Facility: BRAID	acility: BRAIDWOOD STATION UNITS 1 and 2												Exam Date: May 29 – June 8, 2018				
Admin	1 ADMIN Topic	2 LOD				3 Attributes	i			ے Job C	1 ontent	5	6				
JPMs	and K/A	(1-5)	I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link	U/E/S	Explanation				
SRO-A1 S-106 Determine requirements for a Steam Generator Tube Leak	COO1 2.1.23(4.4)	2										€S	<u>NRC</u> : (10 min) JPM is SRO-Only. Need to provide marked-up copy of 1BwOA SEC-8, through Step 5a. (Correct typo in CUE at start of JPM Step 1.) NOTE: CUES to applicant should reference the applicant back to the initial conditions, if appropriate, not simply restate the information. Step 4, 2 <sup>nd</sup> CUE, shouldn't the applicant know what type radiation monitors are on the MSLs and where they are located? Why is this information being provided?				
													Response: Typo corrected in CUE for Step 1. N16 monitors may by positioned on different MSLs. JPM is SAT.				
SRO-A2 S-205 Review QPTR Calculation	COO2 2.1.20(4.6)				×							U S	<u>NRC</u> : (15 min) JPM is SRO-Only. [Need to see a copy of the data sheet provided to the applicant which contains the errors.] The JPM tasking is for the applicant to perform an independent review of the surveillance. Why aren't all the inserted errors which require identification marked as Critical Steps?				
													<u>Response</u> : JPM Tasking Standard modified to limit review scope; critical steps are now accurate. JPM is SAT.				
SRO-A3 S-203 Apply GOCAR to Water Suppression System	EC 2.2.42(4.6)	2										S	<u>NRC</u> : (16 min) JPM is SRO-Only. This JPM duplicates the knowledge/ability competence tested on the SRO-Only section of the written examination (Q-91) by requiring determination of the same fire protection water suppression system actions. <u>Response</u> : JPM requires completion of paperwork				
													and the written question focuses on the correct conditions required. JPM is SAT as written.				
SRO-A4 S-302 Prepare/Perform a Liquid Release	RC 2.3.11(4.3)	3										₽S	marked-up copy of 1BwOP WX501T1, through Step G.6 and 1BwOP WX501T2. <u>Response</u> : Licensee agrees; copies provided. JPM is SAT.				
SRO-A5	EP 2.4.30(4.1)	2										S	<u>NRC</u> : (20 min) JPM is SRO-Only, satisfies the New/Mod JPM requirement, and is Time Critical,				

S-403 Classify and screen event for reportability								with one Time Critical component (13 min). [ <u>Need</u> <u>to see how this is modified from the bank JPM.</u> <u>JPM is significantly modified from original.</u> ] JPM is SAT as written.
RO-A1 R-104 Determine SDM is inadequate	COO1 2.1.25(3.9)	3					€S	<u>NRC</u> : (23 min) This JPM is Time Critical (20 min?) but validated at 23 minutes? Why is it time critical, and if so, is it 45 minutes to meet the TS/TRM requirement? Also, what determines the error bands used? <u>Response</u> : Based upon the 1 hour LCOAR limit, the time critical portion is 45 min. Also the error bands are based on ability to read graphs. JPM is SAT.
RO-A2 R-112 Calculate Boron Flow Set- point for shiftly daily surveillance	COO2 2.1.37(4.3)	2					ES	NRC: (10 min) This JPM is modified (for 7300 Mod Changes) and satisfies the New or Mod JPM requirement. [Need to see bank JPM. This JMP is not significantly modified, even if it refers to the new Ovation Mod style controller; still simply requires controller adjustment.]         Also, what determines the error bands?         Response:       Corrected ES-301-1 to show that the JPM may be performed in the Classroom (using photo of controller provided) and direct from bank. Error bands ased upon math operations performed. JPM is SAT.
RO-A3 R-203 Verify WTO Checklist	EC 2.2.13(4.1)	3					S	<u>NRC</u> : (30 min) JPM is SAT as written.
RO-A4 R-405 Activate ERO using the Everbridge activation system	EP 2.4.43(3.2)	3					ΕS	NRC:       (15 min) This JPM satisfies the New/Mod JPM requirement. This JPM is also Time Critical (10 min?) but validated at 15 minutes? What is the 10 min time based on?         Also, the facility should VERIFY that the applicants will only be able to access the TRAINING website for Everbridge, not the Examiners.         Response:       This JPM is considered Proprietary due to the Everbridge Procedure. Omit from public release in ADAMS.         The 10 min time is based only on a procedural requirement to allow the ERO member to arrive and man the TSC within 60 minutes. Therefore this JPM is not Time Critical. JPM is SAT.

Simulator/In-Plant JPMs	1 Safety Function and K/A							
S-a SIM-106 Perform a 50-ppm dilution with 1CV111A failure	1 004 A4.07	3	 				 S	<u>NRC</u> : (33 min) This JPM is ALT PATH and also satisfies the S/D or low Power requirement. JPM is SAT as written.
S-b SIM-210 Establish excess letdown	2 011 A4.05	2					₽S	<u>NRC</u> : (11 min) Each of the Simulator JPM must test a different safety function, but each JPM must also test different systems. (ES-301-D.4.a) This is the 2 <sup>nd</sup> CVCS system simulator JPM. <u>Response</u> : Reference system for Safety Function changed to Pressurizer Level Control. JPM is SAT.
S-c SIM-306 Align for hot leg injection	3 006 A4.07	2					S	<u>NRC</u> : (8 min) This JPM is Time Critical (20 minutes) and validated at 8 minutes. This JPM is New and also satisfies the S/D or low Power requirement. Add a final step to report completion of JPM task to the US. <u>Response</u> : The report of task status is not a critical step. JPM is SAT as written.
S-d SIM-407S Swap SX pumps	4 076 2.1.20	3					S	<u>NRC</u> : (22 min) This JPM is ALT PATH. The validation time appears to be excessive, for the time sensitive action to swap SX pumps back to original line-up, with no additional follow-up JPM action required. <u>Response</u> : Validation time based upon extensive interactions with the EO during the initial Standby pump start. JPM is SAT as written.
S-e SIM-511 RCFC surveillance with high vibrations	5 022 A4.01	3					S	<u>NRC</u> : (17 min) This JPM is New, is ALT PATH, and also satisfies the engineered safety feature requirement. JPM is SAT as written.
S-f SIM-606 Crosstie ESF to NONESF bus	6 062 A4.01	2					S	<u>NRC</u> : (8 min) JPM is SAT as written.

S-g SIM-702 Calorimetric with channel adjustment	7 015 A1.01	3					S	<u>NRC</u> : (31 min) This JPM is ALT PATH, even though the required alternate path actions are required within the same procedure (different step section). JPM is SAT as written.
S-h SIM-902 CMT purge with 1PR01J alarm	9 071 A3.03	2					S	<u>NRC</u> : (18 min) This JPM is ALT PATH. Add a final step to report actions taken to secure the release path to the US. Also, provide a copy of the Bank JPM that was modified. <u>Response</u> : The bank JPM is not Alt Path; this JPM is significantly modified as Alt Path. The report of task status is not a critical step. JPM is SAT as written.
IP-i IP-412S Align AF from the opposite unit	4 002 A2.04	2					₽S	<u>NRC</u> : (15 min) This JPM is New, is ALT PATH, and also satisfies the requirement to perform actions within the RCA. <u>Response</u> : Added a CUE to Step 4 for valve position indication from the Control Room. JPM is SAT.
IP-j IP-604 Energize an instrument bus from the CVT and S/D the inverter	6 057 AA1.01	2					₽S	<u>NRC</u> : (13 min) Add a final step to report completion of JPM task to the US. <u>Response</u> : The report of task status is not a critical step. JPM is SAT as written.
IP-k IP-803 Local Emergency start of SAC	8 065 AA1.03	3					₽S	<u>NRC</u> : 28 min) Add a final step to report completion of JPM task to the US. <u>Response</u> : The report of task status is not a critical step. JPM is SAT as written.

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## 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.

6

Facility: BRAIDWOOD STATION	UNITS 1 a	and 2		Scen	ario: 1 (	100% Te	sting 1LT-	517)	Exam Date: May 29 – June 8, 2018
1	2	3	4	5	6	7	8	9	10
Event	Realism/ Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scenario Overlap	U/E/S	Explanation
1-Perform 1BwOS EH-M1 N-BOP_US								S	
2-Failed PZR Press Low 1PT-457 TS-US					Х			S	
3-Trip of 1B EH pump C-BOP, US								S	
4-Auto Makeup relay actuation I-ATC, US								S	
5-Dropped Rod B08 C-ATC, US & TS-US					Х			S	
6-Down Power to recover dropped rod R-ATC, US								S	
7-1A SG Level 1LT-519 failed high I-BOP, US & TS-US					Х			S	(TS 3.0.3?-Yes)
8-Dropped Rod H08 M-ALL						Х		S	
9-Auto Rod Speed failed-8 steps/min C-ATC								S	
10-1CV8100(8112?) fails open C-ATC						Х		S	
11-PZR Safety 1RY8010C opens-SI required M-ALI								S	
11 Events	0	0	0	-	3	2	11	S	

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Facility: BRAIDWOOD STATION	UNITS 1 a	and 2	Scei	nario: 2	(Free Sa	mple) (9	0% 1PT-45	55 OOS)	Exam Date: May 29 – June 8, 2018
1	2	3	4	5	6	7	8	9	10
Event	Realism/ Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scenario Overlap	U/E/S	Explanation
1-Ramp Unit 1 to 100% R-ATC, US & N-BOP								S	
2-Failure of 1PK-131 Setpoint high I-ATC, US								S	
3-1A GS Exhauster fan trips C-BOP, US								S	
4-Degraded Bus volt-loss of bus 142 C-BOP, US & TS-US					х			S	
5-1RY455A PORV fails Open C-ATC, US & TS-US					Х			S	
6-Turbine trip-failure of auto Rx trip M-ALL						х	x	S	Repeat event from 2014 NRC Exam, Scenario 4.
7-Manual Rx trip for M Not C. C-ATC							x	S	Repeat event from 2014 NRC Exam, Scenario 4.
8-4 Stuck rods; emergency boration C-ATC								€S	If ATWS is present, why is it not a critical task to S/D reactor under all conditions? (Westinghouse CT-52?) Response: With Rx Pwr < 5%, this CT is not applicable.
9-LOOP-Loss of all AC Unit 1 M-ALL						х	Х	S	Repeat event from 2014 NRC Exam, Scenario 4.
9 Events	0	0	0	-	2	2	6	S	

8

Facility: BRAIDWOOD STATION	UNITS 1 a	and 2		Scer	nario: 3 (9	0% PMT	on 1MS01	8B)	Exam Date: May 29 – June 8, 2018
1	2	3	4	5	6	7	8	9	10
Event	Realism/ Cred.	Required Actions	Verifiable actions	LOD	TS	CTs	Scenario Overlap	U/E/S	Explanation
1-Perform PMT on 1MS018B N-BOP & TS-US					Х			S	
2-1CV112A diverts to the HUT C-ATC, US								S	
3-0A PW pump trips C-BOP, US								S	
4-RWST Lvl 1LT-932 fails low TS-US					Х			S	
5-1C HD pump fails C-BOP, US								S	
6-HD turbine runback R-ATC, US								S	
7-1PK-455 Setpoint fails high I-ATC, US & TS-US					Х			S	
8-1B MSIV fails closed M-ALL								S	
9-Loss of 1A CV pump C-ATC						Х		S	
10-1A & 1C RCFC did not swap to low speed C-BOP						Х		S	
10 Events	0	0	0	-	3	2	10	S	

Г

9

Inst	ructions 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 <b>no</b> 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
	<ul> <li>raising and lowering level, flow, and pressure</li> </ul>
	making decisions and giving directions
	acknowledging or verifying key alarms and automatic actions (Uncomplicated events that require no operator action beyond this
	should <b>not</b> 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 <b>not</b> 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.
	<ul> <li>In column 5, based on the reviewer's judgement, place a checkmark only if the scenario's LOD is not appropriate.</li> </ul>
	<ul> <li>In column 6, TS are required to be ≥ 2 for each scenario. (ES-301, D.5.d)</li> </ul>
	<ul> <li>In column 7, pre-identified CTs should be ≥ 2 for each scenario. (Appendix D; ES-301, D.5.d; ES-301-4)</li> </ul>
	• 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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Facility: FACIL		ΛE							Exam Date: DATES OF EXAM
	1	2	3	4	5	6	7	8	11
Scenario	Event Totals	Events Unsat.	TS Total	TS Unsat.	CT Total	CT Unsat.	% Unsat. Scenario Elements	U/E/S	Explanation
Scenario 1	11	0	3	0	2	0	0%	S	
Scenario 2	9	0	2	0	2	0	0%	S	If ATWS is present, why is it not a critical task to S/D reactor under all conditions? (Westinghouse CT-52?) This appears to be an unidentified pre-identified CT. <u>Response</u> : With Rx Pwr < 5%, this CT is not applicable.
Scenario 3	10	0	3	0	2	0	0%	S	
Instructions for Check or mark a 1, 3, 5 For eac This nu 2, 4, 6 For eac a. b. c.	Comple ny item(s h simulat mber sho h simulat <u>Events</u> betwee unsatis <u>TS</u> . A the tota <u>CT</u> . Cl Check	ting This ) requirin for scena ould matc for scena . Each e en at-the- factory e scenario al number neck that that each	Table: g comme rio, enter h the res rio, evalu vent is de controls a vents in o includes of unsat a scenar of tis es	ent and ex the <b>total</b> pective so ate each escribed o and balan column 2. at least tw isfactory io include cplicitly bo	xplain the number cenario fi event, T on a Forr ce-of-pla wo TS er TS entrie es at leas	e issue in of events rom the e S, and C n ES-D-2 ant applic atries/actions es/actions t two pre n Form E	a the space s (column 1 event-based T as (S)atis 2, including eants during ions across s in column e-identified ( ES-D-2 with	provided. ), TS entr d scenario sfactory, (I all switch the scena at least to 4. (ES-3 CTs. This measura	<ul> <li>ies/actions (column 3), and CTs (column 5).</li> <li>tables (the sum from columns 1, 6, and 7, respectively).</li> <li>E)nhance, or (U)nsatisfactory based on the following criteria:</li> <li>manipulations, pertinent alarms, and verifiable actions. Event actions are balanced ario. All event-related attributes on Form ES-301-4 are met. Enter the total number of wo different events. TS entries and actions are detailed on Form ES-D-2. Enter 01, D.5d)</li> <li>criterion is a target quantitative attribute, not an absolute minimum requirement.</li> <li>be performance standards (see Appendix D). Enter the total number of unsatisfactory</li> </ul>
	CTs in	column 6	i.	. ,				(2+	4 + 6\
7 In colur	nn 7, calo	culate the	percenta	age of un	satisfacto	ory scena	ario elemen <sup>-</sup>	ts: $(\frac{1}{1+})$	$(3+5)^{100\%}$
8 If the va	lue in co	lumn 7 is	> 20%, ı	mark the	scenario	as (U)ns	atisfactory	in column	8. If column 7 is $\leq$ 20%, annotate with (E)nhancement or (S)atisfactory.
9 In colur	nn 11, ex	plain eac	h unsatis	factory e	vent, TS	and CT	Editorial c	comments	can also be added here.
Save initial revie	w comme	ents and o	detail sub	sequent	commen	t resoluti	on so that e	each exan	n-bound scenario is marked by a (S)atisfactory resolution on this form.

Facility: FACILITY NAME Exam Date: DATES OF EXAM											
			0	PERATING	TEST TOT	TALS					
	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation					
Admin. JPMs	9	1	5	3		<ol> <li>SRO Admin JPM did not identify all Critical Steps. <u>Response</u>: JPM Tasking Standard modified to limit review scope; critical steps are now accurate. JPM is SAT.</li> <li>SRO Admin JPM duplicated the test topic of an SRO-Only Written Examination Question. (Q-91)</li> <li><u>Response</u>: JPM requires completion of paperwork and the written question focuses on the correct conditions required. JPM is SAT as written.</li> </ol>					
Sim/In-Plant JPMs	11	0	4	7		2 Simulator JPMs use the same system to address two different Safety Functions. (S-a & S-b both use the CVCS to address Safety Function 1 & 2 respectively) <u>Response</u> : Reference system for Safety Function changed to Pressurizer Level Control. JPM is SAT.					
Scenarios	3	0	0	3		There appears to be an unidentified pre-identified CT in Scenario 2, Event 8. This is identified on the Sample Scenario submitted for pre-review and is considered an enhancement based on facility correction of the error. <u>Response</u> : With Rx Pwr < 5%, this CT is not applicable.					
Op. Test Totals:	23	1	9	13	4%	Satisfactory Overall					
Instructions	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 simulator	total numbe scenarios c	er of (U)nsa olumn 8 in	tisfactory JI the previou	PMs and so s tables. P	cenarios from the two JPMs column 5 and rovide an explanation in the space provided.					
3.	Enter tota tables. Th	ls for (E)nha nis task is fo	ancements or tracking c	needed and	d (S)atisfac	tory JPMs and scenarios from the previous					
4.	Total each	n column ar	nd enter the	amounts ir	n the "Op. T	est Totals" row.					
5.	Calculate Total) and	the percent	age of the over	operating te bolded "%	est that is (L Unsat." cel	J)nsatisfactory (Op. Test Total Unsat.)/(Op. Test II.					
	Refer to E • sat • un:	S-501, E.3. isfactory, if satisfactory	a, to rate th the "Op. Te , if "Op. Tes	ne overall o est Total" "% st Total" "%	perating tes % Unsat." is Unsat." is >	st as follows: ₅ ≤ 20% > 20%					
6.	Update the required c	is table and ontent char	the tables nges, includ	above with ling the follo	post-exam owing:	changes if the "as-administered" operating test					
	• Th	e JPM perfo	ormance sta	andards we	re incorrect	t.					
	• Th	e administra s were inco	ative JPM ta	asks/keys v scenarios (	vere incorre	ect. og post scenario critical tasks defined in					
	A	ppendix D)		20010100	, not molduli						
	<ul> <li>The</li> <li>TS</li> </ul>	e EOP strat entries/act	tegy was in ions were d	correct in a letermined t	scenario(s) to be incorr	). ect in a scenario(s).					