Facility: **Cooper Nuclear Station**   **Exam Date:**   **September 21 – 24, 2020**

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		
A1	1 2.1.25	2	X						X			~~U~~ S	• JPM cannot be completed as written because the cue does not include the time since shutdown. Without this information, the graph cannot be utilized. Added 24 hours for time after shutdown to the IC to allow 8 hours to be the time to 200 F • Need to provide a marked up copy of Figure 4 as a key to show the intersection of the graph. Inserted a snip it in the answer key with intersection on graph they examinee would use. **JPM now SAT**
A2	1 2.1.37	2	X						X			~~E~~ S	• It doesn't look like there is enough information to answer the question. Where did 10-15 start? Was this the 04-08 rod pull? Where did 02-31 come from? Need all the handouts. Why doesn't step 2.10 apply to move 10-15 to its correct position? Sent the wrong handout. I had one filled out so they could see the problems. The 2.10 is if it is not for the Approach to criticality which is stated in the step only 2.9 applies. **JPM now SAT**
A3	2 2.2.15	2										~~E~~ S	• Hard to review without the handout. The Cue tells you to include annunciators and the annunciator is a critical step. Recommend removing because it should be obvious with the handout. Also, an evaluator should be able to ask an appropriate follow-up question if they left the annunciator off. Forgot to include handouts of drawings. I added the handouts and marked up the different locations to identify the annunciator and also the trip. • Change validation time to 20 minutes. Changed validation time to 20 minutes. **JPM now SAT**
A4	3 2.3.11	2										S	
A5	1 2.1.20	1										~~U~~ S	• LOD is probably a 1, and I fail to see how this is SRO level of knowledge. Added loss of DC bus, requiring the examinee to also determine the effect of loss of power on level instruments. **JPM now SAT**
A6	1 2.1.3	3										~~E~~ S	• Seems like CS-7B is open and & CS-7A is closed. I think A core spray is inoperable. I didn't see HPCI test light. Seems buried. Could be trouble. This could take an hour based on number of pages given.

	Safety Function and K/A															Comments
																Recommend having something wrong on each page but not all findings are critical. Replaced with JPM from 3/2017 exam – Determine action for chemistry out of limits. **JPM now SAT**
A7	2 2.2.21	2													S	
A8	3 2.3.13	2													S	
A9	4 2.4.44	3													S	
Simulator/In-Plant JPMs	1 Safety Function and K/A															
																• General comment on In-plant JPMs, consistency with the procedures. P1 and P3 give out sections, P2 gives out the entire procedure. It seems to me if an entire procedure would normally be in-hand, they should be provided the entire procedure, if only sections, only sections. By giving the entire procedure for P2, you are likely cueing the alternate path.
P1	6 262002 K4.01 RCA	2													~~E~~ S	• Is it necessary to tell them the status of the breakers in the initial condition? Aren't they able to ascertain that information visually? Otherwise, you are cueing them that they MUST perform the steps. Removed status of the three breakers from initial conditions and added examiner cue for as-found positions of the breakers' handles. **JPM now SAT**
P2	7 212000 A2.01 Alt Path	3													S	• Step 9, "voltage" is misspelled. Per CE comments, corrected spelling for "voltage" in step 9, changed handout from one handout with entire procedure to two separate handouts: one for Section 5 and another for Section 11, and changed examiner instructions to only give procedure Section 5 initially, then give procedure Section 11 when requested at JPM step 11. (When only a procedure section is listed as a handout, the initial handout generically includes the procedure table of contents and precautions and limitations. So, if a subsequent procedure section is required, the examinee has the table of contents for reference.)
P3	8 286000 A2.08 Alt Path	3													~~E~~ S	• For P-2, you provide the entire procedure but for P-3 only provide the section. For P2, will not give entire procedure as handout. See comment for P2, above. • Step 1, will the applicant actually remove the oil dipstick? If not, provide a photo of the end of the dipstick. Will provide laminated photos for oil dipstick

																and engine cooling water reservoir. **JPM now SAT**
S1	1 201001 A4.01 Alt Path	3													S	• Change validation time to 5 minutes. Changed validation time to 5 minutes.
S2	2 259001 A4.02 Alt Path	3													~~E~~ S	• Should step 3 be critical? Will you be able to reset without pressing the trip pushbutton? Step 3 is not critical. RFPT B trip is already sealed-in due to high RPV level. Trip can be reset by pressing RESET button (step 6), after at least 2 of 3 high level channels are reset (step 4). • Step 6 is listed as critical step and should be bolded. Bolded step 6 per CE comment. • Step 8, there are two periods at the end of the sentence. Deleted extra period in step 8 per CE comment. • Steps 13 and 15 are not critical. Removed critical step markings from steps 13 and 15. • Step 13, add examiner note that the minimum governor speed is 2000 rpm. Added examiner note. **JPM now SAT**
S3	3 239001 K4.01	2													~~E~~ S	• Is there any feedback from the simulator if an RPS jumper is removed? If so, add an examiner note. No feedback when jumper is removed. • The JPM steps start at step 4.5 but the cue just states Section 4. Cue should be to start at step 4.5, with steps 4.1 – 4.4 marked as complete or N/A, as appropriate, on the handout. Specified Handout 2 is marked up through step 4.4 complete and initiating cue is to start at step 4.5 per CE comments • Change simulator IC to a mode 3 IC. Changed to a mode 3 IC. • Change validation time to 5 minutes. Changed validation time to 5 minutes. **JPM now SAT**
S4	4 239001 A4.02	3													S	• Examiner note on page 8 discusses the closing of MS-MO-79, but the step is to open the valve. Is the note necessary? Edited examiner note to remove referencing close MS-MO-79.
S5	5 295036 EA1.01	2													~~E~~ S	• Add to the task standard "without starting any other sump pump." It should be a JPM failure if the applicant unnecessarily transfers water out of a sump. Task standard now states: "Examinee placed all sump pumps for sumps A, B, D, E, and L in OFF, started Sump Pump C-1 and/or C-2, and when Sump C level was less than 9.5 feet, placed Sump Pump C-1 and C-2 in OFF, and did not start any other sump pump, IAW Procedure 5.2FUEL, Fuel Failure, Attachment 2." • Change validation time to 5 minutes. Changed

															validation time to 5 minutes. **JPM now SAT**
S6	6 264000 K4.01	3												~~E~~ S	• If no adjustment is necessary, JPM steps 2 and 9 should not be marked critical. Removed critical step marking from steps 2 and 9.. • Step 4, add a current value for the examiner to provide. Added " NLO reports 50 amps for No Load GEN FIELD CURRENT." **JPM now SAT**
S7	7 215001 A2.07													S	• Add examiner note to step 10 that the TIP detector drives to 0, then slowly from 9999 to 9674. Added examiner note.
S8	8 400000 A4.01						X							~~U~~ E	• This is overlap to question 18 on the written exam. Replaced with bank JPM for splitting REC critical loops to not overlap written question 18. **JPM now EDIT** • Change validation time to 10 minutes. Changed validation time to 10 minutes. • If no manipulation required, JPM step 7 should not be marked critical. Removed critical step marking • For JPM step 8, the standard should reflect moving the valve in the closed direction, not the open direction. Changed standard to indicate closing the valve. **JPM now SAT**

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.

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Facility:	**Cooper Nuclear Station**					**Scenario:**	**1**		**Exam Date:**	**September 21 – 24, 2020**
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
								E		Need to add a failure for RO to respond to prior to the major. Currently, only has a reactivity manipulation. Added RRMG A speed control failure as event 2.
1					1			U̶ S		This is a pre-briefed Tech spec, so it does not count as a tech spec call. Change to a REC pump trip. Changed to REC pump trip. This is now event 3.
2								S		Moved to event 1
3					1			S		Now event 4
4								S		Now Event 5
5							2020 exam 1	S		Now event 6, Different success path than the previous major.
6						2		S		Now event 7
7								S		Now event 9
8								S		Initial event 8 now event 10. Added failure of scram discharge volume vent and drain valves to automatically close
9								S		Old event 7
10								E̶ S		Old event 8. Change to RCIC pump trip, otherwise RCIC will not allow level to go low enough to require emergency depressurization. RCIC fails to start and will trip after crew manually starts it, and it is unrecoverable.
					2	2	9	E̶ S		

Facility:	Cooper Nuclear Station				Scenario: 2				Exam Date:	September 21 – 25, 2020

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
									The list of objectives on page 1 have RCIC initiation after APRM spike, but the table on page 2 has the RCIC initiation after the APRM spike. Corrected order of events, RCIC initiation is before APRM failure.
1								S	
2					1	1		~~E~~ S	Change spurious RCIC initiation to an instrument failure due to logic actuation instead of a component failure. Changed designation of RCIC malfunction from "C" (component) to "I" (instrument) per CE comment. ATC should get credit for verifiable action. Gave ATC credit Add cues if asked to open the starter for MO-14 and add roll play if asked to investigate RCIC initiation (page 22). Added cues. Add step 2.2.4 for BOP (page 22). Added step 2.2.4
3					1			~~E~~ S	Now event 4. How could APRM A read ~82% and be considered operable?. Should this be changed to reading consistently with other APRM at whatever power level RCIC drove the crew to? If it is reading much lower than the rest then there's a possibility of not meeting step 2.3 of the alarm card because 2 APRM would be inop. Changed to only APRM C failure high to ensure operator has to perform a verifiable action (bypass APRM C) per discussion with CE. Due to changing to only one APRM inoperable, no LCO entry would be required. Therefore, added MSL Rad Monitor D downscale event after RCIC initiation event and before APRM C event to replace APRM Tech Spec call per discussion with CE. Add TLCO 3.3.3 (page 25). Added TLCO 3.3.3. Added main steam line radiation detector failure as Tech Spec only call as event 3.
4								S	Now event 5.
5								S	Now events 6 and 7
6						2		S	Now event 8.
7								S	Now event 9.
8								S	Now event 10.
9								S	
10								S	
				2		3	~~9~~ 10	~~E~~ S	

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Facility:	**Cooper Nuclear Station**					Scenario: 3				Exam Date: September 21 – 24, 2020
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
										For CT2, add which areas reach max safe first and second. Added areas.
1							2020 exam 1	S		
2								~~E~~ S		Change to upscale failure. Changed to upscale. Add booth cue that if crew does not proceed to placing HPCI in standby because of the failure, booth calls as SM directing moving to placing HPCI in standby. Added cue.
3										Imbed placing HPCI in standby into event 4. Combined events 3 and 4
4					1			S		Now event 3
5								S		Now event 4
6					1			S		Now event 5
7						1		E		Now event 6 On the D-1, the critical task is listed as CT#2, when it is CT#1. Corrected typo on D-1 page 2; CT is now listed as CT#1.
8								S		Now event 7
9						1		S		Now event 8 Corrected typo on page 36; CT is now listed as CT#2.
10								S		Now event 9
					2	2	~~9~~ 8	E		

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Facility:	Cooper Nuclear Station						Scenario: 4			Exam Date: September 21 – 24, 2020
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
										Additional comments may follow validation
1					1			S		
2							2018 exam	S		
3					1			S		Page 24, one value is in "wc and another in "wg; is this correct or should they both be "wg Changed "wc to "wg to match units used in procedure.
4						2		S		
5								S		
6								S		
7						1	2018 exam	~~E~~ S		Critical task #3 is not identified anywhere in the D-2. Critical task #3 is questionable as a critical task since it is satisfied by the booth. In order to qualify as a critical task, there needs to be some kind of documented evidence that 5 minutes is the time it takes to vent the scram header once direction is given, then there has to be very tight control on the booth waiting that specific amount of time. The task cannot be satisfied "if they make the call to vent prior to exceeding BIIT and exiting the EOP." Removed Critical task #3
8								S		
					2	3	6	E		

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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.

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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	10	0	2	1	2	0	7.1	~~E~~ S	Event 1 is a pre-briefed Tech spec, so it does not count as a tech spec call.
2	10	0	2	0	3	0	0	~~E~~ S	
3	9	0	2	0	2	0	0	~~E~~ S	
4	8	0	2	0	3	1	7.7	~~E~~ S	Critical task #3 is questionable as a critical task since it is satisfied by the booth.

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:	**Cooper Nuclear Station**			Exam Date:	**September 21 – 24, 2020**

OPERATING TEST TOTALS						
	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
Admin. JPMs	9	2	3	4		
Sim./In-Plant JPMs	11	1	6	4		
Scenarios	4	0	4	0		
Op. Test Totals:	24	3	13	8	12.5%	

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 Unsat.)/(Op. Test Total) and place this value in the bolded "% Unsat." cell.

    Refer to ES-501, E.3.a, to rate the overall operating test as follows:
- satisfactory, if the "Op. Test Total" "% Unsat." is ≤ 20%
- unsatisfactory, if "Op. Test Total" "% Unsat." 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 post scenario 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).