ES-301 **Operating Test Review Worksheet** **Form ES-301-7**

Facility: Millstone 3			**Exam Date: September 13, 2021**										
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		
RO A.1.1 - Perform a Mode 4 Shutdown Margin Calculation with an inoperable Shutdown Margin Monitor.	COO 2.1.37											E	Pages 4 & 16: Added (MOL) behind "Core burnup is 10,500 MWD/MTU" (for clarification). Page 8: On JPM Step 11 standard, changed "Anticipated" to "Current"
RO A.2 - Perform a Manual Quadrant Power Tilt Ratio (QPTR) Surveillance.	EC 2.2.12											E	Page 3: listed Answer Key in Required Materials Pages 8 & 9: Added an acceptable band of + / - 0.002 to JPM steps 9, 10, 11 Page 12: Corrected typo in initial conditions (numbers 3 & 4 changed to 1 & 2)
RO A.3 - Perform Independent Verification of DRMS Work Station Database	RC 2.3.15											E	Page 3: In Required Material section, changed 3-ring binder to page 2 of 95 of IC 3408A09-001 & changed revision to Rev. 046 (no impact on JPM). Page 5: Minor change to evaluators note (directed evaluator to page 3). Page 9: Provided title for Attachment 1: "Simulated DRMS Computer Screen"
RO A.4 - Perform Manual Status Trees and Prioritize Response.	EP 2.4.4											E	Pages 3 to end: Corrected JPM Number to "NRC RO A.4" (typo had JPM listed as "NRC RO A.1.4").
SRO A.1.1 - Respond to Degrading Intake Conditions	COO 2.1.20											E	Changes made to reflect procedure revisions to SP 3665.2, SP 3665.2-001 & OP 3215. On page 3: Changed procedure revision numbers to SP 3665.2 Rev. 12, SP 3665.2-001 Rev. 12 & OP 3215 Rev. 16.

													On pages 4 & 13: Changed month from October to April (Initial Conditions) to achieve same 6 point Environmental Factor (under new procedure revision). On page 10: Added new JPM step 8 to address New Note 4 procedure requirement (new JPM step is non-critical). On pages 14 – 19, changed examinee handout to current procedure revision (SP 3665.2-001 Rev. 12).
SRO A.1.2 - Identify a Loss of CTMT Closure and Determine Required Actions	COO 2.1.36											E	Page 1: Removed Student Name from header Page 3: In Required Material section: Added "(handout when requested by examinee)" next to P&ID's.
SRO A.2 - Review a QPTR Surveillance and Determine Required Tech Spec Actions	EC 2.2.12											E	Page 3: listed Answer Key in Required Materials Pages 8 & 9: Added an acceptable band of = / - 0.002 to JPM steps 9, 10, 11
SRO A.3 - Review Narrative Logs and Determine Required Action(s)	RC 2.3.11											E	Pages 4, 8-10: Changed "student" to "examinee"
SRO A.4 - Emergency Plan Classification	EP 2.4.41											S	
Simulator/In-Plant JPMs	1 Safety Function and K/A												
S.1 - Respond to a Mode 4 LOCA	2-004 EPE-009-EA1.04											E	On pages 3 & 12, changed validation time from 15 to 21 minutes
S.2 - Pressurizer Pressure Control Following a Reactor Trip	3-010 APE-027-AA1.01											S	

S.3 - Start 'B' RCP using GA-6 Starting Reactor Coolant Pump	4.1-003 003 RCPS A4.06											E	Pages 3 & 11: changed validation time from 13 to 12 minutes Pages 4 & 12: changed initial conditions and cue to reflect step 1 of GA-6 is complete (shortened JPM based on validation & lack of substantive steps in GA-6 step 1). Also, changed sim requirements step 6 to reflect ES-1.1 is complete thru step 20c. Page 5: removed first 10 steps of JPM (shortened JPM for reasons previously described). Page 7: Changed JPM step 7 cue to direct starting 'A' RCP (expected that US would direct this). Page 8: changed JPM step 10 standard to reflect that seal injection flow is already in band (editorial change).
S.4 - Dump Steam Using Atmospheric Relief Valve	4.2-039 041-A4.06											E	Pages 3 & 7: changed validation time from 15 to 10 minutes Pages 4 & 8: changed initial conditions and cue new shortened JPM conditions (Atmosp. Rx Valves are now in man / minimum and MSIV's are closed). Page 4: In Simulator Requirements, added note about running S.7 in parallel and added last bullet to reflect GA-26 steps 1 thru 6 are complete (new sim IC was snapped). Page 6: Removed first 14 JPM steps and the last JPM step (made changes to shorten JPM due to run time and lack of substantive steps in the early portion of the JPM).
S.5 - Stopping Containment Spray	5-026 026-A2.08											E	Pages 3 & 14: changed validation time to 15 minutes (from 12 minutes). Page 12: corrected typo on JPM step 21 (related to 3SWP*MOV54B and 3SWP*MOV54D).
S.6 - Respond to an Open Phase Condition	6-062											E	Pages 3 & 11: changed validation time to 9 minutes (from 8 minutes).

	APE-077-AA2.05												Page 6: changed cue to stay “continue with” instead of “complete”.
S.7 - Respond to 3HVQ49-1 High Radiation	7-073 GEN 2.3.11											S	
S.8 - Implement GA-30 Aligning RPCCW for RCS and SG Sampling	8-008 008 CCWS A4.01											E	Pages 3 & 9: changed validation time to 6 minutes (from 5 minutes). Page 6: For JPM Step 5, changed LOP reset to non-critical step & changed standard (as LOP is / wasn’t present).
P.1 - Reset 3MSS*MSV5, Terry Turbine Trip Throttle Valve	4.2-061 EPE-E05-EA 1.1											S	
P.2 - Verify All Dilution Paths Isolated	1-004 004 CVCS A2.25											S	
P.3 - Energize Inverter 1 (or 2)	6-062 APE: 057-AA1.01											S	

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: Millstone 3					Scenario: 1				Exam Date: September 13, 2021
1 Event	2 Realism/Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scen. Overlap	9 U/E/S	10 Explanation
1								S	
2					X			S	
3					X			S	
4						XX		S	
5								S	
6								S	
									The following changes were made based on NRC validation: - Page 7: Added 3rd critical task to manually actuate SI (NRC feedback from 1021 standard) - Pages 9 & 24: Added booth direction & trigger for locally opening the reactor trip breakers - Page 11: added IC-91 password - Page 22: Added potential TS 3.4.3.1.b entry (dependent on PZR level response) - Page 24: Added booth direction to locally open Rx Trip Breakers - Page 30: clarified status of RAKSET 1 testing

Facility: Millstone 3					Scenario: 2				Exam Date: September 13, 2021
1 Event	2 Realism/Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scen. Overlap	9 U/E/S	10 Explanation
1					X			S	
2					X			S	
3								S	
4								S	
5						X		S	
6						X		S	
									The following changes were made based on NRC validation: - Pages 5, 9, 10, 11: Changed IC to IC-92 (old IC was IC-90). Added password to guide. - Page 7: Added clarification on what constitutes a turbine trip (operator may runback the turbine or close MSIV's) - Page 14: Removed typo "Crew takes the shift" and put on page 11 - Page 26: Added clarification on MSI being defeated and expectant crew actions - Page 30: Added clarification on steam dump alignment - Page 31: Spelled out Motor Driven Main Feedwater Pump

Facility: Millstone 3					Scenario: 3				Exam Date: September 13, 2021
1 Event	2 Realism/Cred.	3 Required Actions	4 Verifiable actions	5 LOD	6 TS	7 CTs	8 Scen. Overlap	9 U/E/S	10 Explanation
1								S	
2					X			S	
3								S	
4								S	
5					X			S	
6								S	
7						X		S	
8						X		S	
									The following changes were made based on NRC validation: - Pages 4 & 30: SI is likely late in the scenario due to steam line drains shrinking the primary. Revised expectant transition from ECA-0.0 accordingly (going to ECA-0.2). - Page 14: Added “BOP starts ‘C’ CRDM fan” to the guide. - Page 15: Added a potential TS call to General Note 1 (regarding TS 3.4.6.2 d.) - Page 16: editorial correction (removed “When satisfied with power increase, cue booth to begin Event 5” as this was out of place). - Page 21: added potential crew actions of starting the TDAFW pump - Pages 25 & 27: moved ‘A’ EDG restoration to later (step 11) - Page 28: changed expected response for step 28n to “BOP closes the MSIV’s” - Page 33: Added Reactivity Plan.

Instructions for Completing This Table:

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	6	0	2	0	2	0	0	S	
2	6	0	2	0	2	0	0	S	
3	8	0	2	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.

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OPERATING TEST TOTALS

	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
Admin. JPMs	9	0	8	9		
Sim./In-Plant JPMs	11	0	6	11		
Scenarios	3	0	20	3		
Op. Test Totals:	23	0	34	23	0	

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 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).