make my own assessment prior to looking at your Explanation, so I don't get jaded. Maybe change stem to say minimum pressure that it will automatically actuate
35	H	3												N	E	D	41.7	Provide some detail as to what will cause the bypass valves to open. The way it is written it looks like you through the bypass valve part in just to make a 2X2 question. Do the bypass valves use the same pressure transmitters as the control valves?
36	F	3												B	S	C	41.7	No comments
37	F	2												N	E	A	41.4	LOD 2 not 3, is there anyway to interpret the offgas glycol system does cool the offgas system indirectly? We may need to shore up the stem to ensure that no one can argue 2 correct answers.
38	H	3									X			N	U	D	41.7	DO not believe this meets the K/A the K/A is asking what the impact to the RV internals is due to a pressure transient and how procedures combat this issue. BC comments -> agree
39	H	3												N	S	B	41.7	No comments
40	H	3												N	E	A	41.10	Tier 1 Group 1 questions should address some kind of procedure either an ARP, AOP, EOP. To address the abnormal situation. Can you provide a stat alarm procedure or AOP that would help the operator to identify which transformer has failed?
41	F	3												N	E	C	41.7	Shore up for tier 1 question, In accordance with AOP-14 the loss of PNL 01 ____ (1) ____ (will/will not) remove electrical trip protection from ____ (2) ____ (Circ water pumps and Service water cooling pumps/ circ water pumps and Normal service water pumps) this ties the abnormal condition to an abnormal procedure and ensures only one correct answer.

42	F	2												N	E	C	41.10	All Tier 1 questions must meet the objective of testing demonstrated knowledge and proficiency of how to safely operate the plant during emergency or abnormal conditions. Satisfactory ways of meeting this objective include, but are not limited to, the following: (1) information contained in the site's procedures, including alarm response procedures, AOPs, EOPs, and their associated bases documents; (2) diagnosis that leads to selection of the procedures that should be used to respond to the evolution, (3) the progression of an event, and (4) assessment of the integrated plant response to emergency or abnormal situations crossing several plant systems and/or safety functions. While the question as written does meet the K/A it does not meet the tier requirements. Also you have both EOP-2 and AOP -2 listed in the distractors I believe the EOP-2 is a typo. Can you modify the question to have the applicant identify the entry conditions for AOP-2 or some other procedural hook in the first half and then use the TS angle for the second half this will allow you to maintain meeting the K/A and will also let you meet the tier. Also LOD 2, include in distractor analysis where the instrumentation for TS 3.1.1 is required but not the corresponding valve being operable
43	F	3												N	E	C	41.1	Again the Tier 1 issue, Can we get the immediate actions or the procedure selection to allow the tier portion to be satisfied in the question? I like the 7% and from what source.
44	F	2												N	E	D	41.7	Change the LOD to a 2
45	H	3												N	E	C	41.7	not recalling addressing the tier 1 concept. A loss of CCP to containment will require entry into ARP for give the same alarm choices.
46	F	3												B	E	D	41.7	Use 85 and 50 psig in a 2X2 question. A loss of instrument air is occurring. When IA pressure reaches _____ AOP-8 directs the operator to verify the _____ (inboard/outboard) MSIV's have closed. This will get the tier 1 aspect and basically ask the same question.
47	H	3												N	S	A	41.7	No comments
48	H	3												N	S	A	41.10	No comments
49	H	3												N	E	A	41.7	not meeting the intent of Tier 1. this is an interlock question not how you operate the plant. Can you incorporate the procedure into the question so it give the conditions of High Drywell pressure and ask based on the indications given what would the status of fan 6A and 7A be. make a combination of running not running 2X2. this would be more in line with the tier 1 aspect of the progression of an abnormal event
50	F	2									X			N	U	D	41.5	System question with no Tier 1 component. The K/A is asking for the reason for the Low set limit you give that to them in the stem reducing the question to how the SRV's are effected. LOD-2. BC comments -> I don't see how this question meets any of the Tier 1 requirements specified in Row 4 of this
51	F	3												N	E	C	41.6	This is not a Tier 1 question it is a TS basis question. Not sure if it is even RO level knowledge. The 120 degree does not seem credible. What is the abnormal condition that the plant is operating under. I did not unsat this simply because of the tier but the question as a whole needs to be revamped

52	F	3												N	S	A	41.10	No comments
53	F	3												N	S	A	41.9	No comments
54	F	3												N	E	B	41.10	is there a better distractor than A?
55	F	3												N	S	A	41.10	No comments
56														B	E	B		2019 NRC Exam: This does not test the ability of the applicant to safely operate during abnormal conditions as required in a tier 1 question. While releasing the XYZ tank alarm bad day comes in and the operator is required to verify(tank XYZ release is terminated? or something else plausible) by verifying (pump/valve) is off/closed.
57	F	2												B	E	D	41.10	LOD is a 2
58	H	3												N	S	D	41.5	Reference Provided,
59	F	3												N	S	D	41.8	No Comments
60	H	3												N	E	B	41.10	Reference Picture in stem, can you change the stem to ask per AOP/EOP to calculate the unidentified leak rate which of the following indications would be used. Same second half of the question
61	F	2												N	E	C	41.10	LOD-2
62	H	3												N	S	A	41.10	Reference Picture in stem,
63	H	2												N	E	B	41.10	is there really no handout for this question as the form states. Without a handout I would consider this a LOD 4 to 5 with a handout it is a LOD 2. I believe that the picture used in distractor analysis without the arrows should be a handout for this question
64	F	2				X								N	U	D	41.10	LOD-2, I question if high radiation would result in loss of structural integrity does not seem plausible. BC comments -> As before 1 implausible distractor doesn't make "U," but I believe Answers A and B are also implausible. Also, since the licensee description under K/A match describes knowledge of EOP basis for this, isn't that SRO only?
65	H	3												N	S	D	41.5	No comments
66	F	2												B	E	D	41.10	LOD 2 , need to include the parent question with bank or modified questions.
67	F	2												N	E	A	41.8	Change the second half of distractors to 1 or 2. the way it is you are telling them that 1 is correct.
68	H	3												B	S	C	41.10	include the bank question
69	H	3												B	E	A	41.10	2010 NRC, This question is too system specific for a tier 3 question. You could make it more general like when a repair activity is scheduled to take place in the switchyard the SM/CRS/Dispatcher/WCC SRO must be notified or any combination that would make it work.
70	F	2												N	E	C	41.10	LOD-2
71	F	1				X								N	U	D	41.10	This is LOD 1 question as written, concept is good but the delivery is not. With the mode selector switch in Refuel and vessel head intact all bolts tensioned the reactor is in mode(2 3/4 5). BC comments -> agree - way too easy, with fuel shuffle in progress, have to be in Mode 5, because vessel head would be off, so bolts not fully tensioned.
72	F	2												B	E	C	41.12	LOD-2, based on parent it looks like it should be a modified question

73	F	2												B	E	C	41.12	Previous NRC 2008 exam LOD-2, need to complete the distractor analysis
74	F	3												B	S	D	41.6	Previous NRC 2106
75	F	3												N	S	A	41.6	No comments
76	H	3												N	S	C	43.5	<p>Free Review Question: Since step 5.3 and 5.4 are at the discretion of the CRS/OSM what makes one a higher priority than the other? Need more detail in distractor analysis. In the distractor analysis you state that at EOL there is greater than 50 hours to boil. If the plant is at the BOL the fuel has not been in the pool for near as long as it would have been at the end of life. What would the time be if it has been 20 days since the core off-load? Need to either include that shortest time for a refueling SFP temperatures or provide something in the stem like changing the 100% BOL to EOL so the numbers you have in the detractor analysis work. Also provide information where the 50 hours comes from. Add in the distractor analysis why providing service water to SFP cooling is a plausible answer. The reasons that it is plausible are that it is a step in the AOP, and if the applicant believed that the reactor was already scrammed the SFP would be a higher concern than restoring CRD pumps. The current stance from the headquarters is that inclusion of a picture is the same as a handout. I am fine with the picture just information for you.</p> <p>RBS: Change the initial conditions from EOL to BOL 3 days after a refueling outage. This would greatly shorten the time to boil for the spent fuel pool making the distractors about placing the Fuel Coolers in service more plausible. Added more supporting information in the explanation and distractor analysis. Minor change request that the initial conditions be modified to three days after a 21 day refueling outage and add a line giving SFP temperature of 130 degrees. makes the distractors more credible. Also the distractor analysis clip from AOP -51 should be for the 24 day line not the 3 day line either way it still shows about 13 hours to 200 degrees. Question now Sat with changes</p>
77	F	3									X			B	U	B	43.2	How does this assess the ability to expalin and apply limits and precautions? BC comments -> agree.
78	H	3												N	S	B	43.5	No comments
79	H	3												N	E	B	43.2	Change the 110 to 100 degrees in the answer choices.

80	H	3												N	S	A	43.5	<p>Free Review Question: Question is in TS basis for SRO only information. All Tier 1 questions must meet the objective of demonstrated knowledge and proficiency of how to safely operate the plant during emergency or abnormal conditions.. Satisfactory ways of meeting this objective include, but are not limited to, the following: (1) information contained in the site's procedures, including alarm response procedures, AOPs, EOPs, and their associated bases documents; (2) diagnosis that leads to selection of the procedures that should be used to respond to the evolution, (3) the progression of an event, and (4) assessment of the integrated plant response to emergency or abnormal situations crossing several plant systems and/or safety functions. The question is a good one except for that it does not address any abnormal condition which is what tier 1 is supposed to address. Look at FAQ 401.55 for the revised information. Consider revising the question to incorporate an ARP, AOP, EOP abnormal condition addressed from a procedural prospective.</p> <p>RBS: added the abnormal event of a lowering RPV level to the stem of the question.</p> <p>ADD CFR link 43.5 to petigree</p> <p>Modifications to Question is acceptable Question is now SAT</p>
81	H	3												N	E	B	43.2	<p>Free Review Question: what type if insturmetation is installed on 480 volt switchgear to monitor for an open phase? I know that there was an industry push for monitoring for open phases at the main transformer switchyard level. I had not heard of any effort for open phase protection at the switchgear level. Please provide me with the specific open phase protection for Riverbend at the switchgear level and what it is protecting against. With this being said I believe that the open phase answers are not credible distractors.</p> <p>RBS: changed the distractor Open Phase to Undervoltage. This more plausible due to the fact 480 buses have undervoltage relays that alert operators in the control room.</p> <p>Minor Change to add 43.2 to the question petigree with this change the question will be Sat</p>
82	H	3												N	S	D	43.5	<p>Free Review Question: No issues</p>
83	H	3												N	S	B	43.5	<p>No comments</p>
84	H	3												N	S	D	43.5	<p>Free Review Question: the picture in the stem counts as a reference. This is a borderline SRO only question. Restoration of IAS to containment first before the CCP system could be considered the overall mitigative strategy. While the note indicates that the restoration of IA is very important it also has a note that indicates the restoration of CCP is important. Is there any documentation as to exactly why one is of higher importance than the other. Please include some of this information in the distractor analysis to try to shore up the SRO only argument.</p> <p>RBS: added more supporting documentation of why IAS is a higher priority than CCP from AOP-11</p> <p>Changes in the question are adequate and it is now SAT</p>

85	H	3												N	S	B	43.5	<p>Free Review Question: the first part of the question is RO only the isolation setpoint and its requirement is RO level knowledge. Knowledge of when ED is required is RO level knowledge.</p> <p>RBS: Added objective for all students and SRO only task listed in task list.</p> <p>With the additional learning objectives question is now SAT</p>
86	H	3												N	S	A	43.5	<p>Free Review Question: CFR link must be 43.X for SRO level questions. Best fit for this question is 43.5</p> <p>RBS: Made CFR link 43.5</p> <p>Question SAT</p>
87	H	2												B	E	C	43.5	<p>Need to assign CFR in question Should be 43.5, LOD should be 2. need to include the parent question from the cooper exam. First half is RO level, if you provide the TS it is not meeting the SRO only unless the Spec in itself does not provide the answer and the answer must come for knowledge of the basis. In this case the RO knowledge allows the determination between the 6 hour and 12 hour choice. Listing this as an Edit because it was used on a approved NRC exam</p>
88	H	3												N	S	A	43.5	<p>Reference Picture in stem,</p>
89	H	3												N	E	C	43.5	<p>Free Review Question: CFR need to be 43.X best fit would be 43.5. Picture constitutes a reference. The K/A says to use procedures to mitigate the abnormal condition. If you were to add in accordance with procedure XYZ the CRS will first direct XXXXX. the second half of each distractor can be eliminated using system knowledge only. The first half of the question is an RO level question so this does not meet the SRO only guidance.</p> <p>RBS: Changed the second part of the question to make the question SRO level.</p> <p>Reference Provided Still in need of some modification, Now that a TRM will be provided I need a copy of the actual proposed handout to the student to finish my evaluation. BC comments -> not a fan of this question because seems obvious that if channel fails downscale, actual water level will increase, so can throw out Answers A and B. Why not in the stem indicate one of the steam flow inputs failed high (the explanation for Answer C talks about steam flow failing high and indicates this is shown on a picture, but I don't see a picture.). Is the BWR level control system level dominate? If so, seems like level would increase, but stabilize at some higher level</p>
90	F	2												N	S	C	43.2	<p>No comments</p>
91	H	3												N	S	D	43.2	<p>Free Review Question: formatting if distractor analysis and K/A match sections is not correct. There is no SRO analysis included. Otherwise is acceptable</p> <p>RBS: Corrected distractor analysis and K/A match sections. Still needs some additional work. NO SRO only worksheet included. Question is now SAT</p>
92	F	3												N	S	B	43.4	<p>No comments</p>
93	H	3												N	S	D	43.2	<p>Free Review Question: Should be 43.2</p> <p>RBS: Changed to 43.2</p> <p>Question is now SAT</p>

