Form 2.3-5 Written Examination Review Worksheet

Q#	1. LOK (F/H)	2. LOD (1–5)	3. Psychometric Flaws					4. Job Content Flaws				5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
1	F	2												M	E	From N1-SOP-1.5 second override also supports the answer: If NO Recirc pumps are running, THEN Manually SCRAM the Reactor AND enter N1-SOP-1. Answer explanation indicate N1-SOP-1.3 is the only SOP to provide direction for a reactor scram. Additionally, the incorrect answers reference N1-SOP-1.5 as an SOP which provides a plausible distractor. **Recommend adding N1-SOP-1.5 procedure override to answer explanation for clarification.** **Added information about N1-SOP-1.5 scram requirement to answer explanation.**
2	F	3												B	E	Supplied reference for question #2, NMP1 PSTG/PSSAG Vol. I (Introduction and References), provides a justification for the answer but is not listed as a technical reference or mentioned in the answer explanation. **Recommend adding NMP1 PSTG/PSSAG Vol. I (Introduction and References) to the technical reference section of the question. Additionally, add IAW NMP1 PSTG/PSSAG Vol. I (Introduction and References) to the answer explanation.** **Added NMP1 PSTG/PSSAG Vol. I as technical reference.**
3	F	3												B	S	
4	H	3												M	E	Answer explanation is simply a restatement of the correct answer. **Supplied reference N1-OP-16 Section B.2. Feedwater System High Pressure Injection (HPCI) mode of operation should be referenced** as it provides a better explanation and justification for the correct answer. **Added detail from N1-OP-16 section B.2 to answer explanation.**
5	H	3												B	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
6	F	3												M	E	N1-SOP-21.2 is not listed as a Technical Reference; however, in Section 5.2 Remote Shutdown Panel Indications, Drywell Pressure is listed. Technical Specification Table 3.6.11-1, Technical Specification Table 3.6.13-1 are not provided in attached references to verify post-accident instruments. **Recommend adding N1-SOP-21.2 to Technical References and T/S tables to attached references.** **Added N1-SOP-21.2 to technical references.** **Added N1-SOP-21.2 section 5.2, Technical Specification Table 3.6.11-1, Technical Specification Table 3.6.13-1 to references.**
7	F	3												B	S	
8	H	3												M	S	
9	F	3												B	E	N1-SOP-20.1 Table 1 for valve failure on a loss of instrument air is not listed as a Technical Reference. It provides information on RBLC 70-53. It provides no information on SDC valve operation, only to shutdown SDC. Procedure CR should be considered post exam. This Table was probably a corrective action for an INPO SOER from the late '80s. **Added to list of potential post-exam procedure changes.**
10	F	2												N	S	
11	H	3												B	S	
12	H	3												B	S	
13	F	3												M	S	
14	F	3												B	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
15	F	2												N	S	
16	H	3												B	S	Answer Explanation seems to justify TWO different answers: If Reactor water level reaches -126", this method of ACC will be lost. ACC by Spray Cooling is not available because no Core Spray pumps are available. Therefore, if Reactor water level reaches -109", ACC will no longer be assured. NRC Question: Is the answer -126" or -109" (NRC Question?) Please clarify. **Fixed 2 errors in answer explanations. The answer is -126".**
17	H	3												B	S	
18	F	3												N	S	**Is this RO level or SRO level Question?** If there is something in your program to indicate that this is RO level knowledge, then OK…otherwise, may be SRO level question OR SRO level K/A. **EOP entry conditions are RO knowledge. Question does not require RO to classify emergency, only requires knowing which classification matches the N1-EOP-RR entry condition.**
19	F	3												B	S	
20	H	3				x								N	E	Distractors A and B are not plausible if there are no criteria for 345 KV conditions. However, the answer explanation indicates there are criteria for 115 KV from: N1-SOP-33A.3 does have various steps that are required based on 115 KV Voltage. **Recommend replacing 345 KV (distractors A and B) with 115 KV voltages, ensuring they do not require a scram or turbine trip.**

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
																Override also contains a decision on first stage bowl alarm condition. With RTP at 100%, the first stage bowl alarm will NOT be in alarm. This may be considered for inclusion in the answer explanation. **Replaced A and B with 115 KV Line voltages. Added statement about Turbine first stage bowl pressure to answer explanation.**
21	H	3										x		N	U	K/A Mismatch K/A: Knowledge of the reasons for the following responses or actions as they apply to LOW REACTOR WATER LEVEL: Recirculation runback Question involves a reactor scram, cause unknown. There is no indication of a low water level condition. Is it implied that a low water level condition will occur following the scram based on shrink. If this is the K/A tie, this should be explained in the answer explanation or a K/A explanation. Recommend changing question to include a low water level condition. **Changed stem to explicitly include low Reactor water level.**
22	F	3												B	S	
23	H	3												B	S	
24	H	3												N	S	
25	F	2												M	E	Typo – “Which one…. identifies the event **that** requires…” **<u>NRC Question</u>: Does a chemical spill in RW require and SOP actions? If so that would make (2) true. As a result, there would be NO correct answer.** **Fixed typo in question.**

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
																There is no SOP that would be entered on chemical spill in RW.
26	H	3												B	S	
27	H	3												B	S	
28	H	3												N	S	
29	F	3												N	E	Is the first word in each distractor for the ALPHA system or simply the beginning of the distractor? There are two ECs, if it's an ALPHA – recommend using quotes "A". **It's being used just as the beginning of the distractor, similar to if we replaced it with "One".**
30	H	3												N	S	
31	F	3												B	S	
32	H	3												N	S	**NRC Questions:** When operator places SLC switch in SYS 11 position, both SLC continuity light extinguish? Why is SYS 12 continuity light extinguished? **SYS 12 continuity light extinguishes because both squib valves are fired regardless of which way the switch is taken.** Can you get a thermal overload or breaker trip conditions based on Amps being upscale, if so, does that make the questioned flawed? **There is a thermal overload on the breaker that could eventually open. Question appears ok (thermal overload would take some amount of time to open, in the meantime, given conditions are valid).**
33	H	3												M	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
34	H	2												N	E	Grammar error on answer explanation for distractor "A" A. Incorrect – A half scram is received on RPS 12, only. Plausible that is would take more than… Replace "is" with "it". **Fixed typo.**
35	H	3				x								B	E	SRMs 11 and 14 are fully inserted and reading 9 and 15 cps – is this operationally valid considering also on IRM Range 2? **Yes it is valid, IRMs at NMP1 don't have a Range 1, so Range 2 is as low as you can go.** **Recommend changing SRMs 11/14 to a number <100 cps but >80 cps for operational validity and plausibility.** **Changed as recommended.** **NRC Question:** Why SRM 12 not in the distractor? SRM 12 is in the stem? **Could change distractors if desired. SRM 12 is highest reading SRM, so likely least plausible to be causing a block. The given distractors seemed like best options for plausibility with the original numbers used for SRM counts.**
36	H	3												B	S	
37	H	3												B	S	
38	H	4												N	S	
39	H	3												N	S	
40	F	2												B	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
41	H	3												M	S	**NRC Question: Is Red light above valve look bright enough to indicate light is lit?** **Added "Lit" and "NOT lit" to each light to avoid any confusion.**
42	H	3				x								B	E	Stabilize below 930 psig – how far below 930 psig? Eventually, pressure will stabilize – can this ever be wrong? **Recommend a range 920-930 psig or slightly below 930 psig.** **Changed 2nd half of A and B to "slightly" below 930 psig.**
43	F	2												N	S	
44	H	3												N	S	
45	F	2												N	S	
46	F	3												B	S	
47	F	2												B	S	
48	F	2												B	S	
49	F	2												N	S	
50	F	2												N	S	
51	F	3												B	S	N1-SOP-20.1 does not contain a description of the failure position for valve 60-04, consider a procedure improvement following the exam. **Added to list of potential post-exam procedure changes.**
52	H	3												N	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
53	F	2				x								N	E	Question contains a specific determiner – only information needed is RRP 12 power supply. **Recommend changing distractors:** - **Distractor A - RRP 12 NOT Running to eliminate specific determiner** - **Distractor B RRP 14 NOT Running to balance distractors** **Revised as recommended.**
54	F	3												N	S	
55	H	3				x								B	E	Distractors A and D are weak. D - How can a post-accident monitoring system never be restored? **Recommend 2x2 array (1) isolated because of DW pressure or RPV water level (2) bypassed using CAD or AUTO VESSEL** Reduce RPV water level from 72" to closer to the isolation setpoint (+5") but above it ~20". **H2O2 - make sure that is how is written in the procedure or need to change to "H2 & O2"** **Revised as recommended. Verified in procedures that "H_2O_2" is valid nomenclature.**
56	H	2	x											N	E	Unbalanced distractors. Question asks status of the Containment Spray, but C and D have additional information about Raw Water status **Recommend modifying stem to include Raw Water status and add to distractors A and B for balance.** **Revised as recommended.** Technical Reference section does not contain SDBD on Raw Water pump operation which is included in the marked up references. **Added SDBD to list of Technical References.**
57	H	3												B	E	Secondary Containment entry would also not be required if the plant was shutdown – **this could be added to plausibility for distractors B and D.**

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
																Added to plausibility statements for B and D as recommended. Modified question changes were not satisfactory. Stem remained essentially the same, distractors were changed to add second half of answer but the first half of answer was the same. **Reclassify as a Bank Question** unless: from NUREG 1021:"The NRC chief examiner agrees that the bank question is significantly modified, and an applicant would not be able to arrive at the correct answer because he or she recognizes the question from the bank." **Discussed and decided Modified Bank classification is ok.**
58	H	3												N	S	
59	H	3											x	N	E	**K/A part B is not clearly met – modify stem to ask what action IAW scram/EOP-1 should be used for pressure control.** Current stem does not specify anything about post scram pressure control? **Revised wording of question to better align with K/A and answer choices.**
60	H	1												N	U	**LOD=1; without aux oil pump all equipment will be damage. select new K/A,** **Resampled and replaced question.**
61	F	3												B	S	
62	H	3												M	S	
63	F	3												B	S	
64	F	2												N	S	
65	F	2		x										B	E	Distractors A and B contain the term "all" which is usually a cue for an incorrect answer.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
																Recommend changing to another specific power level for example >80% or between 5 to 10% (high in the IRMs with limited void feedback) **Revised as recommended.**
66	H	3												B	S	**NRC question:** Notch withdrawal = single notch withdrawal? In the stem, do you need to specify "Single notch withdrawal…." to make the answer bullet proof? **Specified "single" notch withdrawal through question and explanation.**
67	F	3												M	E	Question is designated as Higher for LOK. Question requires simple recall of Safety Limits for level and pressure. **Code Q as M/F.** **Changed as directed.**
68	H	3												B	S	
69	F	3												B	U	This condition in the stem contradicts the procedure: (2) Review the associated ARP before and after receipt of the alarm. From OP-AA-103-102: The Operator shall REVIEW the Annunciator Response Procedure/Alarm Response Card associated with the planned alarm(s) either before or after the alarm is received the first time the alarm comes in on a shift for applicability **Applying the AND and OR criteria – there is NO correct answer, which would make question UNSAT**. **Revised (2) to allow before and/or after.**
70	F	2												B	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
71	H	2												B	S	
72	H	2												B	S	
73	H	3												B	S	
74	F	2												N	S	
75	F	2												B	S	
76	H	3												B	E	N1-SOP-1.3 is not included as marked up reference even though it is referenced in (1) for power level IAW. **Added N1-SOP-1.3 to reference package.** Modified question changes were not satisfactory. Stem changed only slightly, and the answer remained the same 90% with thermal limit penalty. **Format changed makes question look different but should be reclassified as a Bank Question**. **Reclassified as "Bank".**
77	H	3												N	E	**Recommend moving: "in accordance with N1-SOP-33A.3" in the stem to the beginning of the question, not the end for readability**. **Discussed and decided current wording/format is consistent with rest of exam.** N1-SOP-33A.3 specifies voltage on any two phases – question stem does not provide phase voltage status – **is the applicant to assume all three phase voltage drop to the given values? Recommend adding all three phases reached the given values to comply with given override**. **Specified voltages are on all three phases.**
78	H	3				X								B	E	Distractor D is unbalanced with a second procedure reference based on a failure to scram**. Recommend deleting last sentence of D distractor.** **Deleted last sentence in choice D.**

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
79	F	3												M	S	
80	F	3												B	E	Very similar question to Q#79 – procedure implementation strategy. **Recommend resample K/A or rewrite one of the two questions.** This may be a RO level of knowledge on EOP implementation – all legs are performed concurrently upon entry. Another reason to resample k/a. **Replaced question.**
81	H	4												B	E	**Recommend: Provide the other curves that are similar (do not provide any help with other Qs)...take note out of the stem ("Note: Heat Capacity Temperature Limit curve is provided on the next page") and remove embedded reference.** Is the HCTL curve correct (verify) – according to the supplied figure as T/L lowers a higher T/T is allowed – this doesn't seem correct. A lower T/L has less capacity for absorbing heat; however, it appears the figure allows a higher temperature. **Verified given HCTL curve matches N1-EOP-PC.** **Deleted note and moved provided reference to separate package.**
82	H	4												N	S	
83	F	3												B	E	Both Q#82 and Q#83 ask how is RPV pressure controlled? The action to place both ECs in service **is an Immediate Action from N1-SOP-33A.2**, which a RO would be responsible for knowing. Answer explanation provides some indication of EOP/SOP prioritization, but this should be the focal point of the distractors – for example "IAW EOP-X – perform action Y", "IAW SOP-R – perform action Z" **An SRO justification may provide clarity to explain reasoning. Add how 55.43(5) criterion is met.**

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
																Added SRO justification as recommended.
84	H	4												M	E	Answer explanation for evaluating T/S 3.1.1 is a restatement of the answer – entry is not required, why? **More needs to be included to complete this evaluation. Provide explanation on why LCO entry is not required in the explanation.** **Added detail regarding Technical Specification 3.1.1 in answer explanation.**
85	H	4												M	S	
86	H	3												M	S	
87	H	3												M	E	Could inserting a scram be viewed as a conservative action based on 59 psig and lowering? **The question wording ("required") would eliminate any argument from student regarding conservative action.**
88	H	4				x								N	S	
89	F	2												N	S	
90	H	3												M	S	
91	H	3				x								B	E	Distractor A is not plausible – modify to "direct a powetr reduction IAW XXX to 50% and and monitor radiation readings **Modified distractor A to be an emergency power reduction, similar to as suggested.**
92	H	3												N	S	
93	H	3												M	S	

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q–K/A	License Le-vel			
94	H	3				x								B	E	**Question could be designated 55.43(2) since it involves implementing T/S actions.** **Added 55.43(2) designation.** **Could Distractor A be considered correct since the time limits would be met in a conservative direction?** **Distractor A is a subset issue.** **Added "latest" to question wording.**
95	H	3				x								B	E	Recommend changing distractor C to SM permission – one layer of oversight above the individual who may have made the error – seems more plausible. **Revised as recommended.**
96	F	2												B	S	
97	H	3												B	S	
98	H	3				x								B	E	Distractors C and D state injection from another system – another system could be Fire Water which is an external source of water which would be incorrect. **Recommend specifying a system such as Core Spray or use Fire Water as an incorrect distractor for A/B.** **Edited C and D to specify Core Spray.** **Remove embedded reference** – similar to Q81; remove associated note in the stem. (Note: The Primary Containment Pressure Limit (PCPL) curve is provided on the next page.) **Deleted note and moved provided reference to separate package.**
99	H	2												B	U	Express dose in Rem (TEDE) **Changed to Rem in stem.** Three correct answers –

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																Distractor A is also correct since “or” is used. Since first half is correct and contains “or” – answer is correct. Distractor D is also correct since “or” is used. Since second half is correct and contains “or” – answer is correct. **Revised wording of question and answers.**
100	F	2												M	E	Question is designated a higher order question; however, the applicant will answer the question based on their recall of SAG entry conditions in Detail V. **Change Q to M/F.** **Changed as requested.**

Form 2.3-5 Instructions for Written Examination Review Worksheet

Refer to ES-4.2 for the definitions of terms used in this worksheet for the written examination. Review each question (Q) as submitted and as subsequently revised and document the following in the associated worksheet columns:

1. Enter the level of knowledge (LOK) as either (F)undamental or (H)igher cognitive level.
2. Enter the level of difficulty (LOD) from 1 (easy) to 5 (difficult); mark direct lookup questions (applicant can directly determine the answer from the provided reference) as LOD 1. A question is (U)nsatisfactory if it is LOD 1 or LOD 5.
3. Check the appropriate box if a psychometric flaw is identified:
   - "Stem Focus": The stem lacks enough focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information). This is an (U)nsatisfactory question.
   - "Cues": The stem or one or more answer choices contains cues (e.g., clues, specific determiners, phrasing, length). This is an (U)nsatisfactory question.
   - "T/F": All of the answer choices are a collection of unrelated true/false statements. This is an (U)nsatisfactory question.
   - "Cred. Dist.": The distractors are not credible; single implausible distractors require (E)nhancement, and more than one noncredible distractor in the same question results in an (U)satisfactory question.
   - "Partial": One or more distractors are partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by the stem). This is an (U)nsatisfactory question.

4. Check the appropriate box if a job content flaw is identified:
   - "Job Link": The question is not linked to the job requirements (i.e., the question has a valid knowledge or ability (K/A) but, as written, is not operational in content). This is an (U)nsatisfactory question.
   - "Minutia": 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). This is an (U)nsatisfactory question.
   - "#/Units": The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons). This is an (U)nsatisfactory question.
   - "Logic": The question requires backward or reverse logic or application compared to the job requirements. This is an (U)nsatisfactory question.
5. Check the first box if a K/A mismatch flaw exists. Check the second box if the question is flawed because it is written at the wrong license level. Either condition results in an (U)nsatisfactory question.
6. Enter the question's source: (B)ank, (M)odified, or (N)ew. Verify that (M)odified questions meet the criteria of ES-4.2.
7. Based on the review performed in steps 2–5, mark the question as (U)nsatisfactory, in need of (E)nhancement, or (S)atisfactory.
8. Fully explain the reason for any (U) in column 7 (e.g., how the psychometric attributes are not being met).
9. Save the initial review comments and detail subsequent comment resolution so that each exam-bound question is marked by an (S) on this form.