

Form 3.2-1 Administrative Topics Outline

Facility: <u>North Anna Power Station</u>		Date of Examination: <u>06/06/2022 to 06/10/2022</u>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <u>2022</u>
Administrative Topic (Step 1)	Activity and Associated K/A (Step 2)	Type Code (Step 3)
Conduct of Operations RO A1	JPM: Calculate the amount of Boric Acid required to lower RCS Tave by 2°F IAW Attachment 1 of 1-OP-8.3.4 G2.1.37 (4.3) Knowledge of procedures, guidelines, or limitations associated with reactivity management	R, D
Conduct of Operations RO A2	JPM: Determine time to 200°F IAW Attachment 14 of 1-AP-11 G2.1.25 (3.9) Ability to interpret reference materials, such as graphs, curves, and tables (reference potential)	R, N
Equipment Control RO A3	JPM: Determine the valves required for the Auxiliary Building Operator to locally isolate a Component Cooling Water Pump IAW Station Drawings G2.2.41 (3.5) Ability to obtain and interpret station electrical and mechanical drawings (reference potential)	S, N
Radiation Control RO A4	JPM: Determine correct RWP task number, dose and dose rate alarm setpoints, required dosimetry, and total expected dose for a given task in a RCA G2.3.12 (3.2) Knowledge of radiological safety principles and procedures pertaining to licensed operator duties, such as response to radiation alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, or alignment of filters	R, D
Emergency Plan		

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Administrative Topic (Step 1)	Activity and Associated K/A (Step 2)	Type Code (Step 3)
Conduct of Operations SRO A1	JPM: Review and either approve or disapprove a completed 1-LOG-20 (ECCS Leakage Log), then determine the required actions G2.1.20 (4.6) Ability to interpret and execute procedure steps	R, N
Conduct of Operations SRO A2	JPM: Determine the shortest VPAP-2802 notification time and the Agency(s) to be notified for a T.S. deviation per 10CFR50.54X&Y G2.1.18 (3.8) Ability to make accurate, clear, concise logs, records, status boards, and reports	S, D
Equipment Control SRO A3	JPM: Review and either approve or disapprove an APC Sheet for local isolation of a Component Cooling Water Pump IAW Station Drawings G2.2.41 (3.9) Ability to obtain and interpret station electrical and mechanical drawings (reference potential)	S, N
Radiation Control SRO A4	JPM: Determine if authorization should or should not be given for two Operators selected for emergency exposure G2.3.14 (3.8) Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities, such as analysis and interpretation of radiation and activity readings as they pertain to administrative, normal, abnormal, and emergency procedures or to analysis and interpretation of coolant activity, including comparison to emergency plan or regulatory limits (SRO only)	R, P
Emergency Plan SRO A5	JPM: Based on a loss of RHR, evaluate the given conditions and determine if any EALs apply G2.4.41 (4.6) Knowledge of the emergency action level thresholds and classifications (SRO only)	S, N

Form 3.2-2 Control Room/In-Plant Systems Outline

Facility: <u>North Anna Power Station</u>		Date of Examination: <u>06/06/2022 to 06/10/2022</u>	
		Operating Test Number: <u>2022</u>	
Exam Level: <input checked="" type="checkbox"/> RO <input type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U			
System/JPM Title		Type Code	Safety Function
Control Room Systems			
a.	001 Control Rod Drive System [001A2.24 (3.5/4.1)] JPM: Respond to a dropped rod and control RCS temperature IAW 1-AP-1.2	N,S,E	1
b.	004 Chemical and Volume Control System [004A4.19 (3.6)] JPM: Shift from Excess Letdown to Normal Letdown IAW 1-OP-8.5	M, S	2
c.	038 Steam Generator Tube Rupture [038EA1.04 (3.8)] JPM: Depressurize the RCS using Auxiliary Spray in 1-ECA-3.3	D, S, E, L	3
d.	005 Residual Heat Removal System [005A4.01 (4.0)] JPM: Restore RHR flow IAW 1-AP-11	M, S, E, L, A	4P
e.	WE05 Loss of Secondary Heat Sink [WE05EA1.20 (3.9)] JPM: Establish feed flow using Main Condensate IAW 1-FR-H.1	M, S, E, L, A	4S
f.	WE11 Loss of Emergency Coolant Recirculation [WE11EA1.15 (3.8)] JPM: Determine and establish Containment Spray requirements IAW 1-ECA-1.1	M, S, E, L, A, EN	5
g.	015 Nuclear Instrumentation System [015A4.04 (3.6)] JPM: Adjust PRNIs IAW 1-PT-24.1	M, S, A	7
h.	075 Circulating Water System [075A4.09 (2.6)] JPM: Respond to CW flooding in the Turbine Building IAW 0-AP-39.1	M, S, E, L, A	8
In-Plant Systems			
i.	024 Emergency Boration [024AA2.02 (3.8/4.0)] JPM: Locally Emergency Borate IAW 2-ES-0.1	P, E, A, R	1
j.	055 Station Blackout [055EK3.02 (4.2)] JPM: Perform U2 Turbine Building actions IAW 0-ECA-0.0	D, E	6
k.	086 Fire Protection System [086A2.05 (4.0/3.8)] JPM: Align and control charging flow through the U1 BIT IAW 0-FCA-1	D, R, E	8

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Operating Test Number: <u>2022</u>			
Exam Level: <input type="checkbox"/> RO <input checked="" type="checkbox"/> SRO-I <input type="checkbox"/> SRO-U			
System/JPM Title		Type Code	Safety Function
Control Room Systems			
a.	N/A	N/A	N/A
b.	004 Chemical and Volume Control System [004A4.19 (3.6)] JPM: Shift from Excess Letdown to Normal Letdown IAW 1-OP-8.5	M, S	2
c.	038 Steam Generator Tube Rupture [038EA1.04 (3.8)] JPM: Depressurize the RCS using Auxiliary Spray in ECA-3.3	D, S, E, L	3
d.	005 Residual Heat Removal System [005A4.01 (4.0)] JPM: Restore RHR flow IAW 1-AP-11	M, S, E, L, A	4P
e.	WE05 Loss of Secondary Heat Sink [WE05EA1.20 (3.9)] JPM: Establish feed flow using Main Condensate IAW 1-FR-H.1	M, S, E, L, A	4S
f.	WE11 Loss of Emergency Coolant Recirculation [WE11EA1.15 (3.8)] JPM: Determine and establish Containment Spray requirements IAW 1-ECA-1.1	M, S, E, L, A, EN	5
g.	015 Nuclear Instrumentation System [015A4.04 (3.6)] JPM: Adjust PRNIs IAW 1-PT-24.1	M, S, A	7
h.	075 Circulating Water System [075A4.09 (2.6)] JPM: Respond to CW flooding in the Turbine Building IAW 0-AP-39.1	M, S, E, L, A	8
In-Plant Systems			
i.	024 Emergency Boration [024AA2.02 (3.8/4.0)] JPM: Locally Emergency Borate IAW 2-ES-0.1	P, E, A, R	1
j.	055 Station Blackout [055EK3.02 (4.2)] JPM: Perform U2 Turbine Building actions IAW 0-ECA-0.0	D, E	6
k.	086 Fire Protection System [086A2.05 (4.0/3.8)] JPM: Align and control charging flow through the U1 BIT IAW 0-FCA-1	D, R, E	8

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		Operating Test Number: <u>2022</u>	
Exam Level: <input type="checkbox"/> RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U			
System/JPM Title		Type Code	Safety Function
Control Room Systems			
a.	N/A	N/A	N/A
b.	N/A	N/A	N/A
c.	N/A	N/A	N/A
d.	N/A	N/A	N/A
e.	N/A	N/A	N/A
f.	WE11 Loss of Emergency Coolant Recirculation [WE11EA1.15 (3.8)] JPM: Determine and establish Containment Spray requirements IAW 1-ECA-1.1	M, S, E, L, A, EN	5
g.	015 Nuclear Instrumentation System [015A4.04 (3.6)] JPM: Adjust PRNIs IAW 1-PT-24.1	M, S	7
h.	075 Circulating Water System [075A4.09 (2.6)] JPM: Respond to CW flooding in the Turbine Building IAW 0-AP-39.1	M, S, E, L, A	8
In-Plant Systems			
i.	024 Emergency Boration [024AA2.02 (3.8/4.0)] JPM: Locally Emergency Borate IAW 2-ES-0.1	P, E, A, R	1
j.	055 Station Blackout [055EK3.02 (4.2)] JPM: Perform U2 Turbine Building actions IAW 0-ECA-0.0	D, E	6
k.	N/A	N/A	N/A

Operating Test Review Worksheet

Form ES2.3-3

Facility: North Anna		Exam Date: 6/6/2022													
Admin	JPMs	1 ADMIN Topic and K/A	2 LOD (1-5)	3 Attributes						4 Job Content			5 U/E/S	6 Explanation	
				I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link			
	SRO A1	G2.1.18	2											E	Add to the cue after approve or disapprove completed 1LOG-20 "and identify if any required actions" Complete
	SRO A2	G2.1.37	1		X									U	Does not meet license level this could be a JPM to have a second RO verify the correct addition. Simply approving or disapproving the add does not seem to rise to the level of SRO only. Also just by giving a SRO something to approve seems like they would assume that they cannot approve it as it is a JPM and they need to be able to find something. Facility is swapping JPM to get an SRO level JPM Complete
	SRO A3	G2.2.41	2		X									U	Does not meet license level this could be a JPM to have a second RO verify the isolations. Simply approving or disapproving the add does not seem to rise to the level of SRO only. Also just by giving a SRO something to approve seems like they would assume that they cannot approve it as it is a JPM and they need to be able to find something. Complete
	SRO A4	G2.3.14	2											E	Lets get the numbers something that is less obvious. Make it so one can do it and the other cannot. Complete
	SRO A5	G2.4.41	2											S	No comments prior to validation
	RO A1	G1.37	2											S	No comments prior to validation
	RO A2	G2.1.25	2											S	No comments prior to validation
	RO A3	G2.2.41	2											S	No comments prior to validation
	RO A4	G2.3.12	2											S	No comments prior to validation
	Simulator/In-Plant JPMs	1 Safety Function and K/A													
	SIM A	1 001A2.24	2											E	No Alternate path, The cue for step 9 should be. If asked the SRO will ask what they recommend and then concur with what they say. If it is acceptable to or withdraw control rods to achieve the 1.5 degrees we should let them and have it in

Instructions for Completing This Table:

Check or mark any item(s) requiring a comment and explain the issue in the space provided using the guide below.

1. Check each JPM for appropriate administrative topic requirements (COO, EC, Rad, and EP) or safety function requirements and corresponding K/A. Mark in column 1. (ES-301, D.3 and D.4)
2. Determine the level of difficulty (LOD) using an established 1–5 rating scale. Levels 1 and 5 represent an inappropriate (low or high) discriminatory level for the license that is being tested. Mark in column 2 (Appendix D, C.1.f)
3. In column 3, “Attributes,” check the appropriate box when an attribute is **not met**:
 - The initial conditions and/or initiating cue is clear to ensure the operator understands the task and how to begin. (Appendix C, B.4)
 - The JPM contains appropriate cues that clearly indicate when they should be provided to the examinee. Cues are objective and not leading. (Appendix C, D.1)
 - All critical steps (elements) are properly identified.
 - The scope of the task is not too narrow (N) or too broad (B).
 - Excessive overlap does not occur with other parts of the operating test or written examination. (ES-301, D.1.a, and ES-301, D.2.a)
 - The task performance standard clearly describes the expected outcome (i.e., end state). Each performance step identifies a standard for successful completion of the step.
 - A valid marked up key was provided (e.g., graph interpretation, initialed steps for handouts).
4. For column 4, “Job Content,” check the appropriate box if the job content flaw **does not meet** the following elements:
 - Topics are linked to the job content (e.g., not a disguised task, task required in real job).
 - The JPM has meaningful performance requirements that will provide a legitimate basis for evaluating the applicant's understanding and ability to safely operate the plant. (ES-301, D.2.c)
5. Based on the reviewer's judgment, is the JPM as written (U)nacceptable (requiring repair or replacement), in need of (E)nhancement, or (S)atisfactory? Mark the answer in column 5.
6. In column 6, provide a brief description of any (U)nacceptable or (E)nhancement rating from column 5.

Save initial review comments and detail subsequent comment resolution so that each exam-bound JPM is marked by a (S)atisfactory resolution on this form.

Facility: North Anna		Scenario: 1					Exam Date: 6/6/2022			
1	2	3	4	5	6	7	8	9	10	
Event	Realism/Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scen. Overlap	U/E/S	Explanation	
1. charging pump swap							X	S	normal evolution,	
2. 1MS-PT-1447 fail low					X	X		S	Instrument failure	
3. main turbine bearing degrades								S	Action to trip the main turbine and reactor actually occur during event 5.	
4. 1CH-MOV-1115C closed gas binding					X	X		E	CT bounding conditions should be prior to the need for charging required in event 7.	
5. transformer temp>90								S	Basically, ramping the unit down to 780 MW. When turbine bearing gets bad enough to warrant a reactor trip.	
6. Control rods fail to insert on trip						X		E	Need to verify critical task during validation	
7. MSLB due to seismic event								S	Sat pending on site validation	
7a. 1-FW-MOV-150B fails to close automatically								S	Sat pending on site validation	
8. Manually actuate Phase A isolation								S	Sat pending on site validation	
					2	3		0		

Facility: North Anna		Scenario: 2					Exam Date: 6/6/2022			
1	2	3	4	5	6	7	8	9	10	
Event	Realism/Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scen. Overlap	U/E/S	Explanation	
1. Raise Power								S	Reactivity event, Sat once validated	
2. Sheered Shaft 1 BC-P-1A								S	Sat once validated	
3. 1-HV-AC-6 trips					X			S	No verifiable actions for RO TS only event.	
4. 2SW-P-1A OC trip					X		X	S	Sat once validated	
5. 1-RC-PCV-1455A fails open							X	S	Sat once validated	
6. Restore power to 1J, EDG failure						X		S	Not sure this is critical. Need to validate.	
7. SGTR C S/G						X		S	Sat once validated. May want to shore up the bounding conditions during prep week.	
7a. SI fails to auto actuate								S	Need for SI based on a SGTR. Need to ensure that SI is required to prevent losing a safety function for the CT and would like to the have a more concrete bounding criteria.	
7b. 1SI P-1B fails to start automatically						X	X		If you already have o train it the other critical?	
					2	3	3	0		

Facility: North Anna			Scenario: 3					Exam Date: 6/6/2022	
1	2	3	4	5	6	7	8	9	10
Event	Realism/Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scen. Overlap	U/E/S	Explanation
1. Transfer bus	2							S	Sat pending validation
2. 1-EG-RV-602HB lifts	2				X			S	No RO verifiable actions TS only event, Sat pending validation
3. 1-CC-P-1A trips	2				X			S	Sat pending Validation
4. 1-CH-PT-1145 fails low	2				X			S	TS will possibly be evaluated post scenario, Sat pending validation
5. 1-CH-HCV-1201 fails to open	2					X		S	Sat pending validation,
6. LBLOCA								E	Rx trip IMA are these the verifiable actions associated with this or is ti something else as you are taking credit for the SI stuff for other malfunctions.
6a. 1-SI-MOV-1867A fails open						X			Criteria for CT-1? It would be helpful if in the write up it shows how the CT meets the criteria of the NUREG.
6b. 1-CH-P-1B fails to start									Do we have a better value for the critical task, need to verify during validation week.

7. 1- RS-E-1A tube leak						X			Need to have a real bounding criteria for CT-2 why is securing the redundant recirc pumps prior to completion to CT-2 required? This needs to be evaluated during prep week.
					3	2		0	

General comments for all CT's need to include why the CT is a CT per the NUREG in the write up. If at all possible need to have a parameter for the bounding criteria for all CT's very much preferred not to be prior to transition. Should be prior to lockout of only available source of power so it does not occur. Or prior to putting water in the steam lines as the condition is not analyzed. Have hard parameters that are observable in the simulator.

Instructions for Completing This Table:

- 1 Use this table for each scenario for evaluation.
- 2 Check this box if the events are not related (e.g., seismic event followed by a pipe rupture) **OR** if the events do not obey the laws of physics and thermodynamics.
- 3, 4 In columns 3 and 4, check the box if there is **no** verifiable or required action, as applicable. Examples of required actions are as follows: (ES-301, D.5f)
 - opening, closing, and throttling valves
 - starting and stopping equipment
 - raising and lowering level, flow, and pressure
 - making decisions and giving directions
 - acknowledging or verifying key alarms and automatic actions (Uncomplicated events that require no operator action beyond this should **not** be included on the operating test unless they are necessary to set the stage for subsequent events. (Appendix D, B.3).)
- 5 Check this box if the level of difficulty is **not** appropriate.
- 6 Check this box if the event has a TS.
- 7 Check this box if the event has a critical task (CT). If the same CT covers more than one event, check the event where the CT started **only**.
- 8 Check this box if the event overlaps with another event on any of the last two NRC examinations. (Appendix D, C.1.f)
- 9 Based on the reviewer's judgment, is the event as written (U)nacceptable (requiring repair or replacement), in need of (E)nhancement, or (S)atisfactory? Mark the answer in column 9.
- 10 Record any explanations of the events here.

In the shaded boxes, sum the number of check marks in each column.

- In column 1, sum the number of events.
- In columns 2–4, record the total number of check marks for each column.
- In column 5, based on the reviewer's judgement, place a checkmark only if the scenario's LOD is not appropriate.
- In column 6, TS are required to be ≥ 2 for each scenario. (ES-301, D.5.d)
- In column 7, preidentified CTs should be ≥ 2 for each scenario. (Appendix D; ES-301, D.5.d; ES-301-4)
- In column 8, record the number of events not used on the two previous NRC initial licensing exams. A scenario is considered unsatisfactory if there is < 2 new events. (ES-301, D.5.b; Appendix D, C.1.f)
- In column 9, record whether the scenario as written (U)nacceptable, in need of (E)nhancement, or (S)atisfactory from column 11 of the simulator scenario table.

Facility:		Exam Date:								
Scenario	1 Event Totals	2 Events Unsat.	3 TS Total	4 TS Unsat.	5 CT Total	6 CT Unsat.	7 % Unsat. Scenario Elements	8 U/E/S	11 Explanation	
1	9	0	2	0	3	0	0	S		
2	9	0	2	0	3	0	0	S		
3	9	0	3	0	2	0	0	S		

Instructions for Completing This Table:

Check or mark any item(s) requiring comment and explain the issue in the space provided.

1, 3, 5 For each simulator scenario, enter the **total** number of events (column 1), TS entries/actions (column 3), and CTs (column 5).

This number should match the respective scenario from the event-based scenario tables (the sum from columns 1, 6, and 7, respectively).

2, 4, 6 For each simulator scenario, evaluate each event, TS, and CT as (S)atisfactory, (E)nhance, or (U)nsatisfactory based on the following criteria:

- a. Events. Each event is described on a Form ES-D-2, including all switch manipulations, pertinent alarms, and verifiable actions. Event actions are balanced between at-the-controls and balance-of-plant applicants during the scenario. All event-related attributes on Form ES-301-4 are met. Enter the total number of unsatisfactory events in column 2.
- b. TS. A scenario includes at least two TS entries/actions across at least two different events. TS entries and actions are detailed on Form ES-D-2. Enter the total number of unsatisfactory TS entries/actions in column 4. (ES-301, D.5d)
- c. CT. Check that a scenario includes at least two preidentified CTs. This criterion is a target quantitative attribute, not an absolute minimum requirement. Check that each CT is explicitly bounded on Form ES-D-2 with measurable performance standards (see Appendix D). Enter the total number of unsatisfactory CTs in column 6.

7 In column 7, calculate the percentage of unsatisfactory scenario elements: $\left(\frac{2 + 4 + 6}{1 + 3 + 5}\right) 100\%$

8 If the value in column 7 is > 20%, mark the scenario as (U)nsatisfactory in column 8. If column 7 is ≤ 20%, annotate with (E)nhancement or (S)atisfactory.

9 In column 9, explain each unsatisfactory event, TS, and CT. Editorial comments can also be added here.

Save initial review comments and detail subsequent comment resolution so that each exam-bound scenario is marked by a (S)atisfactory resolution on this form.

Site name:		Exam Date:				
OPERATING TEST TOTALS						
	Total	Total Unsatisf.	Total Edits	Total Satisf.	% Unsatisf.	Explanation
Admin. JPMs	9	2	2	5	22.2	
Sim./In-Plant JPMs	10	0	4	6	0	
Scenarios	3	0	3	0	0	
Op. Test Totals:					9.5%	

Instructions for Completing This Table:

Update data for this table from quality reviews and totals in the previous tables and then calculate the percentage of total items that are unsatisfactory and give an explanation in the space provided.

1. Enter the total number of items submitted for the operating test in the "Total" column. For example, if nine administrative JPMs were submitted, enter "9" in the "Total" items column for administrative JPMs. For scenarios, enter the total number of simulator scenarios.
2. Enter the total number of (U)nsatisfactory JPMs and scenarios from the two JPMs column 5 and simulator scenarios column 8 in the previous tables. Provide an explanation in the space provided.
3. Enter totals for (E)nhancements needed and (S)atisfactory JPMs and scenarios from the previous tables. This task is for tracking only.
4. Total each column and enter the amounts in the "Op. Test Totals" row.
5. Calculate the percentage of the operating test that is (U)nsatisfactory (Op. Test Total Unsatisf.)/(Op. Test Total) and place this value in the bolded "% Unsatisf." cell.

Refer to ES-501, E.3.a, to rate the overall operating test as follows:
 - satisfactory, if the "Op. Test Total" "% Unsatisf." is ≤ 20%
 - unsatisfactory, if "Op. Test Total" "% Unsatisf." is > 20%
6. Update this table and the tables above with post-exam changes if the "as-administered" operating test required content changes, including the following:
 - The JPM performance standards were incorrect.
 - The administrative JPM tasks/keys were incorrect.
 - CTs were incorrect in the scenarios (not including postscenario critical tasks defined in Appendix D).
 - The EOP strategy was incorrect in a scenario(s).
 - TS entries/actions were determined to be incorrect in a scenario(s).

See attached pages for post validation comments.

NORTH Anna 2022 OP TEST Post Validation Comments

- RO A1 ✓ Give Entire Procedures
- ✓ Pg 7 Step 5 insert ± 0.025 for -6.75
 - ✓ Pg 8 Step 6 Same
 - ✓ Pg 9 Step 8 $\pm .1$ for 5.7
 - ✓ Add \pm in Key
 - ✓ On Graphs Circle Point on graphs

Changes
made

- RO A2 ✓ Change I/G and time and Verbage
- ✓ on Key add Values above Step 6 of Att 14
 - ✓ to Look Same as Step 4.

Changes
Made

- RO A3 ✓ Remove Box on Applicant Key
- ✓ Step Task Standard insert Value # and
 - ✓ say Using Station Dwg's
 - ✓ Step 1 Not Critical
 - ✓ Step 2 Split into 3 Steps all critical
 - ✓ Evaluator Note can be performed in any order

Changes
Made

RO A-4 - No comments

- SRO A1 ✓ Remove information under 1st line of Initial
Criteria

Changes
made

- SRO A-2 ✓ Change Cue - Verbage Add Station Procedures
- ✓ Determine the following
 - ✓ Remove VPAP from Top and put Evaluator
Note VPAP-302 location

Changes
Made

- SRO A-3 Task STANDARD insert Value # in what
was wrong and correct

Changes
made

- SRO A-4 ✓ Worker Vice Woman and SAE for IR
- ✓ Typo Pregnancy on page 6

Changes
Made

SRO A-5 ✓ Modify Cue Sheet See Copied

Change Made

✓ Split Step 1 into 2 steps Both Critical

Sim A ✓ Step Cue Continue in AP in effect

Change Made

✓ Step 10 IMP-IN NOT Critical

✓ Terminate Ramp within 1.5°

Sim B ✓ Give Completed Section 5.1 to applicant

Change Made

✓ Previously Setting Removed from Cue and
✓ give turn over Sheet

✓ Task Standard Remove I-CH-HCU-1200B

✓ Step 15 1557 to "B" not "C" also in Note

Sim C Step 10 Determine and include what

Change Made

✓ Max Spang is (We Expect Applicant to -----)

Sim D ✓ Validation time 20 min

Changes Made

✓ Step 4 Typo 'Secured'

✓ Step 14 "Com RHR Does NOT Sound Normal"

Sim E ✓ Validation 30 min

✓ Step 1 Add Pulitted Steps

✓ Step 2 include Bleed and Feed Criteria

✓ Step 3 under d operator will need to close
values

Note: Security RCP's only critical portion
of Step

May Dispatch Field Action / AP

✓ Step 5 need to add 150C and A open

✓ Step 6 Not Critical Note ≈ 20%

✓ Step 8 Remove per Cue Sheet

✓ Step 13 Add Note May Perform or Just go
to Manual to Release

Changes Made

Sim E ^{Continued}

✓ Step 14 - As long as A/B open this is
May open

Changes
Made

✓ Step 19 May not close may throttle to stop
operator Note another operator will address
SI

Sim F - Cue Simply Start Continue with Step 7
of 1 ECA 1.1

✓ Step 2 Critical

Changes
Made

✓ Step 4 insert table for Examiner

~~Remove~~ an required Remove Remain

✓ Step 6 Add Actual pump #

Sim G Page 2 Task Remove the

Changes
Made

Standard N-44 and 99.5 to 100%

✓ Step 7 99.5 change to 100%

Sim H ✓ Reator already Tripped IOT complete

✓ Continue with AP-39

Change
Made

✓ Task Standard Remove will Tap Rr

✓ Step 2 Removed

✓ Step 15 CAPSTR RNO Flow Path

Plant I step BRR open Free Spinning No Resistance

Change
Made

in operator Note No Valve Movement

✓ Plant J - ~~No change~~ ~~if Asked BRR open~~ No Change

✓ Plant K - Step 5/6 BRR already open

↳ Did NOT Change Because this is
Normal Cue for N/A JPM's

- All Change Mode

Sim 2

Turnover Speed - Remove 1" to 2" into ~~Feed~~ Short

- ✓ Add Mode Change checklist complete
- ✓ Add Diesel Air Compressor out of Service or something out of Service all Turn over's

✓ Event 1 pg 12 insert BOP Manual control of Feedwater

Event 2 Step 5 Stabilize @ 3% Remove Right hand side stuff
Step 7 add the other Steps

✓ EVENT 3 - Ensure light is disable on Sim Set up

✓ New Event 4 - Operator Action Mirror AR-C-C6

✓ Event 5 old 4 - Header on page 17 Mislabelled

Event 7 old 6 - Remove OS for IH-EDG

✓ pg - 23 Step 5 update Boundary Condition for CT-1

- Move Note to Make More obvious

✓ pg 25 CAP-1-5 dont apply
May Enter AP-10

✓ pg 26 ES 0.1 add some Steps until Next Event
May isolate AFM Based on S/G level

✓ Event 8 old 7

- Keep CT-2 Boundary Criteria Remove CT-3

✓ Step 5 pg 29 Page # Update as Required

✓ Step 7 add level criteria vice #TW flow

✓ Step 8 Change YES to No add Step that closes MS TRIP/Bypass valves

Sim 2

- ✓ put 'c' Power Controller on Step 3
- ✓ pg 31 Step 9 Remove B0 is not Bad Stuff
- ✓ Step 12 - Add Required Step about light (lit not lit)
- ✓ Step 17 - look at Cell level for CT Boundary Condition
 ✓ (Make sure this Data is captured or available for Examiners)
- ✓ Step 19 level Criteria
- ✓ Step 22 RO should Not need to throttle
- ✓ pg 34 Change B to C attach B vice 7

Sim 2

Outline old D-1

✓ Remove CT-3

- 1 Distribution SRO-R, RO-R, BOP N
- 2 SRO-C, BOP-C
- 3 SRO TS
- 4 (New) RO-C, SRO C
- 5 BOP-C SRO-C SRO-TS
- 6 RO-C SRO-C
- M - All
- M - All
- 9 - RO-C
- 10 - BOP-C

Sim 1 Turnover - Normal swap place in auto ✓

✓ Event 1 - Put 1CH-P-1C in PTL Stop on left

✓ Event 2 Step 3 - add these Steps

✓ Event 3 (New) Develop operator Actions (Verify TR actions)

✓ Event-4 (New) Develop operator Action

✓ Event 5 Bold Titles make transitions Clear

✓ Step 15 list Values

✓ page 23 update Boundary Conditions

✓ page 25 - Ramp action / Boration back of guide

✓ Event 6 Step 8 - put info in Back of Guide

Event 8 Simul ✓ Cop 1-5 not 1-4

✓ page Number Update

✓ page 33 capture APW flow option

✓ pg 35 Remove CT-4

✓ pg 37 Remove CT-4

Sim 7 Old D-1

1 N SRO/RO

2

3

4

5

6 RO-R Bor-N SRO R

Sim 3 Turn over RT-80 U2 SRO ✓

E1 ✓ Local action Step 5.6.9

E-4 ✓ Put T.S. in Guide for Post Run Evaluation

E-5 ✓ Add Att. 1 Back and page

✓ Step 10 Capture GOTO E-0 while Continuing Procedure

E7 Annotate what is a verifiable action for what event example Step 6 is 7a VA.

✓ pg 26, 27 Bold Procedure

pg 28 insert Steps or Reference CAP-3

pg XXX

pg 30 Step 2: add Steps for Chasing Generator Not faulted

pg 35 Page # update

Sim 3 ✓ Old D-1

Form 4.1-PWR Pressurized-Water Reactor Examination Outline

Facility: North Anna RO Outline															Date of Exam: June 15, 2022		
Tier	Group	RO K/A Category Points												SRO-Only Points			
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Total	A2	G	Total	
1. Emergency and Abnormal Plant Evolution	1	3	2	3	N/A			3	4	N/A			3	18			
	2	1	2	2	N/A			1	1	N/A			1	8			
	Tier Totals	4	4	5	N/A			4	5	N/A			4	26			
2. Plant Systems	1	2	2	2	3	3	3	3	2	2	3	3	28				
	2	1	1	1	1	1	1	1	0	1	1	0	9				
	Tier Totals	3	3	3	4	4	4	4	2	3	4	3	37				
3. Generic Knowledge and Abilities Categories	CO			EC			RC		EM			6	CO	EC	RC	EM	
	2			2			1		1								
4. Theory	Reactor Theory				Thermodynamics				6								
	3				3												

Notes: CO = Conduct of Operations; EC = Equipment Control; RC = Radiation Control;
EM = Emergency Procedures/Plan

- * These systems/evolutions may be eliminated from the sample when Revision 2 of the K/A catalog is used to develop the sample plan
- ** These systems/evolutions are only included as part of the sample (as applicable to the facility) when Revision 2 of the K/A catalog is used to develop the sample plan

Emergency and Abnormal Plant Evolutions—Tier 1/Group 1 (RO/SRO)

E/APE # / Name	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 (EPE 7; BW E02&E10; CE E02) Reactor Trip, Stabilization, Recovery				X			EA1.02: Ability to operate and/or monitor the following as they apply to a Reactor Trip: MFW system (CFR: 41.7 / 45.5 / 45.6)		
000008 (APE 8) Pressurizer Vapor Space Accident									
000009 (EPE 9) Small-Break LOCA					X		EA2.01: Ability to determine and/or interpret the following as they apply to a Small-Break LOCA: Actions to be taken, based on RCS temperature and pressure, saturated, and superheated (CFR: 43.5 / 45.13)	4.0	2
000011 (EPE 11) Large-Break LOCA						X	2.1.28 Knowledge of the purpose and function of major system components and controls (CFR: 41.7)	4.1	3
000015 (APE 15) Reactor Coolant Pump Malfunctions	X						AK1.06: Knowledge of the operational implications and/or cause and effect relationships of the following as they apply to Reactor Coolant Pump Malfunctions: RCP flywheel (CFR: 41.8 / 41.10 / 45.3)	3.3	4
000022 (APE 22) Loss of Reactor Coolant Makeup					X		AA2.03: Ability to determine and/or interpret the following as they apply to Loss of Reactor Coolant Makeup: Failures of flow control valve or controller (CFR: 43.5 / 45.13)	3.5	5
000025 (APE 25) Loss of Residual Heat Removal System			X				AK3.05: Knowledge of the reasons for the following responses and/or actions as they apply to the Loss of the Residual Heat Removal System: Isolating containment (CFR: 41.5 / 41.10 / 45.6 / 45.13)	3.8	6
000026 (APE 26) Loss of Component Cooling Water				X			AA1.06: Ability to operate and/or monitor the following as they apply to Loss of Component Cooling Water: Control of flow rates to components cooled by the CCWS (CFR: 41.5 / 41.7 / 45.5 to 45.8)	3.1	7
000027 (APE 27) Pressurizer Pressure Control System Malfunction					X		AA2.09: Ability to determine and/or interpret the following as they apply to a Pressurizer Pressure Control System Malfunction: Reactor Power (CFR: 43.5 / 45.13)	4.0	8
000029 (EPE 29) Anticipated Transient Without Scram						X	2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation (CFR: 41.5 / 43.5 / 45.12 / 45.13)	4.4	9
000038 (EPE 38) Steam Generator Tube Rupture	X						EK1.10: Knowledge of the operational implications and/or cause and effect relationships of the following as they apply to a Steam Generator Tube Rupture: Nitrogen-16 detector behavior after a trip or during plant shutdown (CFR: 41.5 / 41.7 / 45.7 / 45.8 / 45.9)	3.6	10
000040 (APE 40; BW E05; CE E05; W E12) Steam Line Rupture—Excessive Heat Transfer		X					AK2.20: Knowledge of the relationship between a Steam line Rupture and the following systems or components: AFW system (CFR: 41.7 / 45.7)	3.8	11

000054 (APE 54; CE E06) Loss of Main Feedwater			X				AK3.07: Knowledge of the reasons for the following responses and/or actions as they apply to Loss of Main Feedwater: Feeding a hot, dry S/G (CFR: 41.5,41.10 / 45.6 / 45.13)	3.9	12
000055 (EPE 55) Station Blackout									
000056 (APE 56) Loss of Offsite Power									
000057 (APE 57) Loss of Vital AC Instrument Bus				X			AA1.07: Ability to operate and/or monitor the following as they apply to Loss of Vital AC Electrical Instrument Bus: Interlocks in effect on loss of AC vital electrical instrument bus that must be bypassed to restore normal equipment operation (CFR: 41.7 / 45.5 / 45.6)	3.7	13
000058 (APE 58) Loss of DC Power					X		AA2.03: Ability to determine and/or interpret the following as they apply to Loss of DC Power: Impact on ability to operate and monitor plant systems (CFR: 43.5 / 45.13)	4.0	14
000062 (APE 62) Loss of Service Water						X	2.1.20 Ability to interpret and execute procedure steps (CFR: 41.10 / 43.5 / 45.12)	4.6	15
000065 (APE 65) Loss of Instrument Air	X						AK1.03: Knowledge of the operational implications and/or cause and effect relationships of the following as they apply to Loss of Instrument Air: Failure modes of air-operated equipment (CFR: 41.8 / 41.10 / 45.3)	3.7	16
000077 (APE 77) Generator Voltage and Electric Grid Disturbances									
(W E04) LOCA Outside Containment		X					EK2.05: Knowledge of the relationship between LOCA Outside Containment and the following systems or components: RCS leakage paths to outside containment (CFR: 41.7 / 41.8 / 45.2 / 45.4)	4.0	17
(W E11) Loss of Emergency Coolant Recirculation									
(BW E04; W E05) Inadequate Heat Transfer—Loss of Secondary Heat Sink			X				EK3.05: Knowledge of the reasons for the following responses and/or actions as they apply to Loss of Secondary Heat Sink: Checking for RCS bleed and feed criteria (CFR: 41.5 / 41.10 / 45.6 / 45.13)	4.1	18
K/A Category Totals:	3	2	3	3	4	3	Group Point Total:		18

(W E13) Steam Generator Overpressure									
(W E15) Containment Flooding									
(W E16) High Containment Radiation			X				EK3.06: Knowledge of the reasons for the following responses and/or actions as they apply to High Containment Radiation: Placing containment atmosphere filtration system in service (CFR: 41.5 / 41.10 / 45.6 / 45.13)	3.3	27
(BW A01) Plant Runback									
(BW A02 & A03) Loss of NNI-X/Y									
(BW A04) Turbine Trip									
(BW A05) Emergency Diesel Actuation									
(BW A07) Flooding									
(BW E03) Inadequate Subcooling Margin									
(BW E08; W E03) LOCA Cooldown—Depressurization									
(BW E09; CE A13**; W E09 & E10) Natural Circulation									
(BW E13 & E14) EOP Rules and Enclosures									
(CE A11**, W E08) RCS Overcooling—Pressurized Thermal Shock									
(CE A16) Excess RCS Leakage									
(CE E09) Functional Recovery									
(CE E13*) Loss of Forced Circulation/LOOP/Blackout									
K/A Category Point Totals:	1	2	2	1	1	1	Group Point Total:		8

Form 4.1-PWR	PWR Examination Outline Plant Systems—Tier 2/Group 1 (RO/SRO)										Page 4			
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
003 (SF4P RCP) Reactor Coolant Pump											X	A4.03: Ability to manually operate and/or monitor in the control room: RCP lift oil pump and lube oil pump motor controls (CFR: 41.7 / 45.5 to 45.8)	3.2	28
004 (SF1; SF2 CVCS) Chemical and Volume Control											X	2.2.39 Knowledge of less than or equal to 1 hour TS action statements (does not include action statements of 1 hour or less that follow the expiration of a completion time for a TS condition for which an action statement has already been entered) (CFR: 41.7 / 41.10 / 43.2 / 45.13)	3.9	29
005 (SF4P RHR) Residual Heat Removal	X											K1.06: Knowledge of the physical connections and/or cause and effect relationships between the Residual Heat Removal System and the following systems: ECCS (CFR: 41.2 to 41.9 / 45.7 / 45.8)	4.4	30
006 (SF2; SF3 ECCS) Emergency Core Cooling		X										K2.02: Knowledge of electrical power supplies to the following: Valve operators for safety injection tanks (CFR: 41.7)	3.2	31
006 (SF2; SF3 ECCS) Emergency Core Cooling						X						K6.02: Knowledge of the effect of the following plant conditions, system malfunctions, or component malfunctions on the Emergency Core Cooling System: Safety injection tanks (CFR: 41.7 / 45.7)	3.9	32
007 (SF5 PRTS) Pressurizer Relief/Quench Tank			X									K3.01: Knowledge of the effect that a loss or malfunction of the Pressurizer Relief Tank/Quench Tank System will have on the following systems or system parameters: Containment (CFR: 41.7 and 41.9)	3.4	33
008 (SF8 CCW) Component Cooling Water				X								K4.09: Knowledge of Component Cooling Water System design features and/or interlocks that provide for the following: The "standby" feature for the CCW pumps (CFR: 41.7)	3.5	34
010 (SF3 PZR PCS) Pressurizer Pressure Control					X							K5.04: Knowledge of the operational implications or cause and effect relationships of the following concepts as they apply to the Pressurizer Pressure Control System: Effects of temperature change during solid operation (CFR: 41.5 / 45.7)	3.9	35
010 (SF3 PZR PCS) Pressurizer Pressure Control											X	2.4.21 Knowledge of the parameters and logic used to assess the status of emergency operating procedures critical safety functions or shutdown critical safety functions (CFR: 41.7 / 43.5 / 45.12)	4.0	36
012 (SF7 RPS) Reactor Protection							X					A1.02: Ability to predict and/or monitor changes in parameters associated with operation of the Reactor Protection System, including: RPS/ESFAS testing one or more trains in test (CFR: 41.5 / 45.5)	3.7	37

012 (SF7 RPS) Reactor Protection										X	A4.07: Ability to manually operate and/or monitor in the control room: M/G set breakers (CFR: 41.7 / 45.5 to 45.8)	3.8	38
013 (SF2 ESFAS) Engineered Safety Features Actuation							X				A1.06: Ability to predict and/or monitor changes in parameters associated with operation of the Engineered Safety Features Actuation System, including: RWST level (CFR: 41.3 to 41.7 / 45.5)	3.8	39
022 (SF5 CCS) Containment Cooling								X			A2.01: Ability to (a) predict the impacts of the following on the Containment Cooling System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operations: CCS component malfunction (CFR: 41.5 / 43.5 / 45.3 / 45.13)	3.7	40
025 (SF5 ICE) Ice Condenser													
026 (SF5 CSS) Containment Spray				X							K5.03: Knowledge of the operational implications or cause and effect relationships of the following concepts as they apply to the Containment Spray System: Stratification of liquids: concentrated sodium hydroxide solution has a higher specific gravity than weak boric acid solution; therefore, the two solutions must be vigorously mixed to make an effective spray (CFR: 41.5 / 45.7)	2.5	41
026 (SF5 CSS) Containment Spray			X								K4.07: Knowledge of Containment Spray System design features and/or interlocks that provide for the following: Adequate level in containment sump for suction (CFR: 41.7)	3.8	42
039 (SF4S MSS) Main and Reheat Steam										X	2.4.34 Knowledge of RO responsibilities outside the main control room during an emergency (CFR: 41.10 / 43.5 / 45.13)	4.2	43
059 (SF4S MFW) Main Feedwater	X										K1.08: Knowledge of the physical connections and/or cause and effect relationships between the Main Feedwater System and the following systems: Heater drains (CFR: 41.2 to 41.9 / 45.7 / 45.8)	3.0	44
061 (SF4S AFW) Auxiliary/Emergency Feedwater		X									K2.01: Knowledge of electrical power supplies to the following: AFW system power-operated valves (CFR: 41.7)	3.6	45
061 (SF4S AFW) Auxiliary/Emergency Feedwater					X						K6.08: Knowledge of the effect of the following plant conditions, system malfunctions, or component malfunctions on the Auxiliary/Emergency Feedwater System: Bearing oil supply for turbine-driven pumps (CFR: 41.7 / 45.5 to 45.8)	2.8	46
062 (SF6 ED AC) AC Electrical Distribution			X								K3.07: Knowledge of the effect that a loss or malfunction of the AC Electrical Distribution System will have on the following systems or system parameters: Non-Class 1E AC distribution system (CFR: 41.7 / 45.6)	3.2	47

Form 4.1-PWR		PWR Examination Outline										Page 5		
Plant Systems—Tier 2/Group 2 (RO/SRO)														
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	IR	#
001 (SF1 CRDS) Control Rod Drive														
002 (SF2; SF4P RCS) Reactor Coolant														
011 (SF2 PZR LCS) Pressurizer Level Control														
014 (SF1 RPI) Rod Position Indication					X							K6.06: Knowledge of the effect of the following plant conditions, system malfunctions, or component malfunctions on the Rod Position Indication System: Group demand position indication (CFR: 41.6 / 41.7 / 45.7)	3.4	56
015 (SF7 NI) Nuclear Instrumentation	X											K1.08: Knowledge of the physical connections and/or cause and effect relationships between the Nuclear Instrumentation System and the following systems: RCS (CFR: 41.2 to 41.9 / 45.7 / 45.8)	3.4	57
016 (SF7 NNI) Nonnuclear Instrumentation			X									K4.01: Knowledge of Nonnuclear Instrumentation System design features and/or interlocks that provide for the following: Reading of NNI system channel values outside control room (CFR: 41.7)	3.0	58
017 (SF7 ITM) In-Core Temperature Monitor														
027 (SF5 CIRS) Containment Iodine Removal														
028 (SF5 HRPS) Hydrogen Recombiner and Purge Control														
029 (SF8 CPS) Containment Purge														
033 (SF8 SFPCS) Spent Fuel Pool Cooling														
034 (SF8 FHS) Fuel Handling Equipment														
035 (SF 4P SG) Steam Generator														
041 (SF4S SDS) Steam Dump/Turbine Bypass Control														
045 (SF 4S MT/G) Main Turbine Generator										X		A4.05: Ability to manually operate and/or monitor in the control room: Electrical (MT/G) and steam system adjustments (CFR: 41.7 / 45.5 to 45.8)	3.3	60
055 (SF4S CARS) Condenser Air Removal														
056 (SF4S CDS) Condensate							X					A1.06: Ability to predict and/or monitor changes in parameters associated with operation of the Condensate System, including: Heater parameters (temperature, pressure, flow, and level) (CFR: 41.5 / 45.5)	2.7	61
068 (SF9 LRS) Liquid Radwaste														
071 (SF9 WGS) Waste Gas Disposal				X								K5.07: Knowledge of the operational implications or cause and effect relationships of the following concepts as they apply to the Waste Gas Disposal System: Sampling oxygen, hydrogen, and nitrogen	3.3	62

Form 4.1-COMMON Common Examination Outline

Facility: North Anna		Date of Exam: June 15, 2022				
Generic Knowledge and Abilities—Tier 3 (RO/SRO)						
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.14	Knowledge of criteria or conditions that require plantwide announcements, such as pump starts, reactor trips, and mode changes. CFR: 41.10 / 43.5 / 45.12	3.1	66		
	2.1.4	Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, “no-solo” operation, and maintenance of active license status, 10 CFR Part 55. CFR: 41.10 / 43.2	3.3	67		
	Subtotal		N/A	2	N/A	
2. Equipment Control	2.2.6	Knowledge of the process for making changes to procedures. CFR: 41.10 / 45.13	3.0	68		
	2.2.13	Knowledge of tagging and clearance procedures. CFR: 41.10 / 45.13	4.1	69		
	Subtotal		N/A	2	N/A	
3. Radiation Control	2.3.5	Ability to use RMSs, such as fixed radiation monitors and alarms or personnel monitoring equipment. CFR: 41.11 / 41.12 / 43.4 / 45.9	2.9	70		
	Subtotal		N/A	1	N/A	
4. Emergency Procedures/ Plan	2.4.25	Knowledge of fire protection procedures. CFR: 41.10 / 43.5 / 45.13	3.3	74		
	Subtotal		N/A	1	N/A	
Tier 3 Point Total				6		7
Theory—Tier 4 (RO)						
Category	K/A #	Topic	RO			
			IR	#		
Reactor Theory	6	192001 Neutrons: K1.02 Define prompt and delayed neutrons	2.5	26		
	6	192003 Reactor Kinetics and Neutron Sources: K1.08 Explain the prompt critical, prompt jump, and prompt drop	2.9	59		

	6	192004 Reactivity Coefficients: Describe the effect on boron reactivity worth from changes in the following: K1.15 -- moderator temperature	2.9	71
	Subtotal		N/A	3
Thermodynamics	6	193003 Steam: K1.02 Describe effects of pressure and temperature on density or specific volume of a liquid	2.5	72
	6	193004 Thermodynamic Processes: Throttling and the Throttling Process: K1.15 Determine the exit conditions for a throttling process based on the use of steam and/or water	2.8	73
	6	193007 Heat Transfer: K1.08 Calculate core thermal power using a simplified heat balance	3.4	75
	Subtotal		N/A	3
Tier 4 Point Total				6

Form 4.1-PWR Pressurized-Water Reactor Examination Outline

Facility: North Anna SRO outline															Date of Exam: June 15, 2022			
Tier	Group	RO K/A Category Points											SRO-Only Points					
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	Total	A2	G	Total		
1. Emergency and Abnormal Plant Evolutions	1													18	3	3	6	
	2				N/A					N/A				8	2	2	4	
	Tier Totals													26	5	5	10	
2. Plant Systems	1													28	3	2	5	
	2													9	1	1	1	3
	Tier Totals													37	5	3	8	
3. Generic Knowledge and Abilities Categories	CO	EC			RC	EM						6	CO	EC	RC	EM	7	
													2	2	1	2		
4. Theory	Reactor Theory	Thermodynamics										6						

Notes: CO = Conduct of Operations; EC = Equipment Control; RC = Radiation Control
EM = Emergency Procedures/Plan

* These systems/evolutions may be eliminated from the sample when Revision 2 of the K/A catalog is used to develop the sample plan

** These systems/evolutions are only included as part of the sample (as applicable to the facility) when Revision 2 of the K/A catalog is used to develop the sample plan

Emergency and Abnormal Plant Evolutions—Tier 1/Group 1 (RO/SRO)

E/APE # / Name	K1	K2	K3	A1	A2	G	K/A Topic(s)	IR	#
000007 (EPE 7; BW E02&E10; CE E02) Reactor Trip, Stabilization, Recovery									
000008 (APE 8) Pressurizer Vapor Space Accident					X		AA2.06: Ability to determine and/or interpret the following as they apply to a Pressurizer Vapor Space Accident: PORV logic control under low-pressure conditions (CFR: 43.5 / 45.13)	3.4	76
000009 (EPE 9) Small-Break LOCA									
000011 (EPE 11) Large-Break LOCA									
000015 (APE 15) Reactor Coolant Pump Malfunctions									
000022 (APE 22) Loss of Reactor Coolant Makeup									
000025 (APE 25) Loss of Residual Heat Removal System									
000026 (APE 26) Loss of Component Cooling Water									
000027 (APE 27) Pressurizer Pressure Control System Malfunction						X	2.1.19 Ability to use available indications to evaluate system or component status (CFR: 41.10 / 45.12)	3.8	77
000029 (EPE 29) Anticipated Transient Without Scram									
000038 (EPE 38) Steam Generator Tube Rupture									
000040 (APE 40; BW E05; CE E05; W E12) Steam Line Rupture—Excessive Heat Transfer									
000054 (APE 54; CE E06) Loss of Main Feedwater									
000055 (EPE 55) Station Blackout						X	2.4.41 Knowledge of the emergency action level thresholds and classifications (SRO Only) (CFR: 43.5 / 45.11)	4.6	78
000056 (APE 56) Loss of Offsite Power					X		AA2.49: Ability to determine and/or interpret the following as they apply to Loss of Offsite Power: Nonessential equipment to be secured to avoid overload of EDGs (CFR: 43.5 / 45.13)	3.5	79
000057 (APE 57) Loss of Vital AC Instrument Bus									
000058 (APE 58) Loss of DC Power									
000062 (APE 62) Loss of Service Water									
000065 (APE 65) Loss of Instrument Air									
000077 (APE 77) Generator Voltage and Electric Grid Disturbances						X	2.2.37 Ability to determine operability or availability of safety-related equipment (SRO Only) (CFR: 43.2 / 43.5 / 45.12)	4.6	80

(W E04) LOCA Outside Containment										
(W E11) Loss of Emergency Coolant Recirculation					X		EA2.03 Ability to determine and/or interpret the following as they apply to Loss of Emergency Coolant Recirculation: Indications of sump blockage (CFR: 41.10 / 43.5 / 45.13)	4.3	81	
(BW E04; W E05) Inadequate Heat Transfer—Loss of Secondary Heat Sink										
K/A Category Totals:					3	3	Group Point Total:			6

(BW A07) Flooding										
(BW E03) Inadequate Subcooling Margin										
(BW E08; W E03) LOCA Cooldown—Depressurization										
(BW E09; CE A13**; W E09 & E10) Natural Circulation										
(BW E13 & E14) EOP Rules and Enclosures										
(CE A11**; W E08) RCS Overcooling—Pressurized Thermal Shock										
(CE A16) Excess RCS Leakage										
(CE E09) Functional Recovery										
(CE E13*) Loss of Forced Circulation/LOOP/Blackout										
K/A Category Point Totals:						2	2	Group Point Total:		4

Form 4.1-COMMON Common Examination Outline

Facility: North Anna		Date of Exam: 6/13/2022				
Generic Knowledge and Abilities—Tier 3 (RO/SRO)						
Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements (CFR: 41.10 / 43.10 / 45.13)			4.2	94
	2.1.42	Knowledge of new and spent fuel movement procedures (SRO Only) (CFR: 43.7 / 45.13)			3.4	95
	Subtotal		N/A		N/A	
2. Equipment Control	2.2.5	Knowledge of the process for making design or operating changes to the facility, such as 10 CFR 50.59, "Changes, Tests and Experiments," screening and evaluation processes, administrative processes for temporary modifications, disabling annunciators, or installation of temporary equipment (CFR: 41.10 /43.3 / 45.13)			3.2	96
	2.2.17	Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator (CFR: 41.10 / 43.5 / 45.13)			3.8	97
	Subtotal		N/A		N/A	
3. Radiation Control	2.3.14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities, such as analysis and interpretation of radiation and activity readings as they pertain to administrative, normal, abnormal, and emergency procedures or to analysis and interpretation of coolant activity, including comparison to emergency plan or regulatory limits (SRO Only) (CFR: 43.4 / 45.10)			3.8	98
	Subtotal		N/A		N/A	
4. Emergency Procedures/ Plan	2.4.52	Knowledge of the lines of authority during implementation of the emergency plan, emergency plan implementing procedures, emergency operating procedures, or severe accident guidelines (CFR: 41.10 / 45.13)			4.0	99
	2.4.44	Knowledge of emergency plan implementing procedures protective action recommendations (SRO Only) (CFR: 41.10 / 41.12 / 43.5 / 45.11)			4.4	100
	Subtotal		N/A		N/A	
Tier 3 Point Total				6		7

Form 4.1-1 Record of Rejected Knowledge and Abilities North Anna, June 2022

Refer to Examination Standard (ES)-4.2, "Developing Written Examinations," Section B.3, for deviations from the approved written examination outline.

Tier/Group	Randomly Selected K/A	Reason for Rejection
Tier 2/Group 1	008 (SF8 CCW) Component Cooling Water; K4.07	<p>NAPS doesn't have swing power supplies for the CC Pumps. We have a stub bus breaker which isolates the CC and RHR Pump breakers on each 4160V emergency bus. The stub-bus breaker has interlocks associated with it, but none that apply to the CC Pump breakers. It looks at the RHR Pump breakers.</p> <p>CE Randomly selected new K/A from Topic 008. K/A: K4.09: Knowledge of Component Cooling Water System design features and/or interlocks that provide for the following: The "standby" feature for the CCW pumps</p> <p>CFR: 41.5</p>
Tier 1/Group 2	Removed from Exam due to Revision 12 of NUREG 1021	<p>000078 (APE 78*) RCS Leak</p> <p>AA1.04: Ability to operate and /or monitor the following as they apply to Reactor Coolant System Leak:</p> <p>CVCS</p> <p>CFR: 41.7 / 45.5 / 45.6</p> <p>K/A was removed to modify sample plan for Revision 12 of NUREG 1021</p>
Tier 2/Group 2	Removed from Exam due to Revision 12 of NUREG 1021	<p>029(SFS CP3) Containment Purge</p> <p>A3.01: Ability to monitor automatic features of Containment Purge System, including:</p> <p>CPS isolation</p> <p>CFR 41.7 / 45.5 / 45.8</p>
Generic Equipment Control	Removed from Exam due to Revision 12 of NUREG 1021	<p>2.2.14:</p> <p>Knowledge of the process for controlling equipment configuration or status.</p> <p>CFR: 41.10 / 43.3 / 45.6</p>

Generic Radiation Control	Removed from Exam due to Revision 12 of NUREG 1021	2.3.12: Knowledge of radiological safety principles and procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, or alignment of filters. CFR 41.12 / 43.4 / 45.9 / 45.10
Generic Emergency Procedures /Plan	Removed from Exam due to Revision 12 of NUREG 1021	2.4.3: Ability to identify post-accident instrumentation. CFR 41.6 / 45.8
Generic Emergency Procedures /Plan	Removed from Exam due to Revision 12 of NUREG 1021	2.4.30: Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator. CFR 41.10/ 43.5 / 45.11
Reactor Theory	Added to Exam due to Revision 12 of NUREG 2021	192001 Neutrons: K1.02 Define prompt and delayed neutrons
Reactor Theory	Added to Exam due to Revision 12 of NUREG 2021	192003 Reactor Kinetics and Neutron Sources: K1.08 Explain the prompt critical, prompt jump, and prompt drop
Reactor Theory	Added to Exam due to Revision 12 of NUREG 2021	192004 Reactivity Coefficients: Describe the effect on boron reactivity worth from changes in the following: K1.15 -- moderator temperature
Thermodynamics	Added to Exam due to Revision 12 of NUREG 2021	193003 Steam: K1.02 Describe effects of pressure and temperature on density or specific volume of a liquid
Thermodynamics	Added to Exam due to Revision 12 of NUREG 2021	193004 Thermodynamic Processes: Throttling and the Throttling Process: K1.15 Determine the exit conditions for a throttling process based on the use of steam and/or water

Thermodynamics	Added to Exam due to Revision 12 of NUREG 2021	193007 Heat Transfer: K1.08 Calculate core thermal power using a simplified heat balance
Tier 1/Group 1	(W E04) LOCA outside containment: EK2.08	K/A replaced with (W E04) LOCA outside containment: EK2.05 due to facility type. Original K/A sampled was for a B&W type reactor
Tier 1/Group 1	(BW E04; W E05) Inadequate Heat Transfer—Loss of Secondary Heat Sink	Original K/A sampled was for a different reactor type EK3.08. New K/A selected for Westinghouse is EK3.05
Tier 2/ Group 1	006 (SF2; SF3 ECCS) Emergency Core Cooling	Corrected K/A cut and past error K6.02: Knowledge of the effect of the following plant conditions, system malfunctions, or component malfunctions on the Emergency Core Cooling System: Safety injection tanks
Tier 2/ Group 1	063 (SF6 ED DC) DC Electrical Distribution	K4.04: Knowledge of DC Electrical Distribution System design features and/or interlocks that provide for the following: Battery charger trip/shutdown (high voltage) (CFR: 41.7) Replaced with: K4.02: Knowledge of DC Electrical Distribution System design features and/or interlocks that provide for the following: Breaker interlocks, permissive, bypasses, and cross-ties K/A replaced due to not having the function called out in the original K/A in plant design
Tier 1 / Group 1 (SRO)	(W E11) Loss of Emergency Coolant Recirculation	EA2.03 Corrected cut and paste error remained the same K/A only corrected the wording.
Tier 1 / Group 1	APE-027 Pressurizer Pressure Control System Malfunction	AA2.08: Ability to determine and/or interpret the following as they apply to a Pressurizer Pressure Control System Malfunction: Letdown flow indication K/A rejected due to plant design and not able to write a question to it. Chief Examiner randomly selected a different K/A from same area: AA2.09: Ability to determine and/or interpret the following as they apply to a Pressurizer Pressure Control System Malfunction: Reactor Power

Tier 1 / Group 2	000001 (APE 1) Continuous Rod Withdrawal	<p>AK3.02: Knowledge of the reasons for the following responses and/or actions as they apply to Continuous Rod Withdrawal: TS limits on rod operability.</p> <p>K/A rejected due to not being able to write a license level question</p> <p>CE randomly selected AK3.03 of the same topic</p> <p>AK3.03: Knowledge of the reasons for the following responses and/or actions as they apply to Continuous Rod Withdrawal: Tripping the Reactor.</p>
Tier 1/ Group 2	APE: 032 Loss of Source Range Nuclear Instrumentation	<p>AK1.01: Knowledge of the operational implications and/or cause and effect relationships of the following as they apply to Loss of Source Range Nuclear Instrumentation: Effects of voltage changes on performance.</p> <p>K/A Rejected due to inability to write an acceptable question.</p> <p>CE randomly selected new K/A from same topic.</p> <p>AK2.01: Knowledge of the relationship between Loss of Source Range Nuclear Instrumentation and the following systems or components: Power supplies</p>

Form 2.3-4 Written Examination Quality Checklist

Facility: North Anna Power Station		Date of Exam: 06/15/2022		Exam Level: RO <input checked="" type="checkbox"/>		SRO <input checked="" type="checkbox"/>	
Item Description				(Y)es / (N)o			
				a	b*	c#	
1. Questions and answers are technically accurate and applicable to the facility. Each question includes a technical reference.				Yes	70	mark	
2. a. All questions reference NRC knowledge and abilities (K/As) requirements. b. Facility learning objectives are referenced as available. c. All questions include an explanation of the correct answer explanation and a distractor analysis.				Yes	70	mark	
3. Senior reactor operator (SRO) questions test at the SRO license level.				Yes	72	mark	
4. The sampling process was random and systematic. (If more than four reactor operator (RO) or two SRO questions were repeated from the last two NRC licensing exams, including full (100-question) retake examinations, consult the NRC Office of Nuclear Reactor Regulation operator licensing program office.)				Yes	72	mark	
5. Question duplication from the licensee screening/audit exam was controlled as indicated below (check the item that applies) and appears appropriate: <input type="checkbox"/> The audit exam was systematically and randomly developed. <input type="checkbox"/> The audit exam was completed before the license exam was started. <input type="checkbox"/> The examinations were developed independently. <input checked="" type="checkbox"/> The licensee certifies that there is no duplication. <input type="checkbox"/> Other (explain):				Yes	72	mark	
6. Bank use meets limits (no more than 75% from the bank, at least 10% new (at the comprehension/analysis level), and the rest new or modified); enter the actual RO/SRO-only question distribution >				Bank	Modified	New	
				14 / 6	8 / 6	53 / 13	
7. Between 38 and 45 questions of the questions on the RO exam and at least 13 of the questions on the SRO-only portion of the exam are written at the comprehension/analysis level; enter the actual RO/SRO-only question distribution >				Memory		C/A	
				25 / 8		40 / 17	
8. References/handouts provided do not give away answers or aid in the elimination of distractors.				Yes	77	mark	
9. Question content conforms to specific K/A statements in the previously approved examination outline and is appropriate for the K/A statements' assigned tier; deviations are justified.				Yes	77	mark	
10. Question psychometric quality and format meet the instructions and guidelines in ES-4.2.				Yes	77	mark	
11. The exam contains the required number of one-point, multiple-choice items; the total is correct and agrees with the value on the cover sheet.				Yes	77	mark	
a. Author				Printed Name/Signature		Date	
b. Facility Reviewer (*)				N/A		N/A	
c. NRC Reviewer (#)				N/A		N/A	
NRC Chief Examiner				Michael Kennard		4/26/2022	
NRC Regional Supervisor				Gerald McCoy		4/26/2022	
* The facility licensee signature is not applicable for NRC-developed tests.							
# An independent NRC reviewer performs steps in column c. This may be the NRC Chief Examiner if he/she did not develop the written examination under review.							

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna												Date to be Administered: 6/15/2022	
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic			
General Comments:													
1	H	2									N	S	No changes necessary. The only changes were to capitalization and character spacing for formatting concerns (4/19/22). Question Sat
2	H	2									B	S	No changes necessary. The only changes were to capitalization and character spacing for formatting concerns (4/19/22). Question Sat
3	H	2									N	E/S	change the level on the RWST's to one channel at 16% the other three at 17% I need to have a procedural tie in the stem. For example in accordance with 1-ES-1.3 automatic swap over (should/should not) be occurring and manual swap over is required at (<15%/16%). so the correct answer would be should not and <15%. This would test the knowledge of the interlocks and knowledge of the procedure as is expected in a tier 1 question. this would meet the 2nd method to meet the tier 1 FAQ guidance. Followed recommended guidance for RWST Level (one at 16% and 3 at 17%) and changed part 2 to when a manual swapover is required per 1-ES-1.3 (4/19/22). Question is Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022					
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q-K/A				License Level
4	H	3													Maintaining actual heat flux greater than critical heat flux is not credible for answers B and D. what do you think of changing the questions to The RCP flywheels cause the RCPs to coast down (faster/slower) to ensure actual heat flux is less than critical heat flux during a loss of oddsite power event. Without the RCP flywheels the RCS would likely exceed (DNBR/QPTL) answer would then be slower and DNBR. as the QPT should not be an issue as RX has tripped and is no longer applicable. the cahnge would meet the tier 1 criteria 4 in FAQ 4.1.17. Changed the stem and the answers per the guidance given (4/19/22). Questionn Sat
5	H	2													Need to try to get a procedural tie in the question as this is tier 1. What is the abnormal procedure or AR procedure and what is the overall mitigative actions that the RO would take. Per AR/AP XXXX the FCV X or y is failing and the correct action would be to (manual control of/isolate charging or increase let down something like this. this would meet the FAQ criteria 1. Changed part 1 to identify failure (FCV or FT). and then made part 2 identify required action per the AR (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units				Logic
6	F	2												<p>FREE REVIEW QUESTION: Why do you feel it is needed to provide a reference for determining the type of closure is needed, When you are count on using memory for if the reclosure team is required to be on station. In the Stem 1-PT-91 needs to have the noun name of the PT with it. The same goes for 1-AP-11 (Loss of RHR). In the question part one reword the question to "IAW 1-AP-11, Attachment 11 the required isolations for each Containment Hatch are..." If the reasoning for the reference if valid then at the top of the page just put reference provided.</p> <p>Licensee Change: Changed stem significantly, removed the reference, and made all editorial corrections (2/9/22) Changes incorporated and the question is SAT. Changed capitalization and character spacing for formatting concerns (4/19/22). Question Sat</p>
7	M	3									N	S		<p>again for tier 1 questions need to try to have a procedural tie to an AR/AP or EOP to meet the intent of the tier. Maybe tie it to the alarm for the high temperature. This would be a great tier 2 question. We can talk about this as this is an abnormal indication and it otherwise meets the K/A May meet the 4th criteria for Tier 1 in the FAQ. Completely changed the question to focus on controlling CC to the SFP HXs in 0-AP-27. The question cog level changed to memory (4/19/22). Question Sat</p>

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022					
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic				License Level
8	M	3													Tier 1 is supposed to be abnormal and emergency normally procedurally based. This is a systems level question. Can the second half of the question reference the AR or AP such that in accordance with procedure XXX the operator will stabilize pressure by controlling PCV XXX to (35/55%) that would allow it to meet the 1st criteria of tier 1 in the FAQ. Requested a new K/A (APE027AA2.08 to AA2.09) and rewrote the question. The question is now a memory question (4/19/22) Question Sat
9	H	2													No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat
10	H	2													Change Stem of the question to " IAW AR-KG-6 (N-16 RAD DET) the 4 N-16 detectors are considered non-functional at ____ " This is the Note in the AR for this failure. Change distractor D to 20% justified that the alarm will be ramping off between 25 and 20% change would meet the FAQ criteria 1. Changed answer "D" to 20% and added 1-AR-K-G6 to the stem (4/19/22). Question Sat
11	H	3													No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat
12	H	2													No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022						
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		8. Explanation					
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units		Logic	License Level	Q-K/A	6. Source (B/M/N)	7. Status (U/E/S)
13																<p>Tier 1 is supposed to be abnormal or emergency procedure based. Could change the question so it says something like " Rods currently cannot be withdrawn until the (C-2 or C-4) protection interlock is cleared per PROCEDURE AP-4.3? to bypass (NI-42 or 44)." the question would essentially remain the same and meet the K/A. The question would become a 2X2 the change would allow question to meet the tier 1 criteria 1.</p> <p>Changed to the recommended 2x2 format with C-2/C-4 & N-42/N-44 (4/19/22). Question Sat</p> <p>FREE REVIEW QUESTION: in the answer choices C and D the 1-III looks off. I would like to see the H and J indications to see that they look similar. +This is just a format issue no actual issues with the question content.</p> <p>Licensee Change: Performed editorial spacing issues and verbally confirmed with Chief Examiner that the H and J Panels are essentially the same (2/9/22) Question is now SAT. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat</p>
14	H											N	S			<p>For the second half of the distractor is there a method to align Fire Protection to the Main Chillers? Or for that matter is there any other backup source of water besides Bearing Cooling? Answered the Chief Examiner's question regarding backup Chiller cooling and the question was deemed SAT. Made minor changes to capitalization and character spacing for formatting concerns (4/19/22). Question Sat</p>
15	H											N	E/S			<p>For the second half of the distractor is there a method to align Fire Protection to the Main Chillers? Or for that matter is there any other backup source of water besides Bearing Cooling? Answered the Chief Examiner's question regarding backup Chiller cooling and the question was deemed SAT. Made minor changes to capitalization and character spacing for formatting concerns (4/19/22). Question Sat</p>

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q-K/A			
18	H	3												2005 DCNRC exam. I believe the question is really UNSAT as when feed and bleed is established you already have an essentially dry hot steam generator so having distractors to prevent or help the steam generators does not seem plausible. I could buy one distractor saying to maintain steam generator integrity but distractor C not plausible as you are already dry. Another possible distractor would be to extend the time allowed to restore feed as the procedures is always trying to restore feed flow. for a third distractor could be to minimize the heat input into the Reactor building while on feed and bleed. this is true as the longer you wait the higher the pressure and temperature the RCS would get prior to initiating cooling but not the correct answer. Also knowledge of the basis for continuing action steps seems beyond RO level knowledge. As long as the basis is covered in the learning objective i will allow for an RO if your OPS management agrees. meets the tier 1 criteria 1 in the FAQ. Changed the distractors to the recommended changes, added a terminal objective to cover step bases knowledge requirements, and OPs Management approves this bases question (4/19/22). Question Sat
19	M	3												NRC 2001 Farley Exam, this is a tier one question meeting criteria 1 of the FAQ. Where is the basis for the answer located? If it is in the TS basis this my not be an RO level question. I am not sure the learning objectives you have listed apply. you need to have your OPS management agree that this is RO level. Requested a new K/A (APE001 AK3.02 to AK3.03) and rewrote the question (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units				Logic
20	M	3												The only concern is using the basis as part of the question. I see you have a learning objective that clearly says that they are responsible for the information but generally this is SRO level knowledge. Ensure OPS mgmt is in agreement that this is RO level knowledge. Changed the capitalization and character spacing for formatting concerns. OPs Management approves this question (4/19/22). Question Sat
21	H	3												No comments. Deleted "Heat Exchanger" from all part 1 answers and added it to the stem due to redundancy. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
22	H	3									B	S		NRC 2003 Watts Bar, No comments, Meets Tier 1 requirement criteria 4. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
23	M	3												NRC Exam 2002 Watts Bar, The Ka is asking how a change in voltage effects the SR instruments an effective loss of the instrumnt. Suggestions could be to use the loss of High Voltage alarm and get at least part of a 2X2, Alarm 1A-A1. Rewrote the question to include T.S. and AP references to align with Tier 1 FAQ. The question is now a New/Memory (4/19/22). Question is skirting the K/A. Dosnt a high voltage on the source range instrumnts change how it is reading either high or low?
24	H	2												No comments meets tier 1 FAQ criteria 1. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
25	H	2												Small change requested instead of saying only give a value RVLIS Full Range level of 50% in distractor A and C and remove the word ONLY. This would be a more discriminating question and would not lead the applicant to the 1200 F. Added "with 50% RVLIS Full Range" to answers "A" and "C" and deleted ONLY (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022													
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws			8. Explanation											
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic		License Level	Q-K/A	Source (B/M/N)	7. Status (U/E/S)							
26	F	2																				No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat	
27	H	3																					THE NEW SECTION. TO COMMONS GOOD distractors and applicant must understand the mitigative strategy in order to answer. Check the nomenclature to ensure it is correct. Licensee Change: Deleted "l-131" from stem and added "radiation". In anser "C", changed Containment Atmosphere Filtration System to Containment Iodine Filtration Fans for operational validity. (2/9/22) The question is now SAT. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat
28	F	2																					No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22) Question Sat
29	F	2																					I like the 15 min distractor much better than the 120 min distractor. RO are taught they need to know 1 hour or less TS so having a choice of 120 min is not the most plausible. Change it back to the 15 min and call it a bank question. Changed part 1 of answers "C" and "D" to 15 minutes, deleted "minutes" from all part 1 answers and put it in the stem due to redundancy. The question is now a Bank (4/19/22). Question Sat
30	H	2																					BOLD and capitilize the word Initially I do not want an appeal saying the ruptre disk would go and the containment sump would also be correct. Bolded and capitalized "INITIALLY" per the suggestion and made minor changes to capitalization and character spacing for formatting concerns (4/19/22). Question Sat
31	H	3																					NRC 2013 VC Summer, No Comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
32	M	2																					NRC 2012 Byron, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022			
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units			
33	H	2									B	E/S	NRC 2011 Caloway, Please add the following to the distractors: A. Rx Head Vent Valves Open, B. 1RC-PCV-1496 (Pressurizer PORV) Open, that should be all. Added "open" to answers "A" and "B" and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
34	F	2									M	S	No Comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
35	H	4									N	E	Really like the question however distractor A does not seem plausible as you are on RHR. Good try though. For Distractor A maybe something like Lower until bypass flow is throttled open. Changed answer "A" to the suggested change and changed the capitalization and character spacing for formatting concerns (4/19/22). Missing the actual page that has the question.
36	H	3									M	S	NRC 2019 TP exam. , No comments. Deleted "F" from part 1 of the answers and added it to the stem due to redundancy. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
37	H	3									N	E/S	The stem states that the failed instrumert is in trip not test. If it is tripped it dosnt match the K/A if it is in test (which trips the bystables) it does. Changed the stem from a channel in trip due to a failure, to a channel in TEST due to an ICP Calibration. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
38	H	3									N	S	No comments. Changed capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022			
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units			
39H		2									N	E/S	for the first half of the question you can say " 1-QS-LI-100A, 1QS-LI-100C and ____(!) ____ input into the ..." Changed part 1 of the stem to reflect the recommended changes and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
40M		2									N	E/S	FREE REVIEW QUESTION: The only question I have is how do you raise Chill water temp? Licensee Change: Question was re-written. (2/9/22) The new question is not acceptable as if 105 were the correct answer then 115 would also be a correct answer so you can eliminate A and B based on logic not any licensed or systems knowledge. we need to think of a way to reword the first half. Added the modifier "FIRST" to eliminate 2 correct answers. Changed the character spacing and capitalization for formatting concerns (4/19/22). Question Sat
41M		3									N	S	FREE REVIEW QUESTION: No comments Licensee Change: No changes made (2/9/22). Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
42H		2									N	S	No comments. Added "is" before minimum to make the question read better, deleted "Range" from the answers and added it to the stem due to redundancy concerns, and changed the capitalization and character spacing for formatting concerns (4/19/22).
43H		2									N	S	No comments. Deleted "U1" from the answers and placed it in the stem due to redundancy concerns. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

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Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units				Logic
44	H	2												First half of distractor C and D seem unrealistic. Why would taking away a input into the suction source result in a rise in suction pressure. Even using the logic you provided pressure would go down until the supposed condensate pump got up to speed. An option for the first part of the question would be simply to ask what the discharge of 1-SD-P-1A is and give a choice of Main Feedwater Pumps or Condensate Pumps. this would meet the K/A and test the interface of the HD system and the Feedwater system. Changed part 1 to the suggested discharge flow path, changed the capitalization and character spacing for formatting concerns. The question is now at the memory level (4/19/22). Question Sat
45	M	2				X					N		U/S	Make the question simple systems question that directly address the K/A "What is the power supply to MOV-100A (AFW PUMPS Motor operated discharge valve? Answer choices could be MCC-1J1-2N, MCC-1A1-2, MCC-1B1-3, MCC-2A1-3. with MCC 1J1-2N being the correct choice all others are plausible as they are power supplies for MOV-154A, MOV-150A and MOV-254A. Sometimes it is easier to just read the K/A and ask it very true for power supply questions. Completely changed the question to the recommendation for 1-FW-MOV-100A (4/19/22). Question Sat
46	H	2									N		E/S	Formatting issue with distractor B. If the trip valves are not labeled in the EOP's they do not need the noun name in the question however if they are given the noun name in the EOP's they need to be given the noun names in the question as well. Changed the formatting issues with "B", added the noun name to 2-MS-TV-211A/B, changed the answers to U2 to reflect the stem, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws				5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation		
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic	Q-K/A				License Level	
47	H	3													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
48	H	3													B	S	NRC 2014 DC Cook, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
49	H	2													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
50	H	2													B	S	NRC 2011 Comanche Peak, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
51	H	3													N	S	No Comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
52	H	2													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
53	M	2													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
54	M	3													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
55	H	2													N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units			
56 H		3											FREE REVIEW QUESTION: Sat as the TS portion of the question is above the line information it is acceptable as an RO question. Licensee Change: Changed the format of the question slightly and added "Based on the bank overlap counter" to statement 1 in the stem. (2/9/22) No comments. Deleted "steps" from part 1 of the answers and added to the stem due to redundancy. Changed the capitalization and character spacing for formatting concerns (4/19/22).
57 H		3									N	S	Can we change the second half of the question to ask if Tave with be higher or lower. Doing this will make the question better match the K/A. Changed Part 1 to Tave and moved PRNJ response to Part 2. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
58 M		2									M	S	NRC 2021 Beaver Valley, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
59 M		2									N	U/S	I question if a prompt Jump is a credible distractor. Would something like "IAW 1-OP-1.7 (noun name of procedure) critical data is taken at _____ (1X10-8 or 5X10-7) and when the RO uses rods to stabilize power the RO will be observe a prompt (jump/drop)" this would have the generic ties to a plant specific procedure and also test if the operator know if they would insert rods of withdraw rods to stabilize power. Re-worded the question to include a procedure reference, added "in startup rate" to part 2 of the stem to quantify the statement, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic			
60H		2												the 990 is not credible. A 10% power reduction is a very simple determination to 900 Mwe. Changed part 1 to the "desired" mode when ramping and left part 2. Deleted "Valve" from the part 2 answers and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
61H		3				X						N	U/S	No comments. Added "Assuming no Operator action" to the question for clarification. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
62M		2										N	S	No comments. Deleted "%" from the answers and put it in the stem due to redundancy. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
63M		2										N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
64H		3										M	S	NRC 2014 Catawba Exam, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
65H		2										M	E/S	if the exhaust is required to be aligned through the charcoal filters when ever fuel handling activities are in progress why would they need to align them? Or is this specifically only when the AP is entered?. Answered the Chief Examiner's questions with no concerns. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022						
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		8. Explanation					
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units		Logic	License Level	Q-K/A	6. Source (B/M/N)	7. Status (U/E/S)
66	M	2														Change 260 to 4160 so it is correct that they would make an announcement but it is not the lowest voltage required to make an announcement for. Then the question would become a modified question. Changed part 1 of answers "A" and "B" to 4160V, restructured part 1 stem, and changed the capitalization and character spacing for formatting concerns. The question is now modified (4/19/22). Question Sat
67	M	2														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
68	M	2														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
69	M	2														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
70	M	2														FREE REVIEW QUESTION: UNSAT Distractor D is not credible. Why would anyone think to leave the protected area while they are alarming? Maybe change to use hand held monitor and if clean exit the protected area with no additional actions required. License Change: Changed answer "D" to include a hand frisk and made small formatting changes to first sentence in answers "B" and "C". (2/9/22) Question is now Sat with the changes implemented. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
71	M	2														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
72	H	3														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022			
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units			
73	H	3									M	S	NRC GFE Exam Bank No comments Will need Steam Tables. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
74	M	2									B	E/S	Several questions deal with what can be operated from the remote shutdown panel I would like to have this question changed so something other than a main control room fire. For balanced of coverage. If we cannot think of a good question we can talk. Completely changed the question for balance of coverage concerns (4/19/22) Question Sat
75	H	3									M	S	NRC GFE Exam Bank No comments Will need Steam Tables. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
76	H	3									N	E/S	Meets the SRO level requirements but misses the mark for tier 1, if you change the first half of the question to "Based on the above conditions IAW 1-AR-C-F4 (RCS OVER PRESSURE) manual control of 1-RC-PCV-1456 (is/is not) required. This would make this a tier 1 question and still test the knowledge of whether or not the applicant knows what insurment is tied to witch PORV. The second half would remain the same. Making the change allows the question to meet the criteria 1 of the feedback document. (step 2.2 of the AR has you take manual control of the PORVs. Changed part 1 to the suggested change to align with Tier 1 Criteria (4/19/22). Question Sat
77	H	2									N	S	meets criterial 1 of the OL feedback for tier 1 question no comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

Form 2.3-5 Written Examination Review Worksheet

Site: North Anna										Date to be Administered: 6/15/2022				
Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws			4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units				Logic
78	H	2												NRC 2009 Hatch, I suggest changing the 60 to 30 as 60 seems to not be that plausible. In the stem make the second half to reference the procedure that requires the notification to be made in 15 min. Like " IAW XXXXX the MAXIMUM time.." make this a Bank question as no significant changes would be made going back the the 30 min. Changed to "B" and "D" answers to 30 mins. and changed the question back to bank. Added "occurred" to time 1130 and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
79	H	2									B	E/S		FREE REVIEW QUESTION:is it necessary to provide the TS? If what you are trying to ask if the diesel is now operable can you just ask that? There is no reason to state that the diesel is inop in the stem. Also in the first part of the question state in accordance with O-AP-10 what is the Minimum ... I am trying to get some concurrence withanother chief to make sure it is good so don't change anything until I get back to you. Licensee Change: Changed the stem of the question significantly. Part 1 was changed to make the SRO choose the correct procedure to configure EDG loads and Part 2 was changed to make them declare operability. The reference was deleted. (2/9/22)Change after to Prior so the 1H diesel is inoperable as this would make it more plausible distractors. Changed "after" to "prior to" for part 2, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
80	H	3									N	S		meets criterial 1 of the OL feedback for tier 1 question no comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation	
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic				Q-K/A
81	H	3													Let talk about changing distractor C and D first half to RWST level of 8%. This would seem very plausible as LHSI pumps are required to be secured if not aligned for cold leg recirc and sucking off the RWST. and this is not the case after step 9 you are aligned to cold leg recirc and no LHSI pumps are aligned to the RWST. meets sro and criteria 1 for tier 1. Changed part 1 of "C" and "D" answers to "RWST Level of 8%", restructured part 1 of the stem, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
82	H	3													No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
83	H	2													No comments. Changed "NOT" to lowercase for exam consistency, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
84	H	3													NRC 2008 Catawba exam. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
85	H	2													FREE REVIEW QUESTION: Do not believe that the question is SRO only Notes are generally RO knowledge. Knowledge of procedure hierarchy is generally RO knowledge. Convince me otherwise. Licensee Change: Modified the conditions in the stem, changed Part 1 of the question to meet the SRO level, and justified that the second part of the question met the SRO CFR43.5 flowchart requirements. (2/9/22) Question is now Sat with the changes made no comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

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Q#	1. LOK (F/H)	2. LOD (1-5)	3. Psychometric Flaws				4. Job Content Flaws			5. K/A Use Flaws		6. Source (B/M/N)	7. Status (U/E/S)	8. Explanation
			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic			
86	H	2										B	S	NRC 2009 TP exam, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
87	M	2										N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
88	H	2										N	S	No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
89	M	3										M	S	NRC 2018 NA exam, No comments. Changed "NOT" to lowercase for exam consistency, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
90	M	2										M	E	NRC 2020 NA exam, Lets use 75 psig as that is another number that is in the procedure 94 psig seems high and I do not believe anyone would pick that distractor even if they knew nothing about the procedure. We could then potentially call this question modified. Changed answers "B" and "D" to 75 psig, deleted "Safety Injection" from the answers and added it to the stem due to redundancy, and changed the capitalization and character spacing for formatting concerns (4/19/22). In the explanation of plausibility please include why a high steam flow SI is
91	M	3										M	S	NRC 2014 NA exam, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
92	H	2										N	S	FREE REVIEW QUESTION: Not sure what you are asking in the second half of the question. Not an issue for SRO only. Try to reword the second half of the question to ask a direct question. Licensee Change: Changed the formatting of the question to make it more clear. (2/9/22) Based on the changes made and discussions with the licensee the question is now Sat. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units				Logic
93 M		2												No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
94 M		3					X							Distractors with more or less restrictive do not seem plausible as why would you believe that any direction given by any plant personnel could be less restrictive than your license (TS). Make this a one part question saying that a standing order can be more restrictive and must be approved by, Operations Manager, plant manager, Site VP and the correct answer. providing you have a site VP if not another important person like licensing manager, or Shift manager. Changed the question to the suggested change with the suggested answers (4/19/22). Question Sat
95 M		2												NRC 2017 Surry, this is a straight up generic K/A so it is not supposed to be plant specific (I know it does not make sense) so for knowledge of fuel handling procedures it could be a simple as with the same basic question ask where the preferred location to place the fuel assembly is (a) in upender frame down, (b) the deepest area of the fuel transfer canel, (c) quickly transfer the assembly to the SFP, (d) the reactor vessel. this would be generic for all sites i know of and salvage the question with little work. Changed the question to the suggested change with the suggested answers (4/19/22). Question Sat
96 M		2												No comments. Added "Extension" to the part 2 stem for accuracy, and changed the capitalization and character spacing for formatting concerns (4/19/22).
97 H		3												NRC 2000 VC Summer exam, the stem gives the status of Unit 1 while the question asks about Unit 2 equipment. Please make them align. You cannot really answer the question unless you make an assumption. Changed U1 to U2 in the stem, and changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat

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			Stem Focus	Cues	T/F	Cred. Dist.	Partial	Job Link	Minutia	#/Units	Logic		Q-K/A	License Level	6. Source (B/M/N)	7. Status (U/E/S)
98 M		3														No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
99 M		2											B	S		NRC 2017 Surry, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat
100 M		2											M	S		NRC 2016 Oconee, No comments. Changed the capitalization and character spacing for formatting concerns (4/19/22). Question Sat