

Facility: CLINTON POWER STATION										Exam Date: March/April 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		
													where place-keeping appears to be incomplete (steps circled but not slashed); this will likely be identified by the applicants as a discrepancy. <u>Response:</u> 1. Revised INITIATING CUE per Generic guidance (1 st page). 2. Per Facility Rep, the reactor core map is available in the MCR during core alterations as shown and is not modified as suggested by NRC. As an alternate "fix", added statement to Initial Conditions, "All core quadrants contain fuel assemblies". 3. Outline corrected. 4. Procedure references added to JPM steps. 5. Disagree. Per Facility Rep, the placekeeping utilized meets current station standards. <u>Validation Comments:</u> Determine how steps 8.12.23-26 should be filled out for detectors in STANDBY. Change validation time to 15 minutes. NRC: Changes made, this JPM is SAT.
SRO-A2 JPM556 Review CPS 9071.01A Diesel Driven Fire Pump A Operability Test	EC 2.2.12	3							X			E	<u>NRC:</u> 1. NOTE prior to JPM Step 1 states that steps 1 and 2 may be performed in any order. Why would step 2 be performed unless step 1 identified a deficiency? 2. The NOTE at the top of page 7 of 11 is applicable to the step 1 on the previous page. Note should be place prior to step 1 or embedded in step 1 as in the previous revision. 3. CUE prior to JPM Step 2 -- Copy of 1893.01 should only be provided when requested or alternatively provided as a set of procedures that can be used as reference. Suggest incorporating content of

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												S	<p>procedure cue into CUE at beginning of JPM</p> <p>4. Step numbers on page 16 of 22 of the provided 9071.01 mark-up are incorrect; step numbers are repeats of previous numbers. They should be 8.2.23 through 8.2.26.</p> <p>5. JPM Step 1 STANDARD needs to provide additional information to explain why the value recorded in steps 8.2.14 and 8.2.18[8.2.23] (page 16 of 22) are improperly recorded.</p> <p>a. If I understand the Caution 4.2.1 correctly, a contact pyrometer reading of 175 could indicate an actual engine coolant temperature of 195-203°F.</p> <p>b. The standard should be that the contact pyrometer reading of 175°F should have been recorded as read and not corrected, thus 175°F exceeded the acceptance criteria band of 140-172°F (corresponding to the normal band of 160-200°F if using installed temperature instrumentation).</p> <p>c. The referenced step related to engine runtime should be 8.2.19[8.2.24] (page 16 of 22).</p> <p>6. During the 2018 exam one or more applicants struggled with whether the DFP was still functional. With the contact pyrometer reading 175°F, the actual value could have been 195-203°F and therefore the actual engine coolant temp might have been below 200°F. This confusion might be eliminated by choosing a contact pyrometer reading of GTE to 180°F or providing a definitive statement that the DFP is NON-FUNCTIONAL if the DFP is continuously operated outside of the step 9.9.2 coolant temperature acceptance criteria.</p>

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													<p><u>Response:</u></p> <ol style="list-style-type: none"> 1. Note removed. 2. Step 1 split. Note placed before "applicable" Step 2. 3. Added cue to provide CPS 1893.01 UPON REQUEST. 4. Updated procedure to Rev. 000b which fixes numbering issue. 5. Step 01 JPM standard updated to explain that the normal engine coolant temperature ranges for temperature gauge 1TI-FP289 is 160°F - 200°F and surface contact pyrometer is 140°F - 172°F. 6. Changed actual recorded engine coolant temperature at step 8.2.14 and 8.2.23 to 180°F. <p><u>Validation Comments:</u> For non-critical portion of JPM step 03 Standard, remove all after "however,"</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>

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SRO-A3 JPM516 Select Volunteers and Authorize an Emergency Exposure for a Life- Saving Operation	RC 2.3.4	3							X			E S	<p><u>NRC:</u></p> <ol style="list-style-type: none"> Recommend removing the reference to RP-AA-203 from the last sentence of the initial conditions, simply leaving that a RP Supervisor has briefed the volunteers. In the CUE prior to JPM Step 01, add "when requested" to the last bullet. JPM Step 03; Nowhere in section 4.3.2 of EP-AA-113 is there any mention of a requirement for RP Management to sign EP-AA-113-F02 or any indication that the signature indicates that the volunteers have been briefed. The STANDARD for the step should simply be that the Examinee verifies that the volunteers have been briefed by recall of statement in the "INITIAL CONDITIONS" and by the volunteer's signature on F02. Consider combining JPM Step 03 and 04 [procedure steps 4.3.2.2 and 4.3.2.3] into one JPM step JPM Step 5 STANDARD needs to include the reason for rejecting Walter White (i.e., due to having received an emergency exposure in the past). <p><u>Response:</u></p> <ol style="list-style-type: none"> Reference to RP-AA-203 removed from Initial Conditions. Added "When requested" to EP-AA-113. Removed requirement for RP Management to sign (Step 03) and combined Step 03 and 04. Added reason for rejecting Walter White to the Step 05 STANDARD. <p><u>NRC:</u> Changes made, this JPM is SAT.</p>
SRO-A4 JPM572 Authorize Use of Potassium Iodide (KI)	EP 2.4.40	2							X			E(U) S	<p>FREE SAMPLE</p> <p><u>NRC:</u> Due to loss of RCS inventory below level 3, would there be a general containment isolation signal which affects multiple systems? And if so, does this mean SAF 1.7 of LS-AA-1110 would also be applicable?</p>

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													<p>If attachment 1 of OP-AA-106-101 is used it is possible the applicant will consider this "Any unexpected significant plant transient" and determine that the IEMA inspector will need to be contacted as well. I would not consider an IEMA notification for this event a critical step.</p> <p><u>Response:</u> JPM updated to show SAF 1.7 as well as 1.6.</p> <p><u>NRC:</u></p> <p>1. Replace JPM. Per NUREG 1021 ES 301, Section D.3.a; "For the "Emergency Plan" topic, only those K/As related to the emergency plan and implementing procedures (not those associated with the emergency operating procedures (EOPs)) are applicable to this part of the operating test." K/A 2.4.30 does seem to fit the category. Additionally, the postulated event does not involve implementation of the E-Plan.</p> <p><u>Response:</u></p> <p>1. Replaced JPM with JPM572 Authorize Use Of KI.</p> <p><u>Validation Comments:</u> Add note that the Dose Assessor is not available if asked.</p> <p>Melanie's badge number on the F-02 form should match that listed in the JPM Step 04 Standard.</p> <p>Add critical step for Emergency Director to sign and date F-03 form authorizing use of KI. This can be included as a bolded action in JPM Step 04.</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>
RO-A1.1 JPM552	COO 2.1.37	3							X			E	<p><u>NRC:</u></p> <p>1. TASK STANDARD should be more specific</p>

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			I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link		
S1; JPM562 Control Rod Difficult to Withdraw – RD Pump Trip (Alternate Path)	1 201001 A2.01	3	X										<p><u>NRC:</u></p> <ol style="list-style-type: none"> 1. ES-301-2 identifies this JPM as a Low Power/Shutdown type. Initial Conditions are at power approx 84%. 2. JPM Step 01; change procedure step reference to 8.3.4.2.b. 3. Place the CRD pump trip indications and initial response in new non-critical JPM Step [02] <ol style="list-style-type: none"> a. ELEMENT – Responds to trip of operating CRD pump. b. STANDARD – Observes trip indications (pump indicating light status, alarms (5068-3B, 4B)), refers to alarm response procedures, proceeds to 3304.01, Section 8.3.6, dispatches equipment operators to investigate trip. 4. JPM Step 02[03] unchanged except for JPM Step number. 5. JPM Step 03[04&05]; breakup into two separate steps. 6. JPM Step 04[06] – step is a Non-Critical Step (verification only). Procedure step reference should be 8.3.6.9. Pump status light verification should be part of JPM Step 3[04] 7. JPM 05[07&08] – break step into two separate steps; one for pump start and one for opening discharge valve. 8. JPM Step 06[09] – unchanged except for JPM Step number 9. Add new JPM Step [10] – directs local equipment operator to complete remainder of section 8.3.6 actions (sub-steps 16-23)

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			I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link		
													c. [04] open 1FW10B 3. JPM Step 03[05] – no change except for JPM Step number 4. Insert new JPM Step [06] a. ELEMENT – Responds to high vibration alarm b. STANDARD – Refers to alarm response procedure and recommends reducing turbine speed 5. JPM Step 04[07, 08 &09] – JPM Step should be broken-up into two separate steps; a. [07] stop Auto Bring Pump Online b. [08] reduce turbine speed i. Current specified action is contrary to ARP guidance which specifies response IAW section 8.3.8 of 3103.01 (insert 200 RPM speed bias) with direction to shutdown per section 8.1.10. ii. Regarding the CUE following JPM Step 04[08], given the current power level why wouldn't you lockout the RR FCVs (procedure step 8.1.10.1)? iii. If current direction is acceptable (procedurally driven), then step should address both methods as possible paths. Specify which is preferred. c. [09] Observes failure of speed to reduce below 2000 rpm and recommends tripping turbine IAW procedure section 8.1.10.4. (Procedure step 8.3.15 may be utilized if applicant determines an urgent need to trip the turbine). 6. JPM Step 05[10] – no changes except

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													JPM Step number 7. JPM Step 06[11] no change except JPM Step number <u>Response:</u> 1. Removed CP sentence from INITIATING CUE. 2. Split Step 02 into three steps as requested. 3. Revised step #. 4. Added new step 06 as requested. 5a. Split Step 04. Step 07 stops Auto Bring Pump Online. 5bi. FR states that guidance to introduce bias are not allowed since <u>both</u> TDRFPs are not in AUTO and therefore TDRFP 'B' should be secured IAW 8.1.10. 5bii. FR states that current guidance would be to lock out FCVs prior to bringing TRDRP on-line. Added INITIAL CONDITION to show RR FCVs are locked out. 5biii. No longer applicable based on 5bii above. 5c. FR states that candidate may continue to 8.1.10.4 or attempt to go to 8.3.15 but this goes right back to 8.1.10.4. 6. Revised step #. 7. Revised step #. <u>NRC:</u> Changes made, this JPM is SAT.

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			I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link		
S3; JPM501 Main Turbine Control Valve Tests	3 241000 A1.08	2	X									<p><u>NRC:</u></p> <ol style="list-style-type: none"> 1. Recommend termination of the JPM by the evaluator after completion of the 2nd CV. <ol style="list-style-type: none"> a. Performing all four control valves means unnecessary repetition. b. If all four valves are going to be tested, then procedure should be completed through 8.6.3 and verification of Acceptance Criteria. 2. Recommend breaking up JPM Steps 02 and 04 into two separate steps each (one step for each procedure sub-step. Simplifies grading. <p><u>Response:</u></p> <ol style="list-style-type: none"> 1. JPM (INITIAL CONDITIONS, steps) revised to terminate JPM after completion of the 2nd CV. 2. JPM Steps 02 and 04 were separated into steps each. <p><u>Validation Comments:</u> Change the validation time to 15 minutes.</p> <p>For JPM steps which include depressing and releasing the CV test pushbutton, make verification aspects of step non-critical.</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>	

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S4; JPM563 On-Line Testing of the Turning Gear Oil Pump 1TO04P	4 245000 A4.01	2			X							E S	<p><u>NRC:</u></p> <ol style="list-style-type: none"> JPM Step 02; Recommend changing the verification to a "Non-Bolded" font to ensure that those activities are not included with the critical step of positioning the control switch. JPM Step 03[03 and 04] – separate into two steps; one for test switch and one for pump control switch (verification activities non-bold font). JPM Step 04[05] see comment 1 JPM Step 05[06 & 07] see comment 2 JPM Step 06[08] see comment 1. Procedure sub-step references should be 1-3 JPM Step 07[09 & 10] separate into two steps; one for directing local operator to perform sub-steps 4 and 5 and one for pump control switch operation. JPM Step 08[11] no change except for JPM step number <p><u>Response:</u></p> <ol style="list-style-type: none"> Verification changed to a "Non-Bolded" font. Split Step 03 as requested. Verification changed to a "Non-Bolded" font. Split Step 05 as requested. Verification changed to a "Non-Bolded" font. Split Step 07 as requested. Revised step #. <p><u>Validation Comments:</u> Add statement in Initiating Cue that communications have been established with the EO at the 1TO04P.</p> <p>Change verbiage regarding field assessment of pump stopped, not using lowering oil pressure.</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>

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												S	<p>the examinee respond to a pump trip and prevent the standby pump from starting or trip it shortly following the start.</p> <p>b. If the JPM is not changed, then see comments to follow:</p> <p>2. JPM Step 01[01 & 02] – separate into two steps; activities are not directly related; as opposed to JPM Step 02[03] in which operation of the discharge valve is closely related to shutting down the pump.</p> <p>3. JPM Step 05[06] – Separate into four steps [06, 07, 08 & 09], one for each bullet</p> <p>a. The first two steps would be “critical”</p> <p>b. The second two steps would be “non-critical”</p> <p>4. Why is JPM Step 07[11] a “critical” step? Valve positions will be verified and repositioned as necessary on system restart.</p> <p><u>Response:</u></p> <p>1. FR is comfortable with Alternate Path narrative.</p> <p>2. Split Step 01 as requested.</p> <p>3. Split Step 05 as requested.</p> <p>4. FR concurs that Step 07 is <u>not</u> a critical step.</p> <p><u>Validation comments:</u> Move cue for venting CCW to before JPM Step 02.</p> <p>Remove bullet from Standard of JPM 04 regarding CC076A/B.</p> <p>Providing CPS 3317.02 is not required as applicant will only direct field actions IAW 3317.02 be performed.</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>

<p>S8; JPM565 Startup the Control Room Ventilation System (VC) in the High Radiation Mode (Alternate Path)</p>	<p>9 290003 A4.01</p>	<p>3</p>												<p><u>NRC:</u></p> <ol style="list-style-type: none"> Information for Evaluators Use (Pg 6 of 13) – Include the name/location of the regulatory basis document (e.g., USAR, commitment etc) supporting the designation of this JPM as TIME CRITICAL. JPM Step 03 – Place “Filter(Filt)” between “Supply” and “Train(Trn)” in both the ELEMENT and STANDARD statements. Since this event started with failure of the in-service train Supply Air Filter to properly align for the Hi Rad Mode, need to add a step (after 06) to verify proper system alignment (next to last step of HC) including the following: <ul style="list-style-type: none"> Alignment of Supply Air Filter Start of MU Fan Alignment of MU Filter flow path Isolation of Max Intake and Purge Dampers. Neither procedure sections 8.3.3, 8.3.9, nor Hard Card, include verification that 0VC04YA(B) is open. Is this intentional or an oversight? <p><u>Response:</u></p> <ol style="list-style-type: none"> Added “(ref: EC340118/Alternate Source Term) to the OP-CL-102-106 reference. Added “Filter” and “Filt” as requested to Step 03. Added new Step 07 to verify proper train response as requested. FR states that the omission of 0VC04YA(B) is intentional and would be verified when performing applicable portions of CPS 3402.01P001/2 (reference step 8.3.9.3/last step in Hardcard) as resources/conditions allow. <p><u>Validation comments:</u> Add to Task Standard use Hard Card or CPS 3402.01, Step 8.3.9.1.</p> <p>Move note after JPM Step 02 to before Step 02.</p> <p><u>NRC:</u> Changes made, this JPM is SAT.</p>
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P3; JPM533 RSP – Div 2 LPCI Operation	2 295016 AA1.07	2										E S	<u>NRC:</u> 1. Move the 2 nd sentence of the INITIATING CUE to the INITIAL CONDITIONS. <u>Response:</u> 1. Moved the 2 nd sentence of the INITIATING CUE to the INITIAL CONDITIONS. <u>NRC:</u> Changes made, this JPM is 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.

- 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)
- 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)
- 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: CLINTON POWER STATION					Scenario: 2 (Free Sample)				Exam Date: March/April 2021	
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(N); Drywell Vacuum Breaker Test							X	S	2018 Scenario 3, Event 1 Normal Event	
2(I, TS); HPCS Spurious Initiation					X			U E S	<p><u>NRC:</u> The D-2 indicates that the SRO will enter the instrumentation TS 3.3.5.1 B.2 and B.3 based on the HPCS spurious start. This contradicts the D-1 summary which indicates that only TS 3.5.1 B.1 and B.2 will be entered for HPCS itself. When the BOP shuts down HPCS manually, I expect that would make HPCS inoperable and therefore require TS 3.5.1 to be entered. Will the crew have adequate information available to them to determine the nature of the instrumentation fault which caused the spurious initiation and therefore be able to ALSO enter TS 3.3.5.1?</p> <p><u>Response:</u> We are giving them only the information needed to enter LCO 3.5.1. The D-2 has been corrected.</p> <p><u>NRC:</u></p> <ol style="list-style-type: none"> ATC&BOP actions – Recommend revising the EO dispatch to be more specific; e.g., Dispatch multiple EOs (at least 2) and from simply "... to investigate" to EOs "... check on and monitor EDG 1C and HPCS status" SRO Actions – Directs actions to shutdown EDG 1C (EDG should not be left running unloaded and EDG is not required to be operable if HPCS is not operable) SRO action to enter TS 3.5.1 should be a solid bullet. <p><u>Response:</u></p> <ol style="list-style-type: none"> Revised EO dispatch to 2 and added direction on where to go. Added actions to shut down EDG and closed TS bullet on SRO page. <p><u>Validation comments:</u> Add completion times and required actions for TS 3.5.1 B.1 and B.2.</p> <p><u>NRC:</u> Changes made; this event is SAT.</p>	
3(C); SA Compressor Trip							X	E S	2018 Scenario 5, Event 6 <u>NRC:</u> What is the timing of this event? Why wouldn't the check valve in the scram air header maintain the system pressurized for at least several minutes with a trip of the running SAC? Are you assuming the check valve is leaking by?	

									<p>Will the SDV automatic high-level scram work if the crew does not manually scram the reactor before the rod block is received? If it does, why is this a critical task? The plant is designed to automatically scram with a high SDV level which is of course higher than the SDV level which results in a rod block.</p> <p><u>Response:</u> Facility concurs, this is not a critical task.</p> <p><u>NRC:</u> 1. ATC actions – Remove reference to CT Failure BOP manually starts SAC</p> <p><u>Response:</u> Reference to CT failure removed.</p> <p><u>Validation comments:</u> Add open bullet for SRO directing placing the #2SAC into Standby and for BOP placing #2 SAC in standby. Add roll play verbiage for in field actions as necessary.</p> <p><u>NRC:</u> Changes made; this event is SAT.</p>
4(C, TS); RR Pump 'B' Hi Vibration & Emerg Shutdown					X			E S	<p><u>NRC:</u> Does validation show that exceeding the MELLLA boundary is expected during this transient?</p> <p><u>Response:</u> Yes</p> <p><u>Validation comments:</u> Add TS completion times and actions for LCO 3.4.1 B.1, C.1 and 3.2.1 A.1, 3.2.2 A.1, and 3.2.3 A.1.</p> <p><u>NRC:</u> Changes made; this event is SAT.</p>
5(R); Power Reduction						X		E S	<p>Reactivity Event</p> <p><u>NRC:</u> 1. Why is reducing power to less than 58% within 10 minutes a CT. I see nothing in the scenario (other than the CT-1 explanation) to indicate that the OPRM trip is disabled. Additionally, if Tech Specs allow 4 hours to restore power to 58%, where did 10 minutes come from? Is the simulator setup such that the plant is being operated outside of design limits? Is the simulator able to show power oscillations?</p> <p><u>Response:</u> The simulator is not being operated outside of plant limits. The simulator is only able to show "superficial" oscillations used for training on indications of oscillations, which are not sufficient to cause a scram. The OPRM scram will not cause a scram in the simulator due to modeling. Without an automatic scram function, reducing power is a critical task due to the importance of eliminating the thermal hydraulic instability at the resultant power level. Ten minutes was selected based on industry OPEX from River Bend, who had to manually scram the reactor 10 minutes after a similar event.</p> <p><u>Validation comments:</u> Reword CT1 to indicate that power should be lowered with CRAM rods below 65% based on exiting the MELLLA region within 10 minutes of tripping the 'B' RR pump.</p> <p><u>NRC:</u> Changes made; this event is SAT.</p>
6(C); RR Pump A Trips								E	<p><u>NRC:</u> What is the basis for tripping the reactor within 1-minute of the second RR pump tripping?</p>

									<p>b. T&P Injection (Detail F2)</p> <p>4. RO Actions EOP-1/EOP1-A -- Move EOP-1A Action list from EOP-1A/EOP-3 Actions to EOP-1/EOP-1A Actions list; Change EOP1A/EOP-3 Actions to simply EOP-3 Actions</p> <p>5. BOP Actions – Move EOP-1A Action list from EOP-1A/EOP-3 Actions to EOP-1/EOP-1A Actions list; Change EOP1A/EOP-3 Actions to simply EOP-3 Actions</p> <p>a. Inhibiting ADS (is reference to Timer and RPV level necessary)</p> <p>b. T&P HPCS and LPCS/LPCI</p> <p>6. ATC/BOP Actions – As part of EOP-3 actions, add bullet to ensure Detail F2 systems Terminated and Prevented</p> <p>7. ATC/BOP Actions following EOP-3</p> <p>a. Change “FRV 1FW004 Fails Shut” to “Level Recovery following Blowdown”</p> <p>b. Add bullet to beginning of list -- waits until RPV Pressure < 150 psig</p> <p>c. Add same direction for BOP as ATC for using CD/CB to recover level.</p> <p><u>Response:</u></p> <p>1. No.</p> <p>2. Actions moved and bullets added as described.</p> <p>3. Bullets added as described.</p> <p>4. Actions moved and bullets added as described.</p> <p>5. Actions moved and bullets added as described.</p> <p>6. Bullets added as described.</p> <p>7. Change made and bullet added as described.</p> <p><u>NRC:</u> Changes made; this event is SAT.</p>
8(C); 1FW004 Fails Shut								S	ATC/BOP manually maintains RPV level with FW/CD
8	0	0	0	0	2	2	6	S	<u>NRC:</u> Changes made; this SCENARIO is SAT.

Facility: CLINTON POWER STATION					Scenario: 3			Exam Date: March/April 2021	
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(N); Shutdown RHR A							X	E S	<p>Normal Event Similar to 2018 Scenario 4, Event 1 <u>Response:</u> While this is similar, this event requires use of a different portion of the procedure. 2018 S4E1 was securing from suppression pool cooling (CPS 3312.01, section 8.1.10), and this is securing RHR operation in pool to pool mode (CPS 3312.01, section 8.2.10). This is still a new event. D <u>Validation comments:</u> Add closed bullet for opening RHR Heat Exchanger Bypass Valve to BOP. <u>NRC:</u> Changes made; this event is SAT.</p>
2(R); Raise Power to 15%								S	<p>Reactivity Event</p>
3(C, TS); Uncoupled Rod					X		X	E S	<p>2018 Scenario 5, Event 4 1. In Uncoupled Rod actions section ARP referred to should be 5006-5G <u>Response:</u> ARP number corrected. <u>NRC:</u> Changes made; this event is SAT.</p>
4©; Trip of MSOP w/ESOP Auto-Start Failure								E S	<p>1. BOP Actions – add that the ESOP control switch must be held in the start position for 5 seconds or the ESOP will not continue to run. BOP manually starts ESOP <u>Response:</u> Added 5-second requirement. <u>Validation comments:</u> Simulator Fidelity issue for ESOP starting without holding control switch for 5 seconds. (Need SWR info). <u>NRC:</u> Changes made; this event is SAT.</p>
5(C); RWCU Demin Trip							X	E S	<p>2019 Scenario 3, Event 6 1. Consider adding to the ATC Action for throttling F044 "... and prevents isolation and shutdown of RWCU system." [this is the only verifiable action.] ATC throttles RT flow with F044 bypass valve <u>Response:</u> Added words as described. <u>Validation comments:</u> Open bullet for SRO to notify RP and Chemistry. <u>NRC:</u> Changes made; this event is SAT.</p>

Facility: CLINTON POWER STATION					Scenario: 3			Exam Date: March/April 2021	
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
6(I); RCIC Auto-Isolation Failure					X			E S	1. BOP Action – Revise to state that isolation can be completed by closing 1E51-F063 and/or F064 2. Include Tech Spec action completion times <u>Response:</u> 1. Revised to include 1E51-F063 and/or F064. 2. Added TS completion times. <u>Validation comments:</u> Closed bullet for F063 (Div 2), open bullets for F064 and RCIC Turbine Trip. <u>NRC:</u> Changes made; this event is SAT.
7(M); Suppression Pool Leak						X(2)	X	E S	2018 Scenario 5, Event 8 1. Add Cues; 5013-5D; 5064-7C; Lowering Supp Pool level 2. 5013-6D is listed as an expected alarm but I see no link to the event if the leak is contained to the LPCS room. 3. SRO/BOP/ATC Actions -- Consider adding open bullets for directing the removal of the LPCS/RHR control power fuses. 4. BOP Action – action for holding SP level, should be "... attempts to hold SP Level" <u>Response:</u> 1. Cues added. 2. Removed 5013-6D from expected alarms. 3. Added open bullets for directing removal of fuses. 4. Corrected BOP action. <u>Validation comments:</u> Add procedure step info for BOP for filling SP IAW CPS 3220.01/ CPS 3318.01 and dumping upper pools IAW CPS 4411.03. <u>NRC:</u> Changes made; this event is SAT.
8©; LPCS Suction Valve Fails to Close			X				X	E S	2018 Scenario 5, Event 9 Event appears to be part of the Major (i.e., Unisolable Suppression Pool Leak) and cannot be credited as a separate/post EOP entry event, since there are no additional verifiable actions. Combine this with Event 7 as one event. <u>Response:</u> Added failure of ADS as an after major event; mitigation strategy is to manually open 7 ADS valves.

Facility: CLINTON POWER STATION					Scenario: 3				Exam Date: March/April 2021	
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	
									<u>NRC</u> : Changes made; this event is SAT.	
8	0	0	1	0	2	2	3	S	<u>NRC</u> : Changes made; this SCENARIO is SAT.	

Facility: CLINTON POWER STATION					Scenario: 4				Exam Date: March/April 2021	
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(N); HPCS Pump Operability								E S	1. As a Normal event the surveillance test should be run at least long enough to establish the data taking condition (i.e., through step 8.2.8) before failing the discharge valve. <u>Response:</u> Modified event to fail discharge valve after reaching 5000gpm and following a 2-minute time delay to give operator time to work through more of step 8.2.7. <u>NRC:</u> Changes made; this event is SAT.	
2(C); Failure of HPCS Pump Disch. Valve		X						E S	1. The first bullet associated with the discharge valve failure would then be to recognize the changes in: <ol style="list-style-type: none"> Decreasing flow Min flow valve reopening Abnormal suction pressure alarm (?) 2. SRO Actions – Add: “Provides direction for backing out of the surveillance test.” As a minimum include the following: <ol style="list-style-type: none"> Shutting F010 and F011 Placing MOV Test Prep switch in NORMAL 3. SRO Action – add item to evaluates Tech Specs for changes in required actions and determine no additional actions are required. 4. BOP Actions – Add actions, as directed, to back out of test. <u>Response:</u> <ol style="list-style-type: none"> Added bullet as described. Added actions as described. Added action as described. Added action as described. <u>NRC:</u> Changes made; this event is SAT.	
3(R); Raise power								S		
4(C, TS); Rod drift out					X		X	E S	2018 Scenario 3, Event 3 1. ATC Actions – Add bullet for identifying the drifting rod. 2. SRO Actions – Enters <u>and implements</u> CPS 4007.02; directs individual scrambling of rod; directs test switches returned to normal <u>after</u> rod is hydraulically isolated.	

Facility: CLINTON POWER STATION					Scenario: 4			Exam Date: March/April 2021	
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
									3. Include Tech Spec action completion times <u>Response:</u> 5. Added bullet identifying drifting rod. 6. Added words as described. 7. Included TS action completion times. NRC: Changes made; this event is SAT.
5(I); EHC Temp Controller Fails								S	<u>Validation comments:</u> Initiation statement on D-2 should say, "Following Event 4..." Verify that EHC Temperature controller is correctly labeled and indicated properly for a controller failing the TCV open in AUTO.
6(TS); 1SM001A loss of control power		X			X			E S	1. If one-time fuse replacement is directed, need role play; e.g., fuse replaced then blows, or maintenance personnel do not recommend replacement, or when door opened to replace fuse, some charring is noticed. <u>Response:</u> Added role play. NRC: Changes made; this event is SAT.
7(C); TDRFP High Bearing Temperature		X						E S	1. SRO/ATC Actions – guide should specify the preferred manner of stopping the feed-pump. Absent any conditions other than the high temperature, the preferred method appears to be shutdown IAW with section 8.1.10 of 3103.01 2. SRO Actions – add the following items a. Refers to 3103.01 (FW), section 8.3.6 (High Temp TDRFP Bearings), Recognizes that at the current power starting a standby pump is unnecessary prior to shutdown of TDRFP 1B. b. Directs that TDRFP 1B be shutdown IAW 3103.01 section 8.1.10; authorizes lockout of RR FCVs. <u>Response:</u> Added preferred manner of stopping feed pump and added actions discussed in (2). <u>Validation comments:</u> Add major steps for shutting down the 'B' TDRFP per 8.1.10. NRC: Changes made; this event is SAT.
8(M); Inadvertent Group 1 Isolation with ATWS						X(3)		U	This does not appear to be a repeated event from the last two NRC exams. D-1 should be update (i.e., listed as NEW) 1. ATC Actions – add sub-bullets to SCRAM Choreography to insert control rods (beginning with CRAM array) unless prevented by RPC and stabilize FW

Facility: CLINTON POWER STATION					Scenario: 4			Exam Date: March/April 2021	
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
								S	<p>2. ATC Actions – add sub-bullets for T&P of Cond/Feed listing major actions (e.g., shut FW004, shut TDRFP discharge valves, TDRFP SLIM in Manual and Min, etc.)</p> <p>3. ATC Actions -- add bullet to Inject with RCIC (may require reset of RCIC turbine if RCIC was T&P) when directed and maintain RPV level between -162" and -60"</p> <p>4. BOP Actions – During the SCRAM Choreography, the bullet for starting SLC should simply state "If power is >5%, Then Initiates SLCO per the HC [reports initiation to SRO]. It can be flagged as [CT-1].</p> <p>5. BOP Actions directed by SRO per EOP-1A</p> <ol style="list-style-type: none"> Move Inhibiting ADS to top of List. Consider adding blocks/lines to record time that ADS is inhibited and start time of ADS 105-second timer. [U] CT-3 should be based on preventing injection from low pressure systems before they inject. Simply getting to Level 1 will not result in injection, RPV pressure must lower below shutoff head values for the pumps. The boundary condition should include level 1 and RPV pressure < shutoff head of pumps. Consider adding a block/line as one of the sub-bullets (next comment) to record RPV Level and pressure when T&P is complete. add bullets/sub-bullets to highlight major actions for T&P of ECCS/RCIC [depending on timing, it may be undesirable to T&P RCIC] add bullet to Inject with RCIC (may require reset of RCIC turbine if RCIC was T&P) when directed and maintain RPV level between -162" and -60" <p>6. SRO Actions – Just before SCRAM Choreography, add bullet "Ensures ATC and BOP operators perform applicable choreograph actions."</p> <p>7. SRO Actions following SCRAM Choreography Update</p> <ol style="list-style-type: none"> The first ATWS action (per EOP-1A sequence of steps)directed by SRO should be to inhibit ADS, quickly followed by verification SLC initiation (assuming power >5%), and direction to lower RPV water level (to reduce subcooling) Then alternate control rod insertion. Bullet for use of RCIC should state "When RPV Level is < 60", Directs BOP/ATC to start/restart injection with RCIC RCIC and maintain RPV level between -162" and -60" <p><u>Response:</u></p> <ol style="list-style-type: none"> Added sub-bullets as described. Added sub-bullets as described. Added bullet as described. Changed bullet as described.

Facility: CLINTON POWER STATION					Scenario: 4			Exam Date: March/April 2021	
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
									5. ADS moved to top of list, bullets added as described, and modified CT-3 to state "...and pressure lowers below 472psig. 6. Added bullet as described. 7. Altered order and changed bullets as described. <u>Validation comments:</u> Add contingency CT5 which approximately states, if RPV Level < TAF and no systems are injecting, Emergency Depressurize per EOP-3 within 17.5 minutes. <u>NRC:</u> Changes made; this event is SAT.
9(C); MDRFP trip w/RCIC Auto-start Failure						X(2)	X	E S	2018 Scenario 3, Event 8 See comments for Event 8 <u>NRC:</u> Changes made; this event is SAT.
9	0	2	0	0	2	5	7	S	<u>NRC:</u> Changes made; this SCENARIO is SAT.

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.

Facility: Clinton									Exam Date: March 29 – April 2, 2021	
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	
2	8	0	2	0	2	0	0	S		
3	8	0	2	0	2	0	0	S		
4	9	0	2	0	5	1	6.3	S	CT3 needs a correct boundary condition including RPV pressure below shutoff head of the LPCI/LPCS pumps. Addressed by adding RPV pressure value for injection. Contingency CT5 added to Emergency Depressurize if RPV Level < TAF with no injection sources operating.	

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:
- 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.
 - 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)
 - 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: CLINTON				Exam Date: March 29 – April 2, 2021		
OPERATING TEST TOTALS						
	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
Admin. JPMs	9	0	9	0		SRO A4 Admin JPM was replaced to conform with EP Admin JPMs per the NUREG
Sim./In-Plant JPMs	11	0	10	1		
Scenarios	3	0	3	0		
Op. Test Totals:	23	0	22	1	0	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 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).