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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
1	H	~~1~~ 2				X								B	~~U~~ S	NRC: • Part 1 of Distractors A and C do not appear to be plausible. While the Distractor Explanation discusses the operation of RR Limiter 4, it does not provide any explanation or insight as to why the failure of this Limiter would be a plausible alternative to the correct answer (Neutron Flux Instabilities), given the trip of a RR Pump, Rx power cycling 10%, and recurring LPRM Upscale and Downscale alarms. Question is LOD 1 as written. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Question Cognitive Level has been added to the Pedigree sheet. • Remove Limiter 4, replaced distractors with RRMG set is operating in speed oscillation region. This distractor is plausible for the power oscillations, however is incorrect because the RRMG speed in not in the oscillations speed ranges.
2	F	2		X										B	~~E~~ S	NRC:

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 (easy) to 5 (difficult); questions with a difficulty between 2 and 4 are acceptable.
3. 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).
4. 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.
5. 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).
6. Enter question source: (B)ank, (M)odified, or (N)ew. Verify that (M)odified questions meet criteria of ES-401 Section D.2.f.
7. 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?
8. At a minimum, explain any "U" status ratings (e.g., how the Appendix B psychometric attributes are not being met).

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Specific determiner that gives clues to the answer. Distractors C and D are equivalent / synonymous options, both of which can be ruled out by an applicant who recognizes the equivalence. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Question Cognitive Level has been added to the Pedigree sheet • Changed C to CTG11-1 overload protection" distractor, which is incorrect because Attachment 1 (pre-energization breaker alignment) of 23.300.SBO, does not contain steps for stripping DC loads. • Changed D to "cell reversal" distractor, which is incorrect due to the UV trip of the Static Inverter.
3	F	3												B	S	***NRC 2012 ILE*** NRC: • Question satisfactory. • E/APE # on the Pedigree sheet incorrectly references 295003; should be 295004. • K/A statement on the Pedigree sheet in correctly specifies A.C. POWER; should be D.C. POWER. • AK2.01 description on the Pedigree sheet incorrectly specifies "Station batteries." The AK2.01 description should specify "Battery charger." • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Question Cognitive Level has been added to the Pedigree sheet • K/A statements/linking have been corrected.
4	H	3												N	~~E~~ S	***NRC Early Review Question*** NRC: • Did the unit trip or is it at power in the stem conditions? (i.e., "Main Turbine Trip and the plant is stable". • The second sentence in the explanation for Distractor (2) states *"This prevents tripping the unit due to the inadvertent opening of disconnects CI-A or CI-B when the generator is online."* Is this power level dependent? Also, the statement is difficult to interpret without having an electrical distribution diagram with which to reference. Clarification needed. • Editorial: Insert a space between Parts (1) and (2) of the answer choices. • Editorial: From a readability standpoint, recommend inserting commas and quotes in the stem statement as indicated below, to more clearly distinguish the procedure number from the procedure title:

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																After a Main Turbine Trip and the plant is stable, 20.109.01, "TURBINE/GENERATOR TRIP," directs the following: • Editorial: From a readability standpoint, recommend setting apart the four action items in the stem with either bullets or dash punctuation marks to more clearly denote/distinguish these items. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Item (1) Unit trip not applicable, actions are required per AOP 20.109.01, unit tripped or not tripped when the plant is stable, as stated in the AOP and stem of the question. • Item (2) There is no unit trip directly connected to CI-A or CI-B, however if they were opened underload, the main generator would trip. This generator trip, can cause a reactor scram, depending on conditions. The purpose of the actions listed in the stem are to allow the 345K mat to be aligned normally with the generator offline, regardless of the status of the unit. • Item (3) Spaces inserted • Item (4) comma and quote added • Item (5) The four action items in the stem now have bullets • Question Cognitive Level has been added to the Pedigree sheet
5	H	3		X										~~N~~ B	~~E~~ S	***NRC Early Review Question*** NRC: • The "PILOT SCRAM VALVE SOLENOIDS" label on lower portion of the graphic has the potential to inadvertently cue the applicant, given that correct Answer B is the only option that contains the words "Scram Solenoids." Recommend revising the graphic to exclude this label, and re-phrase the Question Statement to read something similar to the following: ***"Based on the above indications from panel XXXXX, …"*** • Editorial: From a readability standpoint, recommend inserting commas and quotes in the stem statement, similar to the example provided in Question #1 (RO4) above, to more clearly distinguish the procedure number from the procedure title. • Confirm that the "Alternate Control Rod Insertion Methods" flowchart from 29.ESP.03, is not to be provided as a reference to the applicants. If provided, would make the question a direct lookup. **Fermi Response**: • Item (1) Updated as directed • Item (2) Updated as directed

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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	Back-ward	Q= K/A	SRO Only			
																• Item (3) 29.ESP.03 is not currently provided as reference. **Fermi Updated Response**: • Question re-written due to validation. Validators were concerned that (1) question did not match K/A statement and (2) knowledge necessary to answer question is not required to be known from memory (minutia) and would not be performed without the procedure (flowchart) in hand. • Question written from bank item obtained from NRC website (2017 Cooper exam). **Changes made due to 3/26/19 conference call discussion.** • Chief Examiner accepts new version of question written for this K/A with no comments/changes necessary. **NRC Supplemental Comment**: ***NRC 2017 Cooper ILE*** • Bank replacement question determined to be satisfactory by the Chief Examiner. • Bank source, i.e., 2017 Cooper Exam, not provided on the Pedigree sheet. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Updated Response**: • Question Cognitive Level has been added to the Pedigree sheet. • Bank source, i.e., 2017 Cooper Exam, added to the Pedigree sheet. This had to be added to the Answer Explanation section.
6	F	3												N	S	
7	H	3												B	~~E~~ S	***NRC 2015 ILE*** NRC: • Status has been provided for GSW Pumps 2, 3, 4, 5, and 6. Does Fermi have a #1 GSW Pump that could factor into the question? • Recommend providing the status of P4100-F840, "GSW Flow Test Pressure Ctrl Vlv," in the stem to enhance the plausibility of Distractor B. • Distractor C Explanation states ***"… since GSW header pressure is below 65# …"*** Stem specifies that GSW header pressure is steady at 70 psig. Revise Distractor C Explanation to reconcile this inconsistency. Suspect that the plausibility statement intended to convey that an applicant could assume that GSW header was below the pressure necessitating a plant and Main Turbine Trip. • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • GSW Pump #1 does not exist at Fermi 2 (was never installed). • Added status of P4100-F840 as closed. • Revised explanation for Distractor C to correct inconsistency with stem. • Changed to High Cognitive Level.
8	H	3												B	S	***NRC 2015 ILE***
9	F	2												B	S	
10	F	2				X								B	~~E~~ S	***NRC 2009 ILE*** NRC: • Questioning the plausibility of Distractor D. Why would an applicant believe that a Control Center Makeup Air Radiation Monitor would actuate SBGT, given that an irradiated Fuel Assembly has been dropped in the Reactor Cavity, and the remaining options include monitoring systems designed to detect radiation within the Reactor Building and Fuel Pool air spaces? • Question source (i.e., B/M/N) not specified on the Pedigree sheet. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Source and cog level have been added to pedigree. • Distractor D plausibility updated to: The ability of the CREF System to maintain the habitability of the MCR is explicitly assumed for certain accidents as an irradiated Fuel Assembly has been dropped in the Reactor Cavity. The instrumentation that ensures this Function is Reactor Vessel Water Level — Low Low, Level 2, Drywell Pressure — High, Fuel Pool Ventilation Exhaust Radiation — High, Control Center Normal Makeup Air Radiation–High. Because of this relationship 3D41, CONT CENTER MAKEUP AIR RADN MONITOR UPSCALE, is a plausible alarm during a dropped Fuel Assembly. The SGTS and CCHVAC share related purpose and share the following common set-points for automatic action: ▪ Low Reactor water level (Level 2). ▪ High Drywell pressure. ▪ High Reactor Building Ventilation Exhaust Radiation (Div I or Div II).

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																Due to this close relationship to SBGT a candidate could incorrectly assume that a Control Center Normal Makeup Air Radiation–High would start SBGT and CREF.
11	H	2										X		N	~~E~~ S	NRC: • Stem condition states that RPV Level is being maintained 50-100 inches. Suggest modifying this level band to a range that is something less than 50-100 inches, such as 0-50 inches for example (i.e., would not affect the answer as level would remain at or above L0), if supported by the Fermi AWTS EOP, to enhance the Discrimination Validity of this question as it pertains to the CONTM SPRAY 2/3 CORE HEIGHT OVERRIDE portion. • Enhance the Answer and Plausibility Explanations to include discussions that provide insight into (a) the functions of the individual switch positions, and (b) plausibility of the different combinations. **Fermi Response**: • The original validated version had a level band of 0-50". Several validators stated that this caused both A and B to be correct since operators will routinely ask permission to operate the 2/3 core height override when controlling level near TAF to prevent an actuation if level dropped below TAF. Therefore, level band cannot be changed to 0-50". • Enhanced the Answer and Plausibility Explanations as directed. **Fermi Update:** • CE agreed with leaving 50-100" level band after phone explanation on 5/9/19.
12	H	2												N	~~E~~ S	NRC: • Part 1 of Distractor C is awkwardly written (i.e., ***"cannot currently continue to be"***). Suggest replacing Part 1 of Distractor C with the same wording used in Part 1 of Distractor D, to enhance the readability of Distractor C. • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • Distractor C updated as recommended. • Pedigree sheet updated to LOK as H.
13	H	3				X								N	~~E~~ S	NRC: • Distractor A appears to be implausible given the following statement from the associated Distractor Explanation, which reads:

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																"This is the correct answer if Point 6 were NOT considered inoperable and an average of the 8 points, as indicated, was used to determine Average Torus Water Temperature." The stem specifically states that "Point T23N006 has been declared INOPERABLE." Why would an applicant consider Point 6 to be operable and available for use in the averaging calculation if information to the contrary is contained in the stem. • Pedigree sheet "Reference Information" section lists 29.ESP.01, "Supplemental Information," Section 15.0, "Torus Water Average Temperature Calculation." Provide confirmation that this question is "closed reference." • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • LOK changed to HCL. • This version of this question is closed reference because it only requires substitution of the inoperable instrument point to calculate the average. Different versions of this question, in the Fermi 2 exam bank, also include SRV openings, within the previous 48 hours, that require additional substitutions/additions. Those versions of this question would NOT be considered closed reference; however, this version is. An objective requires students to know this calculation. • Distractor A changed to include the value that would be calculated if only the 7 remaining operable points were averaged.
14	H	2												N	~~E~~ S	***Reference provided: 29.100.01, Sheet 6, "Curves, Cautions, and Tables" (without the Cautions)*** NRC: • Replace Distractor A with the value of 2.68 identified on the low end of the DWSIL curve to increase the Discrimination Validity of this distractor. • Pedigree sheet identifies "Question Use" as closed reference, which is incorrect. EOP 29.100.01, Sheet 6 (minus the Notes & Cautions), to be provided to the applicants as part of a handout package at the beginning of the exam to be used as a reference for certain questions. Revise the Pedigree sheet "Question Use" section to reflect the use of open reference material. **Fermi Response**: • Distractor A replaced with 2.68 psig on recommendation of Chief Examiner. • Changed question use to "open reference"

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																○
15	F	2				X								N	~~U~~ S	NRC: • Distractor Explanation is confusing in that it appears to support a Part 1 answer of "**Remains the same**," rather than "**Increases**." • Distractors A and B appear to be implausible. Why would an applicant believe that the number of instruments for monitoring Torus Water Temperature would increase as level is lowering? Note that a "Remains the same" Part 1 answer would not be a viable alternative in this question because this would provide an option that envelopes / includes another option (e.g., if the number of instruments remained the same at -16", then there would had to have been the same number of instruments at -11". • Pedigree sheet lists Question Cognitive Level as "High." Question is Low Cog as written (memory recall) and has been recoded as "F" in the "LOK" Column. **Fermi Response**: • Question partially re-written to test same concept, but with slightly different approach. Revised question addresses implausibility of Distractors A and B. • Cog level changed to Low.
16	F	2												B	~~E~~ S	***NRC 2015 ILE*** NRC: • While the question is satisfactory, both the Answer and Distractor Explanations are deficient. The Answer Explanation discusses MSCRWL (-25 in) but is silent with respect to what actually constitutes ACC and the availability of injection sources. The Distractor Explanation discusses MZIRWL which assumes no injection sources, yet it describes ACC with respect to Core Spray requirements and restoring / maintaining level above the elevation of the jet pump suctions (-48 in). Answer and Distractor Explanations warrant enhancements. **Fermi Response**: • Question, answer and distractor explanations revised for clarification.
17	F	2					X							B	~~E~~ S	NRC: • Plausibility of Distractor D is questionable. The condition described therein is unclear. What does ***"95 control rods at position 02 or fully inserted"*** actually mean? Are the other 90 control rods at some unknown position beyond 02 or are they fully inserted? If an applicant were to assume that (a) the other 90 rods are fully inserted, and (b) the 95 rods are also fully inserted, then all 185 control rods would be fully inserted and there would be two correct answers**:** A and D. An applicant can make these unstated assumptions because they are not contradicted within the question as written.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																Fermi Response: • Distractor D changed to read "Hot Shutdown Boron weight has been injected with five control rods at position 48," and Distractor C changed to read "Cold Shutdown Boron weight has been injected with ten control rods at position 48," to enhance the plausibility.
18	H	3												B	S	***NRC 2012 ILE***
19	F	2												B	S	***NRC 2015 ILE*** NRC: • Stem is awkwardly written. From a readability standpoint, suggest bulletizing the stem conditions rather than having a continuous run-on statement. **Fermi Response**: • Stem bulleted for readability.
20	F	2				X								B	~~U~~ S	NRC: • As written, Part 2 of Distractors A and D do not appear to be plausible. Both distractors state *"The reactor SCRAM mitigates the reduction in LHGR."* Why would it be desirable to mitigate a "reduction" in LHGR? • Suggest enhancing Part 1 of Distractors A and B to read as follows: *"The Turbine Protection system provides input via four voter channels to the RPS trip system."* • Answer Explanation is deficient. Why does the explanation include a Basis discussion associated with Feedwater and Main Turbine High Water Level Trip Instrumentation? Separately, the Basis discussion associated with the Turbine Stop Valve Closure Scram is silent with regard to mitigating the reduction in MCPR. Answer Explanation warrants revision. • The "RO Question Basis" discussion is awkwardly written and difficult to follow. Justification for why the question is written at the RO level appears to be predicated upon SRO criteria (i.e., knowledge of TS Bases). "RO Question Basis" discussion warrants revision. **Fermi Response**: • Part 2 of Distractors A and B were written to keep the wording "The reactor SCRAM mitigates the reduction in …" consistent between the correct answer and the distractor. The plausibility is because LHGR is a thermal limit. Part 2 of the answer and distractors has been changed to read "The reactor SCRAM mitigates the impact on …" • Wording of Part 1 changed to "four voter channels" as recommended.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Revised the Answer Explanation to explain why the Feedwater and Main Turbine High Water Level is sited in the Answer Explanation and also to address the fact that the Turbine Stop Valve (TSV) Closure Scram mitigates the reduction in MCPR resulting from the Turbine Trip. • RO Question Basis rewritten: This question is based on understanding system design. The answer explanation references TS bases, because of the TS bases is a reliable source of technical information written in a simple format, the Design Basis document is cryptic and difficult to follow. And an additional source of technical information is the lesson plan. However, it is undesirable to provide quotes from a lesson plan as a technical base for a question on an NRC exam. This information is in ST-OP-315-0028-001 TURBINE SUPERVISORY EQUIPMENT AND PROTECTION and is supported by training objectives in the same document.
21	H	2				X								N	~~E~~ S	NRC: • Distractor B does not appear to be plausible. Why would an applicant start a Mechanical Vacuum Pump after placing additional SJAEs in service (as noted in the stem) with no appreciable effect, at a power level of 25%? Suggest lowering the power level to 15%, replacing Distractor B with ***"Place additional SJAEs in service"*** and rewording the stem to state ***"Which one of the following identifies the required operator action?"*** **Fermi Response**: • Cannot revise Distractor B as suggested because this would result in two correct answers. • Removed "place additional SJAEs in service" from the stem and lowered the power level from 25% to 15% to increase plausibility of Distractor B. By revising the stem in this way, it is plausible, at the reduced power level, that an examinee could determine that starting a MVP is the correct action. • During review, also changed stem 'condenser vacuum lowering' to 'degrading' to enhance readability and maintain consistency with wording in the AOP.
22	H	2	X											N	~~E~~ S	NRC: • Stem focus issue. The following line from the stem is only applicable to the Part 1 Question: ***"If no operator action is taken,"*** • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**:

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Corrected stem focus issue by moving "if no operator action is taken" to part (1) of the question. • Changed LOK to High.
23	H	3				X								N	~~E~~ S	NRC: • Distractor B does not appear to be plausible. Why would an applicant believe that there was a complete Loss of the RBCCW System with only one point in alarm. • Suggest deleting the word **"only"** at the end of the first bulletized statement in the stem to enhance the discrimination validity of the question (increases the plausibility of Distractor A). • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Several points added to show a broader Drywell Temperature problem. • Cog level updated.
24	F	2												B	S	NRC: • Explanations for Distractors B and C are reversed on the Pedigree sheet. **Fermi Response**: • Explanations for Distractors B and C have been corrected on the pedigree sheet.
25	H	4												B	S	
26	H	2												N	S	***Reference provided*: 29.100.01, Sheet 6, "Curves, Cautions, and Tables" (without the Cautions)** NRC: • Pedigree sheet identifies "Question Use" as closed reference, which is incorrect. EOP 29.100.01, Sheet 6 (minus the Notes & Cautions), to be provided to the applicants as part of a handout package at the beginning of the exam to be used as a reference for certain questions. Revise the Pedigree sheet "Question Use" section to reflect the use of open reference material. • Question Cognitive Level has not been provided on the Pedigree sheet. **Fermi Response**: • Pedigree sheet corrected to identify as Open Reference. • Cognitive Level added.
27	H	2												B	S	NRC:

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Spell out the word **"Sheet,"** in Part 2 of Distractors A and D. **Fermi Response**: • Sheet 5 spelled out in Distractors A and D.
28	H	3												M	S	**Embedded Graphic *Attachment*** NRC: • The explanation for Distractor C states, in part: ***The candidate could incorrectly assume that the selected loop (Loop A) injection valves (F017A & F015A) receive an open signal (as indicated by the open light lit) at the time of selection, instead of when RPV pressure drops <461 psig. This assumption is incorrect as described above."*** It would appear that an applicant **could also correctly assume** that injection valves (F017A & F015A) receive an open signal when RPV pressure drops <461 psig (as indicated by the open light), which would contradict the above statement from Distractor C that implies otherwise (i.e., ***"instead of when RPV pressure drops <461 psig"***). There is no way to make this distinction given the conditions in the stem. The result (i.e., open light lit) is the same, regardless of whether the assumption is correct or incorrect**. Distractor explanation warrants enhancement.** **Fermi Response**: • The portion of Distractor C explanation cited above was included as a copy/paste error from a previous version of this question. The statement above has been removed from Distractor C explanation. • Distractor D explanation has also been enhanced.
29	H	3												N	~~E~~ S	NRC: • Identify the procedure in the Part 1 Question Statement. • Reformat the Part 2 Question Statement as follows to maintain consistency with the format utilized in the Part 1 Question Statement: **"Once the pump has been started and flow established:** **(2) What should you immediately verify and why?**" **Fermi Response**: • Added procedure title to Part 1 question statement. • Reformatted part 2, as recommended above, to be consistent with part 1.

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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	Back-ward	Q= K/A	SRO Only			
30	F	3												B	S	
31	F	4												N	S	
32	F	3												B	S	
33	H	3												N	~~E~~ S	NRC: • In Part 2 of the Question Statement, make the word **"actions"** singular and insert the word **"the"** before **"action,"** so that the stem is grammatically correct. **Fermi Response**: • Recommended changes made to made to stem.
34	H	3												M	S	NRC: • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • LOK changed to High.
35	H	3												B	S	***NRC 2015 ILE***
36	H	3												B	S	NRC: • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • LOK changed to High.
37	H	3		X										B	~~E~~ S	NRC: • Specify a procedure in Distractors C and D, similar to what was done in Options A and B, to preclude the possibility of inadvertently cueing the applicant. The Part 2 Question Statement reads ***"What procedure actions are necessary..."*** Procedure options have only been included in correct Answer B and Distractor A. • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • Procedure specified in Distractors C and D. • LOK changed to High.
38	H	3		X										N	~~E~~ S	NRC: • Second sentence in the stem states *"Its Mode Switch is in INOP to allow for troubleshooting."* From a readability standpoint, suggest revising this statement to read "*Its Mode Switch is in the INOP position to support troubleshooting."* ***Separately, is it possible to specify a Mode Switch position other than INOP for APRM #4, to preclude the possibility of inadvertently cueing the applicant, given that only correct Answer B and Distractor D contain "APRM INOP."*** • Pedigree sheet lists Question Cognitive Level as "Low." Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as "H" in the "LOK" Column. **Fermi Response**: • Stem changed as recommended to enhance readability. • Unfortunately, the switch only has 2 positions (INOP and OPER). This was researched when writing the question to allow another position to be used in the question statement itself. Since no other position exists, the question uses the phrase "out of OPER" which is consistent with plant references. • Option: The stem could be changed for APRM #4 to state that it is "out of OPER" to allow for troubleshooting if desired. • LOK changed to High. **Fermi Update:** • CE agreed with the recommended option to change the stem wording associated with APRM #4 to read "out of the OPER position" on 5/9/19. Stem revised accordingly.
39	H	3												N	S	**Embedded Graphic *Attachment*** NRC: • The grey shading for the "OPRM ENABLE" and "APRM SIMULATED THERMAL POWER UPSCALE TRIP alarms on the H11-P603 panel graphic in

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																the question stem make it somewhat challenging to discern if these alarms have been received. The "OPRM ENABLE" alarm for example, can be easily missed, given its location at the bottom of the graphic and the fact that the associated "X" marks denoting alarm receipt are the same color as alarm window. Enhance the H11-P603 panel graphic to make the alarming annunciator windows more discernable. **Fermi Response**: • The exam will be printed in color for implementation. Questions with graphics will be printed on white paper with a colored border. When printed in color, OPRM Enable will be blue, APRM Simulated Thermal Power Upscale Trip will be red, etc. This will make the alarm windows discernable.
40	H	3												N	S	
41	H	3												N	~~E~~ S	***NRC Early Review Question*** NRC: • Editorial: Insert a space above the first Question Statement to separate it from the stem conditions. • Editorial: The second Question Statement in the stem should read: *"… all procedural requirements **have been** met …"* • For clarity, label the two Questions Statements as (1) and (2) in the stem, and use the same convention for each of the answer choices, rather than separating the 2-part answers with a semi-colon. **Fermi Response**: • Space inserted. • Added the words "***have been"***. • Changed to two part (1) and (2) question and answer convention.
42	H	2												M	S	
43	H	3												N	S	**Embedded Graphic *Attachment*** ***NRC Early Review Question*** NRC: • The answer explanation specifies only the F016 and F019 valves. Distractors B, C, and D all specify "Drains." Should the Distractors specify "Drains" or "Drain Valve"? **Fermi Response**:

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Changed Distractor A to specify "drain valves," and the remaining answer options to specify "Drain Valve" to be more correct and consistent.
44	F	3												B	S	***NRC 2015 ILE***
45	F	2												N	S	NRC: • Use of the word "realign" in Distractor B implies that the response of the RFP Discharge Isolation Valves on a scram is automatic. Do the RFP Discharge Isolation Valves automatically realign / reposition on a scram condition at Fermi? If valve response is not automatic, then suggest revising Distractor B to read as follows to enhance the Discrimination Validity: ***"The RFP Discharge Isolation Valves may not respond following a scram, causing the RPV to overfill."*** Additional information required. **Fermi Response**: • Fermi 2 has a feature known as 'post-scram feedwater logic' that, among other things, causes the RFP Discharge Isolation Valves to automatically close after a scram to prevent overfilling the RPV.
46	F	~~1~~ 2				X								N	~~U~~ S	NRC: • LOD=1. Distractors A and B can be easily eliminated and are implausible, considering minimal knowledge of the Standby Gas Treatment System (SGTS) and automatic system response to DBA LOCA. Applicants have trained extensively on LOCAs during their time in the simulator leading up to the Audit and NRC License Exams. Why would an applicant believe that SGTS would be taking suction from the Primary Containment when (a) PCIS will isolate SGTS suctions from the Primary Containment during a DBA LOCA, and (b) the system is designed to maintain a Secondary Containment pressure of -0.25 INWC? **Fermi Response**: • Stem conditions and Distractors A and B revised to raise the LOD from 1 to 2.
47	H	3												B	S	***NRC 2008 ILE***
48	~~F~~ H	~~1~~ 3												N	~~E~~ S	***Embedded Graphic Attachment*** ***NRC Early Review Question*** NRC:

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• LOD=1 as written. Can the Discrimination Validity of this question be raised (without the use of additional graphics to identify the controls) by also testing the applicants on the means by which speed/voltage are actually controlled/adjusted when paralleling AC Voltage sources? **Fermi Response**: • Question changed to include the means by which speed/voltage are adjusted based on NRC input. **Changes made based on 3/26/19 conference call discussion with CE.** • Changed from Low to High Cognitive level.
49	F	3												~~M~~ B	~~E~~ S	***NRC 2012 ILE*** NRC: • Appears that the stem should specify the Loss of UPS B instead of UPS A, which would make A the correct answer instead of B. The loss of C32-R603B and C32-R603D in Answer A will directly impact Feedwater Level Control (FW DCS) because these instruments are utilized when in 3-Element Control. **Fermi Response**: • Changed the question as indicated.
50	H	3												B	S	NRC: • Pedigree sheet lists Question Cognitive Level as “Low.” Question is HCL as written (requires multiple mental processing steps, i.e., recall of information and integration of two or more pieces of data) and has been recoded as “H” in the “LOK” Column. **Fermi Response**: • Changed to LOK = High.
51	H	3				X								N	~~E~~ S	NRC: • Distractor D does not appear to be plausible. Why would an applicant believe that the system is designed to intentionally overload the EDG to the point of underfrequency trip, in order to initiate a load shed and reclosure of its output breaker? **Fermi Response**: • Plausible because this is how the EDGs respond to a Loss of Power (LOP) if the EDG is already running in parallel with offsite power, such as for

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																surveillance testing. With an EDG Output Breaker closed, bus under-voltage relaying is bypassed (to prevent spurious under voltage relaying trips and thus load shed) and a bus under-frequency relay is enabled. If an EDG is running in parallel with offsite power and a LOP occurs, the EDG will respond by attempting to pick up all loads, which will result in an under-frequency trip of the EDG output breaker (NOT the EDG itself), which will then enable the under-voltage relaying that will in turn sense the bus under-voltage condition, thereby initiating a load-shed, that will then prepare the bus for subsequent re-closing of the EDG output breaker. This distractor was written with this sequence in mind, thereby making it plausible that the applicant would assume the EDG will respond similarly to the events given in the stem of the question. • Information from the above explanation has been added to the Distractor explanation for D to better describe how this sequence is plausible. **Fermi Update**: • Added the word "Selected" to Distractor D at the suggestion of the CE to enhance the Discrimination Validity **(5/9/2019)**.
52	H	3												B	S	***NRC 2015 ILE***
53	F	2												N	S	
54	F	2												B	S	
55	H	2												N	S	
56	H	3												B	S	***NRC 2015 ILE***
57	H	3												N	~~E~~ S	***Embedded Graphic Attachment*** NRC: • Editorial: Suggest revising the Question Statement to read ***"… what will torus water level ultimately indicate as displayed on G51-R402, …"*** instead of saying ***"…where will torus water level ultimately end up as indicated on the G51-R402, …"*** • Suggest enhancing the graphic to make the indicator ribbon more discernible from the black border to which it adjacent. **Fermi Response**: • Question statement revised as recommended. • When printed in color, as the exam will be, the indicator ribbon is blue, which will make it more discernable from the black border of the indicator.
58	H	3												N	~~E~~ S	NRC: • Include the word **"ONLY"** after answer options A, B, and C.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																Fermi Response: • A, B and C revised to include the word ONLY.
59	F	3												B	S	
60	H	3												N	S	:
61	F	3		X		X								N	~~E~~ S	NRC: • Bulleted stem conditions specify that the #5 and #6 LPIVs both serve the North LP Turbine. Answer Explanation states that the applicant must recognize that the hydraulically operated turbine valves given in the stem of the question both serve the North LP Turbine. The applicants are not required to make this determination because the information has already been provided upfront in the stem. Accordingly, need to remove both references to "North LP Turbine" in the stem to maintain the intended level of Discrimination Validity. • Distractor D does not appear to be plausible. LP Intercept Valves are either full-open or full closed, correct? Applicants have trained extensively during their time in the simulator leading up to the Audit and NRC License Exams. Why would an applicant believe that the LPIVs would be at any position other than full-open or full-closed? • Is the 95% power level Operationally Valid? Would the plant be expected to remain at 95% power following the inadvertent closure of two LPIVs to the same LP Turbine? **Fermi Response**: • The original (validated) version of this question did require the examinee to have memorized what LPIVs serve which LP Turbines. During validation review, this question was revised to not require that knowledge as it was considered 'minutia' by the validating crew since the information regarding which valves supply what turbines is on the panel mimic. When the question was revised, information from the explanation was not revised accordingly. This has been corrected. This question still meets the K/A because it requires the examinee to know the action to take if (operational implication of) two LPIVs serving the same LP turbine go closed. o Note: Stem of the question was changed to reference South LP Turbine since the stem was originally incorrect. • Fermi 2 has LP Intercept (LPIV) and LP Stop (LPSV) valves. LPIVs have position indicators that go between 0% and 100% open. LPSVs are only open/closed. LPIV position varies with power level. • Power levels changed in stem. Initial power is now 92% and final power (after valve closure) is 93% to maintain operational validity. This event was run on the plant referenced simulator to obtain these values by slow-closing the two LPIVs.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
62	H	3				X								N	~~E~~ S	***Embedded Graphic Attachment*** NRC: • Distractor C plausibility does not appear to be supported by the associated Distractor C explanation. The explanation, as written, supports a plausibility argument for why RCIC would be injecting, and **not** the failure of RCIC to auto initiate. Therefore, the plausibility of Distractor C is questionable. • The last sentence in Distractor A states that ***"RCIC injects upstream of the D/P cell that drives the C32-R604B."*** RCIC injection upstream of this D/P cell contradicts every other explanation provided on the Pedigree sheet (i.e., that RCIC injects downstream of the aforementioned flow indicator). **Fermi Response**: • Completely re-wrote explanation for Distractor C. • Corrected typo in last sentence of Distractor A explanation to state "downstream".
63	H	3										X		N	~~U~~ S	NRC: • Appears to be a K/A mismatch. How does a trip of the Gland Seal Exhauster (GSE) qualify as an Offgas System Isolation? Fermi Response: • For plants, such as Fermi 2, that do not have isolations associated with the Offgas system, this question meets the intent of the K/A. At Fermi 2, the Radiation Monitoring System (System number 272000) does not cause Offgas to isolate, but rather it causes pumps (Mechanical Vacuum Pump and/or Gland Seal Exhauster (GSE)) to trip, thereby effectively isolating input into the system since the pump(s) is/are needed to overcome system D/P and drive flow into and through Offgas. The GSE trip is replacing the Main Steam Line High Radiation trip of the MSIVs at most BWRs as part of the Scram Frequency Reduction effort, which may explain its absence from K/A catalog. Although absent from the K/A catalog, the GSE trip is safety significant as, per Tech Spec Bases for 3.3.7.3, GSE Trip Instrumentation, "The GSE trip instrumentation is assumed in the safety analysis for the CRDA. The GSE Trip Instrumentation initiates a trip of the GSEs to limit offsite and control room doses resulting from fuel cladding failure in a CRDA." In summary, since there are no K/A statements associated with the Radiation Monitoring System's impact on Offgas System trips, the Fermi 2 exam team believes this question meets the intent of the K/A as allowed by NUREG-1021 Appendix B, Paragraph C.1.b. **Fermi Update:**

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• New version of Question 63 written after Chief Examiner (CE) randomly re-selected K/A Statement A3.10, "Lights and alarms" (Radiation Monitoring System; 272000) during OV Week (5/13/2019). **NRC Supplemental Comment**: • New Q63 determined to be acceptable by Chief Examiner.
64	H	2												N	S	
65	H	3												N	~~E~~ S	NRC: • Use of the word "ONLY," which precedes each of the answer options, should be limited to Distractor A. Accordingly, remove "ONLY" from Answers B, C, and D, and revise Distractor A to read "1D66 ONLY." **Fermi Response**: • Question revised as recommended above.
66	F	2												M	S	
67	F	2												N	~~E~~ S	***NRC Early Review Question*** NRC: • Per ES-401, Paragraph D.2.a (last sentence), questions selected for Tier 3 are to maintain their focus on the plant-wide generic K/As, and are not to become an extension of Tier 2 Plant systems. System-specific knowledge of the Feedwater Level Control System is required to answer this question correctly, making it an extension of Tier 2, and not focused on generic plant-wide topics. **Fermi Response**: • New question written at the generic level. **NRC Supplemental Comment**: • New question determined to meet Tier 3 criteria by the Chief Examiner.
68	F	2												N	~~E~~ S	NRC: • Revise Distractor B to read **"ANY movement of fuel ONLY."** • Revise Distractor C to read **"Core Alterations ONLY."** **Fermi Response**: • Revised Distractor B and C as recommended above. • Due to these revisions, changing distractor length necessitated swapping Distractors B and C.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
69	F	2		X										N	~~E~~ S	NRC: • The words ***"restore HPCI system OPERABILITY"*** in second sentence of the stem, can inadvertently cue the applicant to the correct answer given that the Shift Manager is the only position listed amongst the available options that is qualified to make an Operability Determination. Suggest revising this sentence to read as follows in order to preclude the potential for cueing: ***"The Post Maintenance Test (PMT) is being reviewed for adequacy."*** • From a readability standpoint, the first sentence of the stem should state ***"… to correct a system INOPERABILITY issue"*** instead of ***"… to correct a system INOPERABILITY."*** • Suggest revising the Question Statement as follows to more appropriately phrase the question: ***"Who is responsible for reviewing the PMT to determine if requirements for performing the test are supported by present plant conditions?"*** **Fermi Response**: • First sentence revised to add "issue" as recommended. • Statement revised to remove possible cueing as recommended. • Question statement revised as recommended.
70	F	3												B	S	
71	F	3												B	S	***NRC 2013 ILE***
72	F	2		X										M	~~E~~ S	***Reference provided: EP-201-3 ~~(Partial; Page 6)~~, "Emergency Extensions Exceeding Federal Occupational Dose Limits"*** NRC: • List of Handouts only includes Page 6 of Reference EP-201-3. Page 6 includes Table 2 which needs to be correctly referenced to determine the allowable Emergency Dose Limit to facilitate performance of the Stay Time calculation. Table 1, upon which Distractors A and C are predicated, is not part of the handout information. Provide the entire 8-page reference document to preclude the potential for inadvertently cuing the applicants and to raise the overall Discrimination Validity of the question. • Remove ***"(Whole Body)"*** from the stem statement. Applicants should know that TEDE is Whole Body exposure and can determine this from the reference provided. • Pedigree sheet identifies this question as "closed reference," which is incorrect. **Fermi Response**:

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Entire 8-page copy of EP-201-3 has been added to Handout folder for exam and will be printed for each candidate. • "Whole Body" has been removed from stem. • Question coded as Open Reference.
73	F	~~1~~ 2												~~M~~ B	~~U~~ S	***NRC 2013 ILE*** NRC: • LOD=1. Low Discrimination Validity. Two of the distractors can be easily eliminated without any knowledge of the EOPs, simply by knowing the general Logic convention for 1 of the 4 symbols, i.e., that the Hexagon / Stop Sign figure is "Hold Step." **Fermi Response**: • The attempt at modifying this question inadvertently made it such that the correct answer could be deduced too easily as described above. Therefore, the question has been removed and replaced with its original Bank version. This version was used on the ILT 2013 exam. This makes 32 Bank questions on this exam, which is well within the NUREG-1021 limit of 56 Bank questions.
74	H	3												M	S	***Reference provided: ARP 3D19, "Annunciator System Trouble"*** NRC: • Pedigree sheet identifies this question as "closed reference," which is incorrect. **Fermi Response**: • Changed to open reference.
75	F	2												N	S	
76	H	3												B	S	
77	F	3												N	~~E~~ S	NRC: • The explanation for Distractor B appears to support the operability of two RHR Shutdown Cooling Subsystems, rather than one, based on TS Bases B 3.4.8. Clarification required. • The explanation for Distractor C appears to support the operability of only one RHR Shutdown Cooling Subsystem, rather than two, based on TS Bases B 3.4.8. Clarification required. • The explanation for Distractor D does not appear to support the operability of any RHR Shutdown Cooling Subsystem and is difficult to follow. Clarification required.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																Fermi Response: • Updated the explanations for Distractors B, C and D to provide the necessary clarification.
78	H	3				X	X							N	~~U~~ S	***Reference provided: EP-101, "Classification of Emergencies," Enclosure A, Pages 1 through 3*** NRC: • Questioning the overall plausibility of this question as written. It appears plausible that a rise in area radiation levels on one or more of the RB5 ARMs listed under **RU2.1** of EP-101, "Classification of Emergencies," Enclosure A, would directly result from any one of the three Distractor Events with times 0800, 0810, and 0840? An applicant could reasonably make an unstated assumption that is not contradicted by the stem with respect to RB5 ARM radiation levels, resulting in a correct answer other than what has been specified. Accordingly, an applicant could make a tenable post-exam argument that there are multiple correct answers. Separately, if the stem were to include information regarding a rise in RB5 ARM radiation levels, then the correct answer would change. • The event at time 0800 should read ***"Report from the Refuel Floor that Spent Fuel Pool Level is lowering"*** in order to avoid any potential ambiguity with respect to the "Visual observation" bullet under RU2.1. **Fermi Response**: • Fermi does not agree that this question should be classified as Unsat because SROs are routinely cautioned, during ERO drills, and trained to not infer anything, beyond the conditions given, when making Emergency Classifications. Doing so on an exam can lead to getting a question wrong while doing so during a plant event could lead to a missed/incorrect classification, which may be a reportable event. However, to address the concerns raised above, Enhancements were made as follows: o Stem changed by adding that the ARMs listed under RU2.1 remained unchanged during the event to remove possibility of applicant making an unstated assumption. o 0800 time reading changed as recommended to include report from Refuel Floor. **NRC Supplemental Comment**: • Original and revised versions of the question were determined to be Unsatisfactory by the Chief Examiner (CE). Question was further revised during the OV week to include RB5 Spent Fuel Pool ARM (Ch.15) information in stem that resulted in one of the three distractors in the original question becoming the correct answer, along with a change in Event Classification from

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																EAL RA2.3 to RU2.1. This version of the question was determined to be Satisfactory by the CE.
79	~~F~~ H	2				X								N	~~U~~ S	NRC: • Distractors B and D are not credible. Why would an SRO applicant who has trained extensively for months in the simulator leading up to the Audit and NRC License Exams, believe that the correct action would be to either inject SLC or perform an Emergency Depressurization from 100% power, without first shutting down the reactor? **Fermi Response**: • Two new plausible distractors could not be written for original concept. New question written to test knowledge of the specific bases for EOPs. LOK is now H instead of F. **Fermi Update:** • Discussed EOP usage (transitions, etc.) with Chief Examiner (CE) during OV Week. Replacement question determined to be acceptable by the CE.
80	H	3												N	~~E~~ S	***NRC Early Review Question*** NRC: • Is there a difference between ***"Operate All available Drywell Cooling"*** in Part (2) of Answers A and C, and ***"Start any available Drywell Cooling Fan"*** in Part (2) of Answers B and D? Is "Operate" the same as "Start" within the context of this question? Clarification needed. • Editorial: Part (2) of the Question Statement should read *" … the action **you will** direct to mitigate the rising drywell temperature?"* • Are procedure numbers typically referenced without providing the titles? Appears to be some inconsistency amongst the Early Review Questions (ERQs) submitted. **Fermi Response**: • For the answers/distractors of this question, the terms were stated to be consistent with plant procedures. For example, 29.100.01, Sheet 2 – Drywell Temperature Control, Step DWT-3 states "Operate ALL available DW cooling (29.ESP.08)". Since this statement is what the examinees are used to, and what the CRS will direct, it was used on the question for consistency. In this instance, the direction from DTW-3 to "Operate all available DW cooling" means to install jumpers and re-establish cooling water flow to the DW. Then, DW fans would be started and stopped to control DW Temperature. This action is only required if cooling has been isolated to the DW. This is significantly different from the direction to start any available Drywell Cooling fan. Adding

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																noun names to the procedures (third bullet below) should alleviate any confusion. • Changed part (2) of question to sate "***you will***". • The verbiage used in the answers and distractors was chosen to be consistent with the step in the EOP flowchart. However, for clarification, the noun names of the procedures were added to the stem of the question.
81	H	2												B	~~E~~ S	***NRC 2010 ILE*** ***Reference provided: EP-101, "Classification of Emergencies," Enclosure A, Pages 1 through 3*** NRC: • Replace Part 1 of Distractor C to with Part 1 of Distractor D to raise the Discrimination Validity of Distractor C. An SRO applicant with minimal knowledge of the plant should be able to easily eliminate Distractor C knowing that dumping steam to the condenser with an offsite release in progress (as confirmed by dose assessment at the site boundary) is not a viable option with the Torus available. • Pedigree sheet identifies this question as "closed reference," which is incorrect. **Fermi Response**: • Part 1 of Distractor C changed as recommended. • Changed to Open Reference.
82	F	3												N	S	
83	H	2												N	~~E~~ S	NRC: • Question is borderline "SRO-only" as written. Suggest the following stem enhancements and revision to Distractor B to raise the Discrimination Validity of the question from an SRO perspective: 1. In the last bullet of the stem, provide a rate of rise for RPV level instead of simply stating that level is rising slowly, i.e., ***"RPV water level is 225" and rising at 0.8"/min."*** 2. Add a new statement immediately following this last bullet that reads ***"One minute later, RPV Flood Up Indication becomes unavailable."*** 3. Replace Distractor B with ***"Establish RWCU Blowdown to restore RPV water Level to a band directed by the SM."*** • Revise the answer and distractor explanations as appropriate to include discussions associated with (a) **CAUTION 1** on Page 6 of AOP 20.000.23, and (b) **CONDITION "I"** on Page 9 of AOP 20.000.23. **Fermi Response**: • Stem changed to add RPV level rate of rise.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• Stem changed to state One minute later, B21-R605, RPV Floodup Level Indicator, becomes unavailable, • Information from Caution 1 on Page 6 of the AOP was added to explanation for Distractor A to enhance plausibility explanation. • Changed Distractor B, as per above, to "Establish RWCU Blowdown to restore RPV Water Level to a band directed by the SM". Updated Distractor B explanation accordingly.
84	H	3												N	~~E~~ S	***NRC Early Review Question*** NRC: • Suggest changing MFLPD to a value of 1.0 to raise the Discrimination Validity of the question. **Fermi Response**: • Phone call with chief examiner resulted in reducing MFLPD ratio to a value of 1.0. • Validation resulted in addition MFLCPR thermal limit (previously missing) to be consistent with information normally available on 3D Monicore report. **Fermi Update**: • Validation team stated that information provided in stem, without MFLCPR ratio provided was unrealistic. • Chief examine expressed concern about this during a conference call on 3/26/19. Several possible solutions were discussed. • Chief Examiner and Fermi 2 agreed to attempt to re-write and discuss again on 3/27. • Distractors re-written with help from validators and facility rep on 3/26. **NRC Supplemental Comment**: • Revised version of the question determined to be satisfactory by the Chief Examiner.
85	H	2												N	S	***Reference provided: 29.100.01, Sheet 6, "Curves, Cautions, and Tables" (without the Cautions)*** NRC: • Pedigree sheet identifies "Question Use" as closed reference, which is incorrect. EOP 29.100.01, Sheet 6 (minus the Notes & Cautions), to be provided to the applicants as part of a handout package at the beginning of the exam to be used as a reference for certain questions. Revise the Pedigree sheet "Question Use" section to reflect the use of open reference material.

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																Fermi Response: • Pedigree changed to Open Reference.
86	H	3				X								N	~~E~~ S	NRC: • The combination of 30 minutes in Part 1 and 105°F in Part 2 of Distractor B, make the distractor implausible, given that 30 minutes corresponds to 95°F (i.e., only a 10°F temperature rise). *Temperature would not be restored from 95°F to 105°F*. Suggest using a value of 75 minutes (corresponds to 110°F) in Part 1 of Distractor B. **Fermi Response**: • Part (1) of Distractor B changed to 75 minutes as recommended above. Fermi 2 exam team agrees that this improves the plausibility of this distractor. **Fermi Update:** • Corrected Distractor B to match math needed to make 75 minutes in part (1) plausible.
87	H	3												N	S	
88	H	3												N	S	
89	H	2				X								N	~~E~~ S	NRC: • Distractor A is not plausible given the other answer options and can therefore be easily eliminated (e.g., manual SRV opening as part of a pre-planned maintenance activity versus a plant shutdown necessitated by unintended opening of an SRV). In addition, Distractor A does not qualify as an "event," relative to the associated K/A statement. **Fermi Response**: • Distractor A changed to failure of a LLS SRV to open during a transient. Distractor A explanation updated accordingly.
90	H	2	X			X								B	~~E~~ S	***NRC 2015 ILE*** ***Reference provided: TS LCOs 3.8.4, "DC Sources-Operating," and 3.8.5,"DC Sources-Shutdown"*** NRC: • Distractor B does not appear to be plausible. The Question Statement asks what are the MINIMUM Action(s) required by LCOs 3.8.4 and 3.8.5 to be in compliance with TS. There is nothing in the stem to indicate that the Battery Charger was in any way affected. The only information provided in the stem is that the DIV 1 Battery was severely damaged. Accordingly, why would an

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																applicant believe that any restoration of DIV 1 DC to operable status would be necessary relative to operability of the charger? • Explanations for Distractors C and D are deficient to the point that neither supports an evaluation of plausibility by the Chief Examiner. These explanations provide no insight into the plausibility of Distractors C and D relative to LCOs 3.8.4 or 3.8.5. • Why is LCO 3.8.5 included in the Question Statement and provided as a reference for this question? LCO 3.8.5 adds no apparent value. **Fermi Response**: • Added Division 1 Battery Chargers tripped to stem of question to make B plausible. Updated Distractor B explanation, which is now Distractor C. • Wrote new Distractor C, which is now B due to changing length of distractors. • Updated distractor D explanation. • LCO 3.8.5 removed from the stem of this question and from the list of handouts for the exam.
91	H	3												N	~~E~~ S	***NRC Early Review Question*** NRC: • Question source not provided. • Pedigree sheet is deficient (i.e., correct answer explanation is incomplete, distractor explanations have not been provided, and numerous other fields are missing information). • Question structure and phrasing contribute to low readability. • **Unable to evaluate this question due to insufficient information.** **Fermi Response**: • Wrong question version was submitted in error. Correct version has been added to exam. **Fermi Updated Response:** • Input from validation indicated that the question had multiple correct answers. • Question was re-written with help from validating SROs. • Question revised based on feedback received from the Chief Examiner during a conference call on 3/26/2019. • Changed from Low to High Cognitive level. **NRC Supplemental Comment**: • Re-written version of the question determined to be satisfactory by the Chief Examiner. • Pedigree sheet not updated with Question source information. **Fermi Supplemental Response:**

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6.	7.	8.
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• "NRC Question Use" field on Pedigree Sheet updated to indicate "New" for the Question Source.
92	H	3							X					N	~~E~~ S	***NRC Early Review Question*** NRC: • First part of the question can be answered using RO knowledge of systems, which is acceptable provided the second part of the question can only be answered using SRO knowledge. The second part of each answer contains "Minutia," i.e., the recall of knowledge which is too specific. Can specific Sections or Conditions within the applicable procedure (i.e., 20.708, "Loss of Fuel Pool Cooling & Cleanup AOP") be referenced to more appropriately test SRO applicant knowledge level on this topic without making it an RO level question? **Fermi Response**: • Made changes proposed by NRC to make answer/distractors more generically focused on the Conditions that would be ordered and not the specific actions. • Subsequent phone calls with Chief Examiner resulted in several changes and ultimately the decision to re-write the question. **Fermi Updated Response**: • Question part (2) was re-written to examine the TS required actions necessary to correct the impact of low SFP level during fuel movement. The correct answer requires knowledge of TS bases to answer the question, which is SRO-only. • Information in stem of question was pared down and bulleted at request of Chief Examiner. **NRC Supplemental Comment**: • Re-written version of the question determined to be satisfactory by the Chief Examiner.
93	~~F~~ H	~~2~~ 3										X		N	~~U~~ S	NRC: • K/A mismatch. The surveillance procedure activity upon which this question is based tests applicant knowledge of compliance with LCO 3.9.2, "Refuel Position One-Rod-Out Interlock." This question should instead be based upon the surveillance procedure activities that test applicant knowledge of compliance with LCO 3.9.1, "Refueling Equipment Interlocks." The Generic K/A is G2.2.12, "Knowledge of surveillance procedures," and the System Name is "Fuel Handling Equipment." **Fermi Response**: • New question written.

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																NRC Supplemental Comment: • New/replacement question determined to be satisfactory by the Chief Examiner.
94	F	3												N	S	
95	F	2												N	~~E~~ S	NRC: • Distractors A and B in particular, would require the CRS to provide Reactivity Management oversight for an unusually long period of time. Suggest the following enhancements to raise the Discrimination Validity of Distractors A, B, and C: o Distractor A: Reactor startup per the GOP until criticality is achieved. o Distractor B: Reactor shutdown per the GOP until the plant reaches 25% power. o Distractor C: Planned downpower to perform a rod pattern adjustment. **Fermi Response**: • Changes made to distractors per recommendations above.
96	F	2												N	S	
97	F	3												N	~~E~~ S	NRC: • Distractor C Explanation, last sentence states ***"However, this distractor is incorrect because two valve isolation is required …"***..This statement contradicts the explanations for the answer and the other two distractors. **Fermi Response**: • Corrected Distractor C explanation to state that "two valve isolation is NOT required".
98	~~H~~ F	3												~~B~~ N	~~E~~ S	***NRC 2012 ILE*** NRC: • Per ES-401, Paragraph D.2.a (last sentence), questions selected for Tier 3 are to maintain their focus on the plant-wide generic K/As. Specific knowledge of EOP diagnostic steps and decision points (in the PCP Leg of 29.100.01, SH 2) that involve transitions to event-specific sub-procedures is required to answer this question correctly. In addition, evaluation of curves on 29.100.01, SH 6, is also required to answer the question correctly. For these reasons, the question does not satisfy Tier 3 criteria to focus on generic plant-wide topics. **Fermi Response**:

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/ units	Back-ward	Q= K/A	SRO Only	B/M/N	U/E/S	Explanation
																• New 'generic' question written on this topic to satisfy Tier 3 requirements. LOK changed from High to Low due to recall of information and bases. Source changed to New. **NRC Supplemental Comment**: • New question determined to meet Tier 3 criteria by the Chief Examiner (Question approved during OV Week).
99	~~H~~ F	~~3~~ 2												~~B~~ N	~~E~~ S	***NRC 2015 ILE*** NRC: • Per ES-401, Paragraph D.2.a (last sentence), questions selected for Tier 3 are to maintain their focus on the plant-wide generic K/As. Specific knowledge of the EOPs is required to answer this question correctly. Specifically, the evaluation of existing Core Spray flow conditions against the NPSH and Vortex Limit curves on EOP 29.100.01, SH 6, to determine the appropriate Core Spray divisional flow requirements to ensure that Adequate Core Cooling can be maintained. For this reason, the question does not satisfy Tier 3 criteria to focus on generic plant-wide topics. **Fermi Response**: • New 'generic' question written on this topic to satisfy Tier 3 requirements. LOK changed from High to Low due to recall of information and bases. Source changed to New. **NRC Supplemental Comment**: • New question determined to meet Tier 3 criteria by the Chief Examiner.
100	F	3												B	S	

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RO TOTALS:	B= 32 M= 6 N= 37	F= 31 H= 44	E= 26 U= 6	Additional Notes: **8.0%** of RO questions assessed as unsatisfactory.
SRO TOTALS:	B= 4 M= 0 N= 21	F= 9 H= 16	E= 10 U= 3	Additional Notes: **12%** of SRO questions assessed as unsatisfactory.

GENERAL COMMENTS:

1. There are **10** (RO) / **4** (SRO) questions with references/attachments provided.
   Note: 3 of the **7** RO references are embedded graphics, **1** is an ARP, 1 is an EP procedure, and **1** is the same reference utilized in 2 different questions (included as part of a reference package).

2. Questions from the previous 2 NRC Exams: **0** (RO)/ **0** (SRO)

3. Average difficulty is **2.61** on the RO exam and **2.64** on the SRO exam. Overall difficulty for the 100 question exam is **2.62**.