

Facility: Palo Verde		Exam Date: October 7, 2019												
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		
														General comments: 1. Admin JPM's that have a KEY should be included for each admin JPM and correctly marked as "KEY for A4," as an example. 2. Initiating Cues should match between examiner record and handout page to applicant. 3. Try to avoid cueing in the questions for the applicant to answer in the Admin JPM. If you provide a form to fill out with blanks, just ask them to complete the form or table.
A1		Determine regulatory requirements for conditions of the license (2.1.4)	1		X	X							E	This JPM has cueing in the initiating cue and does not have any JPM steps marked as critical. The cue should read something like this: 1) List any reportable changes, the organization, and associated time requirements based on this medical evaluation 2) List additional changes to the conditions of the license (if any) for the individual
A2		Determine total RCS Identified leakrate (2.2,12)	3			X					X		E	Need to have "Key for A2" in RED at top of Key for this JPM to ensure it is not handed out and for examiners during grading. Box the answer in Red for each JPM step that is critical for grading purposes. Example, 1741.97 is the first number listed as

													put the three inop valves (577, 560, and 694) in the JPM standard
A8 (SRO)	Ensure Compliance with ODCM (2.3.11)	3	X									E	The cue should just be to "complete the table below." Don't cue to ODCM.
A9 (SRO)	Complete Emergency Form (2.4.40)	2							X			E	No Marked up EP-0541 form as Key provided for this JPM. K/A is wrong. It has to be from section 4 of the generic KAs so 2.4.40 would work but you guys need to figure out which one applies for your LOs for this activity. It is not really a PAR nor is it an EAL call since you give them that. The only real SRO item is determining that this SGTR release is within federal limits.
Simulator/In-Plant JPMS	1 Safety Function and K/A	2 LOD (1-5)	3a I/C	3b Cues	3c Critical	3d Scope	3e Overlap	3f Perf.	3h Key	4a Minutia	4b Job Link	5 U/E/S	6 Explanation
General comments for all JPMS													<ol style="list-style-type: none"> JPM standards should have a clear line item for where/when in the JPM the alternate path starts. Sometimes the JPM step, standard, and notes sections are confusing. The step is always the actual step from the procedure, the standard is what you expect them to do, what they see happen, and any transition piece (if required for alt path). Communications between applicant and CRS, field operators,

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: Palo Verde		General comments on scenarios							Exam Date: October 7, 2019	
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	
									<p>General Comments for all scenarios</p> <ol style="list-style-type: none"> 1. EVERY SWITCH that is touched must be in the D-2 guide. For example, during a downpower, if they use turbine or boration, the specific steps to accomplish either of these must be included for the event. 2. When several components are broken to create an event, it counts as one overall malfunction (such as a pump trip with its standby pump failing to auto start - this is counted as 1 malfunction or 1 event). 3. Measurable Performance indicators for CT table and in the D-2 body of the guide should have the actual switches manipulated for success of the CT. As an example, lets say that a NSSS Group isolation fails to isolate AFW as expected in scenario x, so the applicant must manually close the inbd and outbd isolation valves for AFW. Both of these valves should be listed in the CT table. As an example for scenario 1, for the CT table on page 3 of D-1, the measurable performance indicator for CT-2 must include BOTH <ol style="list-style-type: none"> a) the expected actions and b) the boundary conditions for completing the expected actions. For CT-2 the expected actions are not in the Measurable PI description in the table. Also, the Performance Feedback is incomplete in that power can be verified by observing voltage on the S04 bus (which you have in the wrong item, the Meas PI section). 4. In the D-2 form for each CT, you need to include the expected actions (ie the board manipulations) necessary to complete the CT in the body of the D-2 (page 19 and 21). 5. For parameters to record for grading purposes, we will need to work thru the required parameters to capture for scenarios for grading during validation week. 	

Facility: Palo Verde		Scenario: 1						Exam Date: October 7, 2019	
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
									Place abbreviated CT-1 and CT-2 just under turnover on D-1 first page.
1				3			X	E	D-1 form is wrong with failure to 100% versus D-2 of 60%. We need to document that this is a different kind of failure than the final elements in scenario1. It appeared as if we had two of these malfunctions of the same type (ie SG water level transmitter failures) and this is not true. The licensee is changing the guide for this this event so it can be clear that one is a control configuration channel failure while the other event on scenario2 is a safety configuration channel. Anyway to a TS event because we need two TS items and the second TS item starts after the major event is in progress (event 6) and this is not allowed per NUREG-1021.
2				3				S	
3				3				S	
4				3				S	
5				3	✓			S	
6				3	✓			E	This TS item starts way before the major event. We should give them the small RCS leak first in order to address TS calls for this event,. Then ramp the size up so that the crew can diagnose the leak. The NUREG-1021 does not allow a TS call once a Major is already in progress. If we bring in the leak early Nothing else needs to be changed on the major.

7				2		✓		E	<p>For the CT table on page 3 of D-1, the measurable performance indicator for CT-2 must include BOTH</p> <ul style="list-style-type: none"> a) the expected actions and b) the boundary conditions for completing the expected actions. <p>For CT-2 the expected actions are not in the Measurable PI description in the table. Also, the Performance Feedback is incomplete in that power can be verified by observing voltage on the S04 bus (which you have in the wrong item, the Meas PI section).</p> <p>In the D-2 form for each CT, you need to include the expected actions (ie the board manipulations) necessary to complete the CT in the body of the D-2 (page 19 and 21).</p>
8				3				S	
9				3		✓		E	<p>This event is really event 7 and the associated CT-1 goes with it for restoring feed. Move this to event 7 and move event 7 down and CT-2 will go with it on the order it appears in the D-2. Ensure CT-1 has the boundary conditions in the Meas PI in the table.</p>

Facility: Palo Verde		Scenario: 2					Exam Date: October 7, 2019			
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	
									Place abbreviated CT-1 and CT-2 just under turnover on D-1 first page. There are 9 malfunctions not 10 in this scenario (Event 1 counts as 1). Update target attribute table for 9 malfunctions.	
1				3				S		
2				3	✓			S		
3		X		3				E	EVERY SWITCH that is touched must be in the D-2 guide. For the downpower, if they use turbine or boration, the specific steps to accomplish either of these must be included at this event (put both in with conditional as listed page 10)	
4		X		3	✓			E	Need switches for turbine load reduction on page 12. You have the boration switches in this event (put them in event 3 above too).	
5				3				E	List the second CEA that drops (D-1 and D-2)	
6				3				S		
7				3		✓		E	CT-1 is here so on CT table (page 3) need to place boundary conditions in Meas PI for both CTs.	
8				3				S		
9				4		✓		E	CT-2 is here and need to place boundary conditions in Meas PI (page 3). Also, need to clarify in the title of CT-2 that this is cross-connecting EDG 'A' to the B train switchgear.	

Facility: Palo Verde		Scenario: 3					Exam Date: October 7, 2019			
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	
									Place abbreviated CT-1 and CT-2 just under turnover on D-1 first page. There are 7 malfunctions not 8 in this scenario (Event 4 counts as 1). Update target attribute table for 7 malfunctions.	
1				3	✓			S		
2				3				S		
3				3				S		
4				4	✓			E	Counts as one malfunction for purposes of event 4.	
5				3				S		
6				3		✓		E	CT-1 is here on D-1 form. On CT table (page 3) need to place boundary conditions in Meas PI for both CTs (copy from CT title). Also, are H2 analyzers needed for all LOCAs (ie a CT) per USAR or just LB LOCA? Need valve numbers for two valves in CT (both in table and in the body of D-2).	
7				3		✓		E	CT-2 is here on D-1 form. On CT table (page 3) need to place boundary conditions in Meas PI for both CTs (copy from CT title). Also, the closure of the RWT valves (530 and 531) are critical to ensuring proper NPSH for pumps drawing suction from the sump so these should be part of the CT, correct?	

Facility: Palo Verde		Scenario: 4						Exam Date: October 7, 2019		
ES-301	2	3	4	5	6	7	8	12 ⁹	10	Form ES-301-7
Event	Realism/Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scen. Overlap	U/E/S	Explanation	
									Place abbreviated CT-1 and CT-2 just under turnover on D-1 first page. There are 10 malfunctions not 11 in this scenario (Event 1 counts as 1). Update target attribute table for 10 malfunctions.	
1				3				S		
2				2				S		
3				4				S		
4				3	✓			S		
5				3				S		
6				3	✓			S		
7				3				S		
8				3				S		
9				3				S		
10				3		✓ ✓		E	CT-1 and CT-2 are here on D-1 form. On CT table (page 3) need to place boundary conditions in Meas PI for both CTs (copy from CT title). Also need to put actual valve numbers for all necessary valves in CT-2 (both in table and in the body of D-2) to meet the critical task. It also helps if you put a blank for the time that the CIAS setpoint was exceeded and its value (helps the examiner).	

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: Palo Verde		Exam Date: October 7, 2019								
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	2	0	0	E	See above comments for edits	
2	9	0	2	0	2	0	0	E	See above comments for edits	
3	7	0	2	0	2	0	0	E	See above comments for edits	
4	10	0	2	0	2	0	0	E	See above comments for edits	

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: Palo Verde		Exam Date: Exam Date: October 7, 2019				
OPERATING TEST TOTALS						
	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
Admin. JPMs	9	1	8	0		
Sim./In-Plant JPMs	10	0	8	2		
Scenarios	4	0	4	0		
Op. Test Totals:	23	1	20	2	4.3%	Satisfactory submittal.

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 $\leq 20\%$
 - 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).