

Facility: LIMERICK GENERATING STATION

Exam Date: July 12 – 22, 2021

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. B/M/N	7. U/E/S	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
1	H	3												N	E S	<p>NRC:</p> <ul style="list-style-type: none"> Reference provided for Q57, i.e., OT-112, "Unexpected/Unexplained Change in Core Flow," Attachment 4, "LGS Power Flow Operation Map, OPRM Operable – <u>ALL</u> Feedwater Heaters in Service," can be used to eliminate Distractor D (Action to Scram would not be required). Distractor D will require replacement if issue is to be addressed under Q1. <p>LIMERICK:</p> <ul style="list-style-type: none"> Replacement "D" distractor written to remove potential use of Q57 reference to eliminate "D" as an answer.
2	F	3												B	S	2012 LGS NRC EXAM
3	H	3												N	E S	<p>NRC:</p> <ul style="list-style-type: none"> Provide procedure titles for E-1FA and E-1FC. <p>LIMERICK:</p> <ul style="list-style-type: none"> Procedures titles added.

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

- Enter the level of knowledge (LOK) of each question as either (F)undamental or (H)igher cognitive level.
- Enter the level of difficulty (LOD) of each question using a 1 (easy) to 5 (difficult); questions with a difficulty between 2 and 4 are acceptable.
- Check the appropriate box if a psychometric flaw is identified:
 - "Stem Focus": The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
 - "Cues": The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length).
 - "T/F": The answer choices are a collection of unrelated true/false statements.
 - "Cred. Dist": The distractors are not credible; single implausible distractors should be repaired, more than one is unacceptable.
 - "Partial": One or more distractors are partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).
- Check the appropriate box if a job content error is identified:
 - "Job Link": 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).
 - "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).
 - "#/Units": The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
 - "Backward": The question requires reverse logic or application compared to the job requirements.
- Check questions that are sampled for conformance with the approved K/A and those that are designated "SRO-only." (K/A and license-level mismatches are unacceptable).
- Enter question source: (B)ank, (M)odified, or (N)ew. Verify that (M)odified questions meet criteria of ES-401 Section D.2.f.
- Based on the reviewer's judgment, is the question, as written, (U)nsatisfactory (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- At a minimum, explain any "U" status ratings (e.g., how the Appendix B psychometric attributes are not being met).

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4	H	3 2				X								N	E S	<p>NRC Early Review Question</p> <p>NRC:</p> <ul style="list-style-type: none"> Distractor 'A' does not appear to be credible and can be easily eliminated. Question statement asks for the action required to mitigate the event. Performance of S38.1.L to apply different "Thermal Limit Curve Set Changes" within the 3D Monicore System, amidst rising reactor pressure with degraded BPV response, would not be a plausible action to mitigate the pressure rise. Editorial: Stem statement reads "Rising vibration on the Main Turbine require operators to trip the turbine." Should be "requires" plural. Label the Answer and Distractor Explanations. <p>LIMERICK:</p> <ul style="list-style-type: none"> Revised answer to: Reduce reactor power by incrementally lowering RRP speed; Wrong. Lowering reactor power is an immediate operator action in OT-102, however in this case lowering RRP speed is not an option since the RRP's are already operating at minimum speed (466 RPM). Fixed editorial comment as requested. Labeled Answer and Distractor Explanations.
5	F	2				X								B	E S	<p>2012 HOPE CREEK NRC EXAM</p> <p>NRC:</p> <ul style="list-style-type: none"> Distractor C is not credible. Why would an applicant believe that position "24" (i.e., mid-core) would be below the <i>Maximum Sub-Critical Banked Withdrawal Position</i> (MSBWP)? <p>LIMERICK:</p> <ul style="list-style-type: none"> Changed the question such that the control rod not inserted is at position "04" vice position "24". This improves the plausibility of distractor "C", with the control rod being closer to fully inserted (and the MSCBWP) rather than at the mid-point of the core.
6	F	2 3									X			N B	U S	<p>2016 LGS NRC EXAM (Replacement Question)</p> <p>NRC:</p> <ul style="list-style-type: none"> Question UNSAT as written. Question can be answered without any knowledge of Control Room Abandonment subject matter or Special Event Procedure SE-1, "Remote Shutdown," and as such, does not meet the intent of the coupled K/A. <p>LIMERICK:</p> <ul style="list-style-type: none"> Question replaced with Bank Q.
7	H	2		X										N	E S	<p>NRC Early Review Question</p> <p>NRC:</p> <ul style="list-style-type: none"> Suggest changing the T=0 Temperature to 120°F and the heat-up rate to 2°F/min so that the times in Part 2 work out evenly (i.e., 130°F and 140°F

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20	H	3												N	S	
21	H	2		X										N	FE S	<p>NRC:</p> <ul style="list-style-type: none"> Change the Reactor Power level from 24% to 28% in the first bullet of the stem to raise the discrimination validity of the question. In addition, change the Reactor Power level from 24% to 28% in the explanations for correct Answer C and Distractor B. Remove the 3-minute action time from correct Answer C and Distractor B. The stem information and wording of the question statement are sufficient for the applicants to determine the correct answer. The applicants are expected to know the Main Turbine Trip Low Vacuum Trip Setpoint (21.5" Hg Vac) and that Main Turbine Trip is therefore imminent based on initial value of Condenser Vacuum and the rate of degradation. Providing the 3-minute action time can potentially cue the applicants that the Main Turbine must be tripped at 22" Hg Vac should they fail to recall the 21.5 " Hg Vac Trip Setpoint. Remove the word "only" from correct Answer C. Inclusion of this qualifier has the potential to cue the applicants and is not necessary. <p>LIMERICK:</p> <ul style="list-style-type: none"> Corrections made as requested Added Main Turbine 1st stage pressure to stem at 175 psig to limit indeterminate state of scram bypass state at the increased power level of 28%. The Rx scram signal for Main Turbine Stop/Control valve closure is bypassed until 1st stage pressure reaches 188 psig and is not based on directly on Rx power. At 28% Rx power, the bypass state is indeterminate..
22	H	2												N	FE S	<p>NRC:</p> <ul style="list-style-type: none"> Distractors A and B can be easily eliminated with 3 of 4 Narrow Range (NR) Level Instrument failures. Recommend eliminating the 3rd bullet for failure of 1A FWLC NR Level Instrument and enhancing the stem by stating that the electrical transient resulted in simultaneous failure of B and D NR Level Instruments. Choice D remains the correct answer. Revise Answer D explanation to reflect the fact that a simultaneous failure of 2 RPV NR Level Instruments will cause a Feedwater failure and resultant swap to Manual of the RFP Controllers. Note that the explanation for correct Answer D, as written, incorrectly states that the system has no level input. This would appear to be in error since 1C FWLC NR Level Instrument is unaffected (stem only indicates 3 RPV NR Level Instrument failures; 1A, 1B, 1D). Last sentence in the explanations for Distractors A and C states "A and B would not cause a trip." This statement is confusing. What is 'A' and 'B' referring to? Clarification required. <p>LIMERICK:</p> <ul style="list-style-type: none"> Removed the "A" Transmitter failure. D remains correct answer. Revised answer D explanation. A failure of 3 of 4 inputs would result in the FWLCS interpreting this as a loss of all level indication since there is no valid comparison checks.

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36	F H	4 3										X	B	U S	<p>NRC:</p> <ul style="list-style-type: none"> Question is LOD=1 as written. In addition, the question does not meet the intent of the K/A. K/A states “Ability to predict and/or monitor changes in parameters associated with operating the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM controls, including: SCRAM and Rod Block trip setpoints.” The “operate IRM system controls” aspect of the K/A has not been addressed. Suggest that the question be revised to include operation of the IRM Range Switches and determining the associated impact with respect to the Scram and Rod Block setpoints. NRC Question History Field on the Pedigree Sheet contains the number 1741662. Confirm that this question was not used on either of the previous 2 NRC Exams? <p>LIMERICK:</p> <ul style="list-style-type: none"> Replaced question.
37	H	3											B	S	<p>2018 LGS NRC EXAM (Previous 2 NRC Exams)</p> <p>NRC:</p> <ul style="list-style-type: none"> Answer and Distractor explanations are not labeled on the Pedigree Sheet. <p>LIMERICK:</p> <ul style="list-style-type: none"> Labeled Answer and Distractor explanations on the Pedigree Sheet.
38	H F	3											B N	E S	<p>NRC:</p> <ul style="list-style-type: none"> The plausibility explanations for Distractors B, C, and D do not appear to support the Distractor answers, given the 6% reading provided in the stem for the failed LPRM Detector at Elevation ‘C’. Why reference T-101 “SCRAM condition with power above 4%” entry criteria as a bases for distractor plausibility, especially when the stem indicates that the LPRM Detector reading only dropped to 6%. Why not just say that the applicant may confuse or not recall the input signal level below which the signal is automatically removed from the RBM channels? Separately, suggest revising the question by providing an LPRM Detector failure reading below the 3% threshold value (i.e., 2%) and revising the explanations on the Pedigree Sheet accordingly. This would change the correct answer from Choice ‘A’ to ‘B’ while at the same time raising the overall Discrimination Validity of the question. <p>Note that the suggested change makes the question “Modified” in accordance with NUREG-1021, ES-401, which states:</p> <p><i>“Changing the conditions in the stem such that one of the three distractors in the original question becomes the correct answer would also be considered a significant modification. The intent or objective of the question does not necessarily have to be changed.”</i></p>

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45	H F	1 2		X	X										B N	U S	<p>NRC:</p> <ul style="list-style-type: none"> Question UNSAT. Collection of Distractors point to the correct answer (Choice C). Each distractor consists of a range of values that provide no actual basis for individual selection given the information provided in the stem. With the SGTS Bypass Damper stuck closed, all air flow is directed through the B SGTS Fan. Because there is no way to determine even an approximate value for which any of the three distractors would be plausible, the applicant only need recall the proper D/P setpoint vale (i.e., ≤ -0.25 IN W.C.). What information would lead an applicant to incorrectly select (a) <0.00" to - 0.15" H₂O over ≤ - 0.25" H₂O, or (b) 0.00" to + 0.15" H₂O over ≥ + 0.25" H₂O OR vice versa? <p>LIMERICK:</p> <ul style="list-style-type: none"> Replaced question.
46	H	3													B	S	
47	H	3													N	S	<p>NRC Early Review Question</p> <p>NRC:</p> <ul style="list-style-type: none"> Label the Answer and Distractor Explanations. <p>LIMERICK:</p> <ul style="list-style-type: none"> Labeled Answer and Distractor Explanations.
48	F H	3													N	E S	<p>NRC:</p> <ul style="list-style-type: none"> Explanation for Distractor A states <i>“Plausible to the candidate that confuses the ASD Runback UPS with the ASD control power ASD.”</i> Should the last part of this sentence read <i>“... ASD control power UPS”</i>? Last part of the explanation for Distractor D is awkwardly written and is confusing; i.e., <i>“... since the circuitry has no power or that if this power to the controller, the backup controller will take over.”</i> Improve the readability of the explanation. <i>Level of Knowledge (LOK) is classified as Low Cognitive Level (LCL) (i.e., Fundamental) on the Pedigree Sheet. Appears that the question should be classified as High Cognitive Level (HCL) based on the guidance in NUREG-1021, Appendix A. Explain the Low Cog assignment.</i> <p>LIMERICK:</p> <ul style="list-style-type: none"> Replaced with new HCL question.
49	H	2											X		B M	U S	<p>Reference provided:</p> <p>Embedded Reference; Battery Ammeters (1A1 and 1A2) displaying DC amperes as a function of selector switch position (Positions 1 and 2).</p> <p>NOTE: Embedded pictures, sketches, drawings, and graphs, with exception, are considered to be <i>“references.”</i></p>

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66	F	2												N	E S	<p>NRC:</p> <ul style="list-style-type: none"> The explanation for Part 2 of Distractor C is missing. The explanation for Part 2 of Distractor D belongs with Part 2 of Distractor C. <p>LIMERICK:</p> <ul style="list-style-type: none"> Corrected mislabeling of Distractors C and D.
67	F	2												B	E S	<p>2016 LGS NRC EXAM</p> <p>NRC:</p> <ul style="list-style-type: none"> Plausibility associated with Distractor D is questionable; i.e., <i>No rubber gloves but a PPE requirement for face shield and insulating blanket</i> to conduct a "proceduralized" bypass of the RVCU low flow trip by installing a jumper in the 125 VDC logic circuit...Enhancement required. <p>LIMERICK:</p> <ul style="list-style-type: none"> Added rubber gloves to distractor D.
68	F	2								X				B	U S	<p>2016 LGS NRC EXAM</p> <p>NRC:</p> <ul style="list-style-type: none"> K/A mismatch. Generic K/A 2.2.6 states "<i>Knowledge of the process for making changes to procedures.</i>" Question, as written, does not test any aspect of the actual process for making procedure changes prescribed in AD-AA-101, "<i>Processing of Procedures and T&RMs.</i>" <p>LIMERICK:</p> <ul style="list-style-type: none"> Replaced the question.
69	F	3												N	S	
70	F	2												B	S	<p>NRC:</p> <ul style="list-style-type: none"> NRC Question History Field on the Pedigree Sheet contains the number 980302. Confirm that this question was not used on either of the previous 2 NRC Exams? <p>LIMERICK:</p> <ul style="list-style-type: none"> Verified that question was not present on either of the last 2 NRC exams.
71	H	3												B	S	<p>NRC:</p> <ul style="list-style-type: none"> NRC Question History Field on the Pedigree Sheet contains the number 738395. Confirm that this question was not used on either of the previous 2 NRC Exams? <p>LIMERICK:</p>

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RO TOTALS:	B= 26 M= 2 N= 47	F= 31 H= 44	E= 35 U= 8	Additional Notes: 10.7% of RO questions assessed as unsatisfactory.
SRO TOTALS:	B= 11 M= 0 N= 14	F= 4 H= 21	E= 15 U= 5	Additional Notes: 20.0% of SRO questions assessed as unsatisfactory.
<u>GENERAL COMMENTS:</u>				
1. There are <u>7</u> (RO) / <u>8</u> (SRO) questions with references/attachments provided (<i>Count total includes Embedded References</i>).				
2. Questions from the previous 2 NRC Exams: <u>2</u> (RO)/ <u>1</u> (SRO)				