

NRC COMMENTS ON THE OPERATING TEST AND

ES-401-9 FOR THE NRC COMMENTS ON THE WRITTEN EXAM

FOR THE D. C. COOK INITIAL EXAMINATION - MARCH 2004

**DC COOK 2004 INITIAL LICENSE EXAM
SUBMITTED OPERATING EXAM COMMENTS**

ADMIN JPMs	NRC COMMENT	LICENSEE RESOLUTION
A.1.a (RO)	Validation change.	Change task briefing to 32 hours vs. 28 hours; Start new paragraph with directions to operator (You are ...); Bold "current," reorder bulleted items and change to 'NERDS is NOT available"; Body page 1 – Add Note for evaluator in case candidate expresses concern with >30 hour on previous SDM; Body page 2 – briefing spelling.
A.2 (RO)	<p>1) Include suction/discharge paths and electrically tag out pump for equipment protection.</p> <p>2) Validation change.</p>	<p>1) Change to Determine Clearance Boundaries vs. Isolate Leak; Add Electrical Print to reference, Handout and body pages; Add CTs for electrical Switch and Breaker; Change briefing to determine clearance boundaries to isolate leak and protect pump.</p> <p>2) Add page to body to provide cues for locating prints. Provide FDB Screen print option and direction to provide prints when located. Body page 3 correct Breaker # to 1B vs. B1.</p>
A.3 (RO)	<p>1) Need more analysis, diagnosis, or operator action to evaluate applicant competency, ie, currently RO follows procedure to align system, lowers containment pressure, then secures system. Add a fault or problem that requires identification and securing release.</p> <p>2) Validation change.</p>	<p>1) Will change to bring in High alarm, require applicant to enter contingency 4.3.3 to secure release.</p> <p>2) Body page 2 – Add cue for 2-VFS-2521; Body page 4 – Add "Blue Book"/Surv. Book to CPR number step; Body page 6 – Delete "and holds" from 2-VCR-107 step.</p>
A.4 (RO)	1) Validation change.	1) Add "System Malfunction" to briefing; Body page 1 – Add Completion Time blank.
A.1.b (SRO)	1) Validation change.	Change briefing to "went to failure 5 minutes ago" and include required documentation; Body page 8 – Add Cue for required documentation; Body page 9 – Add Chemistry Admin time cue; Correct handout package.
A.2 (SRO)	Post validation change.	Correct Date on Handout due to schedule change.

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A.3 (SRO)	1) SRO only responsible (per procedure) to verify initials, proper signature and performed within 24 hours. Add missing signature. Require applicant to identify signature must be qualified RP or CHEM technician, or Plant Manager. 2) Post validation change.	1) Remove missing initial step and leave Chemistry approval blank. Cue "applicant will need to identify who can approve." 2) Correct Dates on Handouts and JPM Body pages 3 & 4 due to schedule change.
JPM A.4 (SRO)	Validation change.	Add "Time Critical JPM" to briefing and provide blanks to record Start time (Briefing), Classification time (page1) and PAR time (page 5).
SYSTEM JPMs	NRC COMMENT	LICENSEE RESOLUTION
B.1.a (RO)	Validation change.	Body page 2 - Typo on 1 st CT "GRC" to CRC. Body page 3 – Change last cue to Control Room has placed the breaker in the desired position. Handout – N/A step 4.2
B.1.b (B.1.a) RO(SRO-I)	Validation change.	Add "TC #45 has failed" to briefing.
B.1.c (B.1.b) RO(SRO-I)	1) Remove BOLD, large font "Alternate JPM" label from JPM cover sheet, move to examiner cue page or at start of the "alternate path" part of JPM. 2) Validation change.	1) Move Alternate Path to headers from front page. 2) Body page 4 – Clarify 1 st & 3 rd CT to denote Steam Stop Dump Valves (Add #s) to close SG Stop valves. Add note to provide attachment A. Body page 6 – Delete 2-URV-140 (doesn't exist)
B.1.d (B.1.e) RO(SRO-I)	Validation change.	Body page 1 – Change Cue to read "No Admin limits in effect"
B.1.e (B.1.c) RO(SRO-I)	Validation change.	Change 3 rd Temp in Setup to 590 vs. 490
B.1.f (B.1.d) RO(SRO-I)	1) Remove BOLD, large font "Alternate JPM" label from JPM cover sheet, move to examiner cue page or at start of the "alternate path" part of JPM. 2) Validation change.	1) Move Alternate Path to headers from front page. 2) Body page 2 – Add limit of 3500KW to last CT; Handout page 25 – Speed setting to 20.4.
1) B.1.e (B.1.a) SRO-I(SRO-U), SIM07, "Dilute the RCS" 2) B.1.a SRO-U	1) Could this evolution be inadvertently performed during any scenario? If so, select another JPM. 2) Validation change.	1) Change to SRO-Us only will perform this JPM. 2) Body page 1 – Change 1 st Cue to include that Attachment 6 is complete and verified.

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B.1.f (B.1.b) SRO-I (SRO-U)	Validation change.	Body page 1 – Add Cue that no personnel are in containment.
B.1.g (B.1.g)[B.1.c], SIM09 RO(SRO-I) (SRO-U)	<p>1) Change Cue and setup to start with DP alarm lit; Remove BOLD, large font "Alternate JPM" label from JPM cover sheet, move to examiner cue page or at start of the "alternate path" part of JPM.</p> <p>2) Validation change.</p> <p>3) Exam administration change.</p>	<p>1) Change Cue and setup to start with DP alarm lit; Move Alternate Path to headers from front page.</p> <p>2) Body page 2 – Change Fast to "High". Add Cue that US acknowledges DP not lowering and directs operator to perform 12-OHP-4022-057-001.</p> <p>3) Replaced this JPM for first SRO-U because of improper simulator configuration. Ran this JPM for all 12 remaining applicants.</p>
B.1.c SRO-U, SIM10	Exam administration.	This JPM replaced SIM09 for one SRO-U. NRC RIII management was consulted. New JPM was developed by licensee, and, reviewed and validated by NRC examiners using independent crew.
B.2.a SRO-I	Validation change.	Change Cue to perform Attachment A. Remove Cues and verifications from page 1 body, page 2 note, and delete page 4. (Attachment A contains steps performed – remainder was verifications)
B.2.b (B.2.a) SRO-I (SRO-U)	<p>1) Remove BOLD, large font "Alternate JPM" label from JPM cover sheet, move to examiner cue page or at start of the "alternate path" part of JPM.</p> <p>2) Validation change.</p>	<p>1) Move Alternate Path to headers from front page.</p> <p>2) Change Handout to pages 84-86 (delete 83); Body page 1 – Change 1st Cue to "ON" vs. "UP"; Body page 2 – Change last Cue to Use indicated inverter readings (if operating) vs. all normal.</p>
B.2.c (B.2.b) SRO-I (SRO-U)	Validation change.	Body page 2 – Change 2 nd Cue to clarify to cycle valve closed and then back open.

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B.2.b RO	Validation change.	Change reference #s and briefing to reflect Unit 2 operations; Body Page 3 – Change Step and Cue that EPT-200 in locked room and RNO must be performed; Body Page 4 – Change 1 st line from “pressure” to “flow”; Change 2 nd Cue to “operator checks gage” vs. monitored locally; Bold Cue and change to another operator is assigned to monitor PRZ level.
B.2.c RO	<p>1) Ensure applicants can read fuse nameplate; Make sure cue specifies the function to be disabled such that only one fuse is correct one to pull; Remove BOLD, large font “Alternate JPM” label from JPM cover sheet, move to examiner cue page or at start of the “alternate path” part of JPM.</p> <p>2) Validation change.</p>	<p>1) Will give applicant legible, colored picture; Will ensure cue only fits one fuse; Move Alternate Path to headers from front page.</p> <p>2) Add Picture of Pushbutton/flag to handouts; Body page 2 – Add Cue that Green Lights are Lit and reference picture of flag and pushbutton when checking breaker open.</p>
SCENARIOS	NRC COMMENT	LICENSEE RESOLUTION
04-01	Validation change.	Add IC # to Cover and Setup page; Add U2 Aux Steam to IC; Event #1 Page 1 – Change Placing switches to Neutral to 1 st action for BOP; Event #2 Page 2 – Add Dilution Steps to reactivity change; Page 11 – Terminate scenario after RHR & CTS are aligned to the sump and restarted; Alignment of CVCS & SI on pages 12 & 13 was deleted; Critical Task Summary #2 – Change ECCS to RHR Setup – Add EDG Fuel Oil Xfer Pump lights to setup.

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04-02	Validation change.	Add IC # to Cover and Setup page; Event #1 Page 1 – Corrected (swapped) Middle & North pumps throughout body; Event #2 Page 2 – Add Boration Steps to reactivity change; Event #3 page 3 Added applicability of TS 3.1.2.6 since EDG is OOS. – 72 hour action; Event #5 page 5 – Added Details for Continuous Rod Motion Procedure – Event carried over to page 6 (Renumber pages); Delete second page 5 – Power reduction; Setup – Add EDG Fuel Oil Xfer Pump lights to setup.
04-03	Event 2 - For the #21 SG Level Channel failure LOW, the applicant would need to <u>lower</u> the 2-FRV-210 controller output (NOT <u>raise</u> the controller output as presently stated).	Comment incorporated.
04-03	Event 2 - For the #21 SG Level Channel failure LOW, the applicant would need to <u>lower</u> the 2-FRV-210 controller output (NOT <u>raise</u> the controller output as presently stated).	Comment incorporated.
04-03	Validation change.	Add IC #938 to Cover and Setup page; Change Power to 65% (also on summary page); Event #1 Page 1 – Delete Duplicate BOP actions – Add C/S to Manual and the switch to Opposite strainer; Event #3 Page 3 – add Optional Steps for RCS Leakage Procedure; Event #4 Page 4 – Add Boration Steps to reactivity change.
04-04 (Spare)	1) Event 4 is the only event that requires reference to Tech Specs. Add or change an existing event to provide a second entry requirement into Tech Specs. [ROI 2003-16 Draft Rev. 9 clarification]. 2) Validation change.	1) Replaced Pressurizer Pressure Master Controller Failure (event 4a) with NPP-151 fails low (Actions are similar but NPP-151 has TS actions – Provides two TS for this scenario); Event #4 Page 4 - Changed "Heates" to "Heaters" in Operator Action Heading. 2) Add IC # to Cover and Setup page; Change Event #2 to include 2 minute ramp - Cover and Setup page; Event #1 Page 1 - Add Dilution Steps to reactivity change; Crew Response for Event #3 – Add "appears to be a breaker problem (Not a bus problem).

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04-04 (Spare)	Event 4 - Typo: Under "Event Description on Form ES-D-2, Changes "PRZ Heates" to "PRZ Heaters".	Comment incorporated.
04-05	<p>1) Event 2 is the only event that requires reference to Tech Specs. Add or change an existing event to provide a second entry requirement into Tech Specs. [ROI 2003-16 Draft Rev. 9 clarification].</p> <p>2) Validation change.</p>	<p>1) Replaced #21 FRV Controller Oscillation/Failure (event 4) with FFC-210 fails low (Actions are similar but FFC-210 has TS actions – Provides two TS for this scenario (Swapped this event from Scenario 6 – Moved FRV to Scenario #6); Event #4 Page 4 - Changed "steam" to "feed" in TS actions (Note this event came from scenario #6 – so it was originally listed as Scenario #6 comment).</p> <p>2) Event #2 Page 2 – RO Item 4 – Add "Adjust Rods/Load for Tave & AFD; Add Steps for SRO and RO to address Continuous Rod Movement Procedure; Event #4 Page 4 – BOP Second Row Change "Raises" vs. "Lowers"; Event #6 Page 6 - Add Boration Steps to reactivity change; Event #7 Page 7 – Removed "Verify Rods in Auto and steam Dump Control" Added Note that previous failure MPC-253 would cause rods and dumps to control incorrectly if in Auto; Crew Response page – Add Bistables for FFC-510 failure.</p>
04-06	<p>1) To save time, add to the "Turnover" that after swapping CCP pumps, want to reduce power to 80%. [Crew reactivity briefing - do before start of scenario].</p> <p>2) Validation change.</p>	<p>1) Replaced FFC-210 fails low with #21 FRV Controller Oscillation/Failure (event 4) (Actions are similar but FFC-210 has TS actions – Still leaves three TS for this scenario (Swapped this event from Scenario 5 – Moved FFC-210 to Scenario #5); Cover Page Turnover – Added "then continue power reduction to 80%."</p> <p>2) Add IC # to Cover and Setup page; Event #1 Page 1 – Add bullet to align AES fans; Event #2 Page 2 - Add bullets to defeat failed RTD; Event #3 Page 3 - Add Boration Steps to reactivity change; Event #5 Page 5 – Add Letdown restoration steps; Scenario Events Page – Event #2 – Add "after CCP Swap."; Scenario Events Page – Event #4 – Add "after power change."; Crew response Page – Delete #1, Swap #3 & #4 responses.</p>

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04-06	Event 4 - The last sentence on the page should be changed to reference a feedwater flow channel failure (NOT a steam channel failure).	Comment incorporated.
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DC Cook March 2004

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
B01	H	2												S	Bank.
B02	H	2												S	#New.
B03	H	1												U	#New. LOD = 1. Knowledge of lens colors. With a PZR PORV and its block valve open, it is quite logical that this is causing the RCS pressure decrease. RESOLUTION: Replaced question.
B04	F	2												E	Bank. 1) In distractor B, delete "through IMO-910", since other distractors do NOT mention valve numbers. 2) Re-word distractor B to be similar to distractor A: "Both operating charging pumps will receive suction flow from the RWST." RESOLUTION: changed B. to "will receive flow" and removed "through IMO-910."

Instructions

[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 - 5 (easy - difficult) rating scale (questions in the 2 - 4 range are acceptable).
- Check the appropriate box if a psychometric flaw is identified:
 - The stem lacks sufficient focus to elicit the correct answer (e.g., unclear intent, more information is needed, or too much needless information).
 - The stem or distractors contain cues (i.e., clues, specific determiners, phrasing, length, etc).
 - The answer choices are a collection of unrelated true/false statements.
 - More than one distractor is not credible.
 - One or more distractors is (are) partially correct (e.g., if the applicant can make unstated assumptions that are not contradicted by stem).
- Check the appropriate box if a job content error is identified:
 - The question is not linked to the job requirements (i.e., the question has a valid K/A but, as written, is not operational in content).
 - The question requires the recall of knowledge that is too specific for the closed reference test mode (i.e., it is not required to be known from memory).
 - The question contains data with an unrealistic level of accuracy or inconsistent units (e.g., panel meter in percent with question in gallons).
 - The question requires reverse logic or application compared to the job requirements.
- 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).
- Based on the reviewer's judgment, is the question as written (U)nacceptable (requiring repair or replacement), in need of (E)ditorial enhancement, or (S)atisfactory?
- At a minimum, explain any "U" ratings (e.g., how the Appendix B psychometric attributes are not being met).

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
B05	H	2				X								E	Bank. 1) Add to distractor B at the end of the sentence: "... and trip the No. 3 RCP after the reactor is shutdown." 2) Distractor C is NOT plausible. Change to: "Do NOT trip the reactor. Trip the No. 3 RCP and be in Hot Standby within one hour." 3) Distractor D - Add: "Do NOT trip the reactor" as a first sentence. RESOLUTION: B. added "after the reactor is shutdown;" C. and D. starts with "Do NOT trip the reactor;" C. ends with "Be in Hot Standby in 1 hour."
B06	H	3												E	Bank. 1) Change distractor A to be an observable parameter (i.e. Charging flow will RISE). 2) Change distractor C to "PRZ level will LOWER" for symmetry with new distractor A above. RESOLUTION: A. changed to "Charging flow" vs. RCS mass; C. changed to "PRZ level will lower."
B07	F	2							X					E	Bank. Distractor C requires knowledge from memory of the conversion of the Boric Acid Storage Tank level from "%" to "gallons" as given by an engineering calculation. This knowledge seems too detailed to require an RO to know from memory. Why would the RO be expected to know this from memory? RESOLUTION: Added 12-Figure 19.17 pt. 1. and 2. as handout. Also capitalized "Meets" in stem, changed answer to 64 degrees F.
B08	F	3												S	#Bank.
B09	F	3												E	Bank. B. added "positive reactivity changes."
B10	H	3												E	Bank. 1) Change distractor C from "141%" to "140%". 2) Add the "Approx." at the beginning of distractors A, B, and C. RESOLUTION: Added "Approximately" to A, B., and C. Changed C. to 140.
B11	H	2												S	Bank.
B12	F	3												E	Bank. In distractor C, change "would" to "could". RESOLUTION: Comment incorporated.
B13	F	3												S	Modified.
B14	F	3												E	Bank. In distractor B, add the word "the" at the beginning to make the English correct. RESOLUTION: Comment incorporated.
B15	F	3										X		U	#New. Q ≠ K/A. The K/A is related to the knowledge of the interrelationship between an accidental liquid rad release and the radioactive gas monitors. The question asks what actions are required for a high radiation alarm on a gaseous rad monitor for a leak. RESOLUTION: Re-worded stem with "which is true" and modified distractors to reflect a knowledge requirement instead of an action.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
B16	F	3												S	Bank.
B17	H	3												S	Bank.
B18	H	2												S	Modified.
B19	F	3												S	Bank.
B20	H	2				X								E	#New. 1) Distractor C is NOT plausible. Change to: "Perform a controlled rapid shutdown per _____, since RCS leakage is greater than the Tech Spec allowable value." 2) In distractor A, add the word "controlled" in front of "rapid shutdown" and state the procedure to be used for the rapid shutdown (i.e., per _____). RESOLUTION: A. added procedure number and name. C. changed to rapid shutdown since greater than Tech Spec limit.
B21	F	3	X											E	Modified. In the stem question, delete the word "seals", since the correct answer is associated with how the RCP would be affected, not the seals. RESOLUTION: Comment incorporated.
B22	H	3												S	#New.
B23	F	2												S	Bank.
B24	H	3				X								U	Modified. 1) Distractor C is NOT plausible, since one would NOT stop CS pumps when containment pressure exceeded a certain pressure (would only stop CS pumps when containment pressure was less than a certain value). Did you mean to say that: "Containment pressure is allowed to rise to 12 psig with NO CS pumps running?" 2) Distractor D is NOT plausible, since a ruptured SG would NOT be expected to be addressed in a containment high pressure procedure (since a ruptured SG would NOT be contributing to a containment pressure rise). Change distractor D to: "a faulted steam generator is NOT isolated to allow for additional RCS cooldown. 3) In the question stem, delete the word "the" at the end of the stem, and add the word "the" to the beginning of distractors A and D to make the distractors grammatically correlate with the stem. RESOLUTION: Changed C. to "12 psig with NO" CTS pumps. Changed D. to "faulted" from "ruptured." Removed "the" from stem and added to A. and D.
B25	H	3												S	New.
B26	H	3												S	Bank.
B27	H	3												S	Bank.
B28	H	3												S	#Modified.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
B29	F	2												E	Bank. In the question stem, change "hot shutdown" to "hot standby", since the plant would be in hot standby (RCS temperature greater than 350°F) following a plant trip. RESOLUTION: Comment incorporated.
B30	H	3												S	Bank.
B31	H	2												S	Bank.
B32	F	1				X								E	Modified. Distractor C is NOT plausible. It is obvious that adding makeup to the RWST and reducing to one train of ECCS has nothing to do with restoring emergency coolant recirculation capability. RESOLUTION: C. changed to "Establish conditions to restart RCP."
B33	H	2		X										E	Modified. 1) Distractor B is ambiguous in that does it mean level in at least one SG, and does it mean total AFW flow? 2) Distractor D has a reason for performing the action, whereas the other distractors do NOT. Delete the reason in distractor D. RESOLUTION: Changed B. to read like C. with condition of at least 1 SG greater than 13%. Remove "to reduce cooldown rate" from D.
B34	H	2												S	Modified.
B35	H	2												E	Bank. Changed "protection setpoints" to High Power Reactor Trip protection setpoints."
B36	H	2												S	Bank.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
B37	H	2				X									U	<p>#Bank. 1) Distractor B is NOT plausible, since this would imply that the original coincidence was 1/4. 2) Distractor C is NOT plausible, since this would imply that the original coincidence was 3/4. Suggest the following new question: PZR pressure channel _____ has failed high (NOTE: This needs to be a channel associated with the low PZR pressure SI). The bistables associated with the failed channel have been tripped per _____. The Unit is now in Mode 3 at full RCS temperature and pressure. An RCS cooldown and depressurization is about to commence to cold shutdown. During the RCS depressurization, what is the REMAINING coincidence associated with P-11 (with the failed channel deleted) to allow blocking Low PZR Pressure SI?</p> <p>A. 2 of 3 channels below P-11 (NOTE: The applicant may believe this distractor to be true if he thinks that the failed PZR pressure channel was NOT associated with the Low PZR Pressure SI function.)</p> <p>B. 1 of 2 channels below P-11</p> <p>C. 2 of 2 channels below P-11 (I believe this is correct answer)</p> <p>D. Can NOT block Low PZR Pressure SI without untripping bistable associated with P-11 for the failed channel.</p> <p>RESOLUTION: Licensee stated that as originally written there was a 50% failure rate during validation. Changed stem, answer, and distractors to ask for remaining SI and CTS coincidence with 1 containment pressure channel failed (required modification to question 103 to eliminate double jeopardy).</p>
B38	H	2				X									E	<p>Bank. 1) Distractor A - add the following words at the end of the sentence to make this distractor clearer: "rods have dropped" (and add a period at the end of the sentence).</p> <p>2) To make distractor C more plausible, change distractor C to: "An ATWS has occurred, since more than a single dropped rod should have resulted in a reactor trip."</p> <p>RESOLUTION: Added to A. "is provided to determine whether any rods have dropped." Changed beginning of C. to "An ATWS condition has occurred since..."</p>
B39	H	3													S	Bank.
B40	H	3													S	New. Changed RCS T-hot to 608 degrees F vs 560 degrees F.
B41	H	3				X									E	<p>Bank. Distractor D is NOT plausible, since it has the same temperature of 400°F as in distractor C. Pick new values for distractor D so that all distractors have different values listed. For example, pick 450 psig and 430°F for distractor D, and then switch the order of distractors C and D.</p> <p>RESOLUTION: Move old C. to D. as new correct answer. Change C. to 450 psig and 430 degrees F.</p>

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
B42	H	3													E	Bank. Editorial comment: In the stem, delete the plural "s" for "Units 1" and "Units 3" (i.e. "Unit 1" and "Unit 3"). RESOLUTION: Comment incorporated.
B43	H	2				X									E	#New. Distractor A is NOT plausible, since one just needs to know that the Green lights for the Main Steam Stop Valves means that the valves are closed. RESOLUTION: Deleted Main Steam lights from stem and changed A. to "Only Train B CTS has failed."
B44	H	3													E	#New. Changed stem format to bullets, added bullet that CD EDG started and loaded, added Train A or B to distractors for Recombiner 1 or 2.
B45	H	3													E	Bank. Added "N31 is selected for audible," changed N31 and N32 failure to "fails" vs "fuse blows."
B46	H					X									U	#New. 1) Distractor B is NOT plausible, since FW flow channel 2-FFC-231 is NOT selected for control of FW reg valve 2-FRV-230, and the operators should know that 3.7 X 10 ⁶ PPH is normal full power FW flow. 2) Distractor C is NOT plausible, since FW flow indicator 2-FFC-231 indicates normal FW flow. RESOLUTION: Replaced question.
B47	F	3													U	Bank. This question is an SRO level question per 10CFR55.43(b)(2), since the question requires knowledge of Tech Spec Bases. Is there a procedure precaution or limitation that could be referenced instead of the Tech Spec Bases? RESOLUTION: Reworded stem, changed to Fundamental, and changed reference to fit RO required knowledge.
B48	H	3													E	Bank- Modified. As written, this question is Fundamental since operators would know the steam dump controller setpoint for No-Load Tavg from memory. Change the stem to require one to know what setpoint would be required for some Tavg other than No-Load Tavg, so that the use of the steam tables would be required. For example, change the stem to have RCS Tavg stable at 510°F and ask what setpoint on the steam dump controller would be required. RESOLUTION: Changed question to Modified and Higher because changed stem to request 541 degrees F. Changed answer and all distractors accordingly.
B49	F	2													S	Bank.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
B50	F	2				X									U	Bank. 1) Distractor A is NOT plausible, since there would be NO good reason NOT to initiate AFW flow when it became available. 2) Distractor C is NOT plausible, since once bleed is initiated (by opening the PZR PORVs), there would be NO good reason NOT to initiate feed until AFW became available. RESOLUTION: Rewrote question to ask if Bleed and Feed required, and if so, when stopped.
B51	H	3													S	#New. [Need to go over this question with exam writer to verify technically what the correct answer is.]
B52	H	4													S	Bank. [Need to go over this question with exam writer to verify technically what the correct answer is.]
B53	F	3													S	Bank.
B54	H														S	New. From the Figure on page 144 of procedure 02-0HP-4030-STP-027AB, it appears that an EDG current of 480 amps is too low. [Need to discuss question with exam writer to verify the correct answer.] RESOLUTION: Verified that 480 amps is the correct value to be specified in the stem; however, raised amps to 610 in stem and updated reference. Changed "EDG" in distractors to "Generator."
B55	F	2													S	Bank.
B56	F	3													E	Bank. Add at the end of distractor A: "for the gas decay tank on fill." RESOLUTION: Comment incorporated.
B57	F	2													S	Bank.
B58	F	2				X									E	New. To make distractor C more plausible, change to: "The 'ALERT' setpoint has been reached for the monitor during the source check." RESOLUTION: Comment incorporated.
B59	H	3													U	Modified. 1) Need to list the K/A for the question on the "Question Report" sheet. The K/A is 073000K1.01. 2) It can be argued that distractor C is also NOT correct and that there is NO correct answer. Unless the operator coordinates with Chemistry and watches the R-19 rad monitor while Chemistry selects individual SGs to sample, R-19 only provides indication that there is a tube leak somewhere in at least one of the SGs. To resolve this item, add to the end of distractors C and D: "During Chemistry sampling". RESOLUTION: Added "during Chemistry sampling" to C. and D.
B60	H	3													E	#New. Added "short term" to stem.
B61	F	3													E	Bank. In the question stem, change the word "should" to "is required." RESOLUTION: Comment incorporated.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only			
B62	F	2													E	Bank. In the question stem change: "... margin to Containment design pressure ..." to "... margin to Tech Spec Containment pressure limits ...," since a pressure of 0.29 psig is nowhere near the containment design pressure. RESOLUTION: Comment incorporated.
B63	F	2				X									E	Modified. 1) Add to stem something to the effect that "it would satisfy management expectations." 2) Distractor C. - Change "Sierra Golf " to "steam generator." RESOLUTION: Comments incorporated.
B64	F	3													E	New. 1) Change distractor C to: "the pump's auto start function is tested." 2) Distractor D is NOT specific as far as what "functionally tested" means. Change to: " the pump is manually started." RESOLUTION: C. added "pumps;" D. changed "functionally tested" to "manually started."
B65	F	2				X									E	#New. 1) Change distractor C to: "Latching of the first fuel assembly in the Spent Fuel Pit during core reload." 2) Distractor D is NOT plausible. Change to: "RCS temperature less than 140°F with refueling RCS boron concentration met." RESOLUTION: C. removed "new" and corrected "assembly;" D. changed to "As soon as the RCS temperature is lowered to less than 140 degrees F with a boron concentration of at least 2450 ppm."
B66	F	3													E	New. The correct distractor C assumes that both Control Room Pressurization fans started following the Safety Injection. Add to the stem after the first sentence: "All equipment functioned properly following the event initiation." RESOLUTION: Comment incorporated.
B67	F	3				X									U	Bank. 1) Distractor B is NOT plausible (to use highest RVLIS pressure in the RCS subcooling calculation). Change distractor B to: "Use 8 highest CETC average and lowest RVLIS pressure." 3) Distractor D is NOT plausible(to use highest RCS wide range pressure in the RCS subcooling calculation and to use the 5 lowest CETC average). Change distractor D to: "Use 5 highest CETC average and lowest RCS wide range pressure." 4) For symmetry change distractor A to: "Use 8 highest CETC average and lowest RCS wide range pressure." RESOLUTION: Utility verified that the RCS Subcooling Margin Monitor does NOT use RCS wide range pressure. Changed A. to "8", B. to "lowest RVLIS," and D. to "highest CETC" and "lowest WR RCS pressure."

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only			
B68	H	1													U	#New. LOD = 1. Change question so that a large break LOCA has occurred and the crew is implementing ECA-1.1, "Loss of Emergency Coolant Recirculation" instead of E-1. Then ask which procedure(s) have priority for implementation and why (i.e., FR-C.2 (correct answer), FR-Z.1 (incorrect), ECA-1.1 (incorrect), or ECA-1.1 while also performing FR-Z.1 (incorrect). RESOLUTION: Incorporated comment as described.
B69	F	3													E	Bank. Distractor D (listed as the correct answer) can be construed to be incorrect, since one does NOT run the second CCP as long as it continues to operate, but it is run until establishment of CVCS crosstie from Unit 1. Add to stem that the Unit 1 CVCS crosstie for seal cooling is OOS closed. RESOLUTION: Added to stem that CVCS crosstie is not available.
R70	F	1				X									U	New. Distractors A and D are NOT plausible. The fact that the Reactor trip breakers indicate GREEN when OPEN and indicate RED when CLOSED is basic knowledge for any breaker. RESOLUTION: Changed KA and replaced question.
R71	H	2													S	Modified.
R72	H	2													S	#New.
R73	H	3													S	#New.
R74	F	2													S	Bank.
R75	H	3													E	Bank. Typo - In distractor D the word "withdrawl" should be spelled "withdrawal." RESOLUTION: Comment incorporated.
R76	F	1													U	New. LOD = 1. The RED and GREEN lights are the same for the RCP Oil Pumps as for any pump. Change question to the following: The WHITE light on the RCP Oil Lift Pump will illuminate _____. Also, during a RCP shutdown while in Hot Standby, the RCP Oil Lift Pump is _____. A. after 2 minutes if the RCP Oil Lift Pump has developed sufficient pressure; required by procedure to be started. B. after 2 minutes if the RCP Oil Lift Pump has developed sufficient pressure; NOT required by procedure to be started. C. when the RCP Oil Lift Pump has developed sufficient pressure (independent of time); required by procedure to be started. D. when the RCP Oil Lift Pump has developed sufficient pressure (independent of time); NOT required by procedure to be started. [NOTE: Need to specify whether distractor A or B is correct for DC Cook] RESOLUTION: Rewrote question per NRC suggestion.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Back-ward	Q=K/A	SRO Only		
R77	F	2												S	#New. Will loss of 600 volt bus EZC-C affect the opening of control air to containment valves 2-XCR-100, 101, 102, and 103, and thus affect the correct answer (distractor B)? RESOLUTION: Need to ask the utility this question.
R78	F	3												S	Modified.
R79	H	3				X								E	Bank. To make distractor D more plausible, change to: "Place the PORVs in CLOSE until required for an inadequate core cooling condition." RESOLUTION: Comment incorporated.
R80	H	3												S	Modified.
R81	F	2												S	Bank.
R82	F	2												S	Bank.
R83	H	3												S	Modified.
R84	F	3												S	#New.
R85	F	3				X								E	Bank. Distractor B is NOT plausible (to require a recorder to operate for the Containment Ice Condenser to be operable). RESOLUTION: B. changed to "One glycol circulating pump will NOT operate."
R86	F	3												E	Bank. Change distractor B to: "Removal of hydrogen in the containment atmosphere is lower due to the higher iodine present", in order to NOT mention explicitly the fact that there has been a reduction in the amount of sodium hydroxide injected. RESOLUTION: B. changed to "the higher iodine concentration."
R87	H	3												S	Modified.
R88	H	3				X								E	New. Distractor B is NOT plausible (to reset the trip and throttle valve by closing and then opening the AFW Pump Turbine steam supply MOVs). Delete the words : "by closing and then". RESOLUTION: Comment incorporated.
R89	H	2												S	Modified.
R90	F	1												U	Bank. LOD= 1. Instead of having distractors A, C, and D have all incorrect sources of input to the RCDT, have at least one input be to the RCDT in these distractors. Otherwise, LOD= 1. RESOLUTION: Added 1 RCDT input to each distractor: A. excess letdown HX; C. RCS loop drains; D. Rx Vessel flange L/O.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
R91	F	2												E	#Bank. 1) Change distractor A to 2.0%. 2) Change distractor D to 5.0%. 3) Fully capitalize "HIGHEST" in the stem to highlight this key word. RESOLUTION: Comments incorporated.
R92	F	2												S	Bank.
R93	F	2												S	Bank.
R94	F	3												S	Bank.
R95	F	3						X						U	#Modified. 1) Distractor A could also be considered correct, since the action to slowly open the door in case water is above the sill would be a good personal safety practice. 2) The reason given for distractor A being incorrect does NOT fit distractor A. RESOLUTION: Changed distractor A. to "Open 2-DR-271 to drain ESW pipe tunnel to the sub-basement."
R96	H	3												E	Bank. Delete the second part of the distractors that requires knowledge of Tech Spec actions that are greater than one hour. RESOLUTION: Comment incorporated.
R97	H	3												S	Bank.
R98	F	2				X								E	#Bank. Distractor C is NOT plausible since neither item is correct. Change to: "Exceeding tech spec heatup limits and limit the ΔP across the faulted SG tubes." RESOLUTION: C. removed DNBR limits and added "limit DP across the faulted SG tubes." [NOTE: This question was exchanged with the original question 131, since the original question 98 was an SRO level question. Changed SRO outline.]
R99	H	3												S	Modified.
R100	H	3												S	Bank.
S101	F	2											X	S	#New.
S102	H	2											X	S	#New.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
S103	H	4											X	E	#New. 1) Reword distractor B to: "The Train B Safety Injection signal will reset, but the Train B Auto Safety Injection Actuation will NOT be blocked. 2) In distractor C, change "ECCS" to "safeguards" since safeguards equipment other than ECCS equipment could have been affected (e.g., Service Water pumps). RESOLUTION: Distractor B is correct as written. Changed from Containment to Pressurizer pressure to avoid double jeopardy with question 37. Changed ECCS to "safeguards" in C. Changed "signal" to "actuation" in stem.
S104	F	2											X	S	Bank.
S105	F	1				X							X	U	#New. 1) The question in the stem refers to the "... impact this leak rate ...". This phrase should be reworded to "... impact this seal line resistance ...". 2) Distractors A, B, and C are NOT plausible. 3) In distractor D delete the word "Projected". 4) One distractor could be: RCP seal cooling may NOT be sufficient following an RCP thermal barrier rupture event." 5) Another distractor could be: "Auxiliary spray may NOT be available to depressurize the RCS." 6) Another distractor could be: "RCP seal cooling may NOT be sufficient following a loss of CC to the RCP thermal barrier." RESOLUTION: Change stem to "seal line resistance." Change A.- auxiliary spray inadequate; B.- seal injection inadequate during thermal barrier rupture; C.- CCP minimum flow in inadequate.
S106	F	3											X	S	#New.
S107	H	3											X	S	Modified.
S108	F	3											X	E	Bank. In distractor A change the word "will" to "could". RESOLUTION: Comment incorporated.
S109	H	3											X	S	New.
S110	F	3											X	S	New.
S111	H	3											X	S	New.
S112	H	3											X	S	Bank.
S113	H	3											X	S	#New.
S114	H	3											X	E	Modified. Add to stem that both SI pumps and both CCPs are running. RESOLUTION: Comment incorporated. Added "applicable" to C. and D.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
S115	F	3											X	E	Modified. 1) Reword distractor A to: "RCPs shall be restarted even if any had been previously stopped due to loss of support conditions." 2) In distractor B add the word "since" before "RCP trip criteria." RESOLUTION: A. changed "started immediately" to "restarted;" B. added "since."
S116	H	2											X	E	Bank: Modified. 1) To make distractors C and D more plausible, change the RCS temperature and RCS pressure numbers given so that they are NOT bounded by distractor A (in both RCS temperature swing and by RCS pressure). 2) In the stem add the word "potential" in front of "Pressurized Thermal Shock." Also, change the assumption in the stem to: "A pre-existing flaw existed." RESOLUTION: Changed to Modified. Changed all distractors and answer to eliminate overlap.
S117	H	2											X	E	#Modified. In the question in the stem, delete the word "containment" since PZR level at 0% is also given as a condition. RESOLUTION: Comment incorporated.
S118	H	3					X						X	U	Modified. Distractor A could be considered correct if one assumes the radiation level in containment decreased linearly 950,000 R/hr to 90,000 R/hr from 20 minutes to 90 minutes, resulting in a total integrated dose of less than 10 ⁶ R. To preclude distractor A from possibly being considered correct, change the stem to state that core damage occurred 3 hours ago instead of 1.5 hours ago. RESOLUTION: Changed stem to 2.5 hours and provided radiation / pressure table to show that levels have been elevated for at least 90 min.
S119	H	3				X							X	E	New. Distractor A is NOT plausible. Change the second sentence of distractor A to say: "Pressurizer PORVs NRV-151 and NRV-153 are still OPERABLE for LTOP." RESOLUTION: A. included NRV-151.
S120	H	2											X	E	Modified. In the stem change to: "The required response of the control room operators is to..." RESOLUTION: Changed stem from "should" to "are required to."
S121	F	3											X	S	Modified.
S122	H	3											X	S	Modified.
S123	H	3											X	S	Bank.
S124	F	2											X	S	New.
S125	H	4											X	E	Bank. Changed North SI to East CCP throughout. SI not required in Mode 4.

Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws					4. Job Content Flaws				5. Other		6. U/E/S	7. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job-Link	Minutia	#/units	Backward	Q=K/A	SRO Only		
S126	H	2											X	S	Modified.
S127	F	3											X	S	Modified.
S128	F	3											X	S	Modified.
S129	H	3											X	S	Modified.
S130	F	2				X							X	E	#New. 1) Distractor B is NOT plausible. 2) Change distractor D to delete the words "Direct the RO to" from the beginning of the second sentence in the distractor. RESOLUTION: B. changed to "E-0...OHP-4022-016-004 is NOT required since the EOPs address the loss of CCW.
S131	H	3				X							X	S	Modified. [NOTE: This question was exchanged with the original question 98, since the original question 131 was an RO level question. Also changed the RO outline.]

30 question initial review, references verified, licensee generated exam, KAs verified on all questions.