Facility: W3 2018-11 **Exam Date: NOV 5, 2018**

Admin JPMs	1 ADMIN Topic and K/A	2 LOD (1-5)	3 Attributes							4 Job Content		5 U/E/S	6 Explanation
			I/C Focus	Cues	Critical Steps	Scope (N/B)	Overlap	Perf. Std.	Key	Minutia	Job Link		
A1	CO 2.1.18	3	X					X				~~E~~ S	-Applicant needs TS 3.9.1 and the COLR to determine Refueling Min Boron Concentration Cf in step 4. Is this a part of the handout? [WAT3 9/24/18] Attachments are included in the eCart. -Add to end of initiating cue, " … through step 9.24.3 to determine the allowable amount of pure water that may be added to the Refuel Cavity." [WAT3 9/24/18] edited initiating cue as requested. -Add to comment in task element 4, "… per TS 3.9.1 and COLR." [WAT3 9/24/18] edited task element 4 as requested. -Edit task standard to be more specific: "Applicant calculated allowable volume of pure water that can be added to refueling cavity to be 1402 to 1477 gal, in conformance with the answer key." [WAT3 9/24/18] edited task standard as requested. [NRC 9/27/18 OK]
A2	CO 2.1.23	3						X				~~E~~ S	-Edit task standard to be more specific: "… and determined maximum time remaining to place shutdown cooling in service = 14.75 to 15.5 hours, in conformance with the answer key." [WAT3 9/24/18] edited task standard as requested. -task element 4 standard, replace "From Task Element 3" with "297,996 gal". [WAT3 9/24/18] edited task element 4 as requested. [NRC 9/27/18 OK]
A3	EC 2.2.14	4	X		X			X				~~E~~ S	-Initiating cue, replace "… for both events" with "for both Large Load Reject and Loss of Feed Pump events by …" [WAT3 9/24/18] edited initiating cue as requested. -Edit Task standard: "Applicant determined that Reactor Power Cutback can be aligned to Subgroup 5 for Large Load Reject event, but CANNOT be aligned for Loss of Feed Pump event. As a result …" [WAT3 9/24/18] edited task standard as requested. -Make task elements 3 and 6 critical. [WAT3 9/24/18] made task elements 3 and 6 Critical. Task element 6 – removed comment that allowed applicant to not check Subgroup 5 box in anticipation of having to take RXC out of service due to future step. [NRC 9/27/18 OK]
A4	RC 2.3.4	2						X			X	~~E~~ S	-Edit task standard to be more specific with actual value of 28 to 28.44 minutes. [WAT3 9/24/18] edited task standard as requested. -This JPM would be more discriminatory if a survey map was provided and the applicant had to determine on-contact work area Dose Rate of 950 mR/hr. [WAT3 9/24/18] The worker will go to the RDT area and point his infrared thermometer at the piping inputs to the RDT. The worker does not have to get close enough to the RDT to

													get on-contact radiation levels. Because of this, providing a survey map created too many uncertainties for the reviewers of this JPM. Recommend leaving as is. [NRC 9/27/18 The cue sheet can say "Use on-contact values to determine dose rate at work area." To eliminate uncertainties.] [NRC Post-Validation: W3 still working on survey map.] [WAT3 10/11/18] A survey map for this area is not readily available. This area is in containment and is not normally monitored by the radiation protection department and there survey maps are on computer only. In order to get a survey map, we will have to put RP on exam security and draw one from scratch. Must notify the applicants every time I put someone on exam security. Could be cuing? Is there any other way we can add to JPM A4? [NRC 10/12/18: Adding RP to exam security carries no cueing concerns. I'm sending you an example of a survey map we've used on a past exam for a similar JPM … not overly detailed.] [NRC 10/22/18: OK]
A5	CO 2.1.25	3		X								~~E~~ S	Is Attachment 7.3 supposed to be a handout? It is part of the answer key but is not part of handout 1 or 2, and as not listed on cover page. -It looks like Handout 2, Attachment 7.4., should not be handed out initially, because that would be cueing the flowpath up to that point. It would be cleanest to just give each applicant a full copy of EP-004-010 from the start. You can tab the start point of Att 7.2. [WAT3 9/24/18] Attachment 7.3 is <u>not</u> a handout at any point. Attachment 7.4 needs to be a handout because there is two calculations on it. Agree that the handout is cueing because it presently has only page 1 and 3 and GALATA is on page 1. The attachment needs to contain all three pages. Then it is not cuing because this attachment is referred to during any toxic chemical release to find how far away the plant is and if W3 is downwind. In summary recommend supplying attachment 7.2 and all of attachment 7.4 to the applicant as a handout. The applicant will have the rest of EP-004-010 available on Ecart. [NRC 9/27/18 Doesn't applicant need Attachment 7.3 to determine NaOH is a Large Hazard? Is the expectation that they just use eCart to get that information?] [WAT3 10/1/18] The applicant does need Attachment 7.3 to determine NaOH is a large hazard. Attachment 7.3 will be referenced using the eCart. [NRC Post-Validation: Revise initial cue to be more specific, per validator feedback.] [WAT3 10/11/18] Changed the initiating cue to "Determine correct tab (TAB A,B,or C) to implement in accordance with…". Changed the standard to include the correct tab (Tab C). [NRC 10/12/18: OK]
A6	CO 2.1.23	3						X				~~E~~ S	-Applicant handout doesn't include Att 2H 2I 2J 2K. [WAT3 9/24/18] Attachments are included in the eCart. -Edit task standard to be more specific: "Applicant identified two errors: inaccurate CSP volume calculation, and wrong attachment used to determine time remaining to place SDC in service. Applicant recalculated CSP Volume, Total Feedwater, Available Feedwater, and maximum time remaining to be on SDC = 14.75 to 15.5 hours, in conformance with the answer key." [WAT3 9/24/18] edited task standard as requested. [NRC Post-Validation: Provide filled-out attachments] [WAT3 10/11/18] The Handouts portion of the JPM directs the examiner to provide completed handouts of Attachments 2-G-2K. [NRC 10/12/18: OK]

A7	EC 2.2.14	1				X						~~U~~ S	~~-Edit initiating cue to " … approve if appropriate, and then …"~~ ~~[WAT3 9/24/18] added the suggested wording.~~ ~~-It looks like the applicant's handout should include a filled out figure 1.7.1.~~ ~~[WAT3 9/24/18] The SRO should independently determine power level using figure 1.7.1. Recommend leaving it as is.~~ ~~[NRC OK]~~ ~~-See comments JPM A3.~~ ~~[WAT3 9/24/18] Reviewed comments on JPM A3. Did not identify any that applied.~~ ~~-This "review for approval" JPM is not very discriminatory, given that the initial conditions state that the reason Reactor Power Cutback CEA subgroup selections are being re-evaluated is because Subgroup 11 is being placed on the Hold Bus. Not much discerning needed to identify that Subgroups 5 & 11 should not be selected in step 11.1.8.~~ ~~[WAT3 9/24/18] -The SRO must identify that subgroup 11 cannot be used for Reactor Power Cutback. Subgroup 11 will not insert on a RXC while on the hold bus but will insert on a Reactor trip. Agree that this is sort of a given with the initiating cue. The discerning portion for the SRO is what follows.~~ ~~The SRO must then evaluate if Subgroup 5 only can be used. Subgroup 5 only was good to use for the loss of load selection (fell between 20 and 69%) but does not fall between the loss of feed pump range (20-65%). Subgroup 5 only is determined to be 67% from the figure, which falls right between the two.~~ ~~Then, the SRO will determine that Reactor Power Cutback must be removed from service for a Loss of Feed Pump Event. The SRO must also identify the asterisk on this step and apply the note that RXC shall be removed from service completely if it cannot be aligned for a Loss of Feed Pump event.~~ ~~[NRC 9/27 – The steps required to complete attachment 11.1 are a discriminatory task, but that's the RO JPM. In this SRO JPM, attachment 11.1 is already calculated and performed correctly up until the last step, in which Subgroup 11 is inappropriately selected as previously discussed. This is the first step of meaning in this JPM, and is not very discriminatory because the given reason this task is being performed is that Subgroup 11 has been placed on the hold bus. That doesn't appear to me to provide enough discriminatory value to credit as an entire JPM.~~ ~~Under NUREG 1021 Rev 10 I would have just said give the SRO JPM A3, because some common admins were allowed between the two. Under Rev 11 though we can't do that, as all SRO admin JPMs have to be different at the SRO level.~~ ~~We can validate this but please have a different JPM available for validation as well.~~ [NRC Post-Validation: New JPM, Task Element 2 not critical] [WAT3 10/11/18] Changed task element 2 to "not critical". [NRC 10/12/18: OK]
A8	RC 2.3.11	2						X				~~E~~ S	-Edit task standard to clarify that release must be taken to terminate release within 2 hours, since 2 hours have elapsed. [WAT3 9/24/18] edited task standard to state that applicant determines that only 2 hours remain to comply with TS. -Should the units on the table values be included, e.g. hours, or is it usually just left as the number? [WAT3 9/24/18] the word "hour(s)" is not normally used in the Control Room. -Initiating cue: "Make any corrections as necessary, and identify required actions, if any." [WAT3 9/24/18] edited initiating cue as requested. Also added to the cue "and time requirements for these actions", since it was the time requirement was added to the standard.

													[NRC OK] [NRC Post-Validation: Clarity in initial conditions that purge is in-progress, starting at 2100 yesterday] [WAT3 10/11/18] Added "starting at 2100 yesterday" to the initial conditions. [NRC 10/12/18: OK]
A9	EP 2.4.41	3						X				~~E~~ S	-Edit task standard to be more specific. [WAT3 9/24/18] edited task standard to include that applicant declared FS1 – SAE within 15 minutes. [NRC OK]
Simulator/In-Plant JPMs	1 Safety Function and K/A												
S1	1	2										S	-Insert in-progress procedure and section name and designator before Task Element 1, same for all JPMs. [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. -Is step 7.4 critical? [WAT3 9/24/18], Closing the BAM Pump Recirc, BAM-126B, is not critical because it does not affect securing Emergency Boration and this valve will automatically close on a Safety Injection. [NRC Step 7.4 is to Open BAM-126B, not close it.] [WAT3 10/1/18] Changed step 7.4 to a CRITICAL STEP. [NRC Post-Validation: Validation time = 5 min.] [WAT3 10/11/18] Changed validation time to 5 min. [NRC 10/12/18: OK]
S2	4P	3						X				S	-Insert in-progress procedure and section name and designator before Task Element 1, same for all JPMs. [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. -Task Element 9 standard, add " … a returned switch to normal" [WAT3 9/24/18] Added "and returned switch to normal". [NRC OK] [NRC Post-Validation: Administer this JPM first before S-1, so that the applicant has time to review the P&Ls while in the holding area. Validation time = 10 min] [WAT3 10/11/18] Added to the schedule that S-2 will be started first. Changed the validation time to 10 minutes. [NRC 10/12/18: OK]
S3	4S	2										~~E~~ S	- Insert in-progress procedure and section name and designator before Task Element 1, same for all JPMs. [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. -Task element 16 – can JPM be set up so that initial flow on pump start is < 1000 gpm, so applicant has to raise flow? [WAT3 9/24/18] The applicant will be required to raise ACCW flow. When the pump is started there is less than 1000 gpm flow. Flow will only come up when the setpoint is

													lowered enough such that flow is greater than 1000 gpm. Updated the comment on Task 16 to reflect this. -Task element 17 – initial setup place Temp Indic Controller setpoint to > 95F. [WAT3 9/24/18] Leave as is because the procedure does not allow the setpoint to be above 95F (step 6.2.12). This would be equivalent to a component misposition. The applicant is still required to move the setpoint to 84°F. [NRC OK] [NRC Post-Validation: Val time 10 min. Specify in task standard range of 82F to 86F] [WAT3 10/11/18] Changed validation time to 10 minutes. Added "adjusted to 82F-86F" to the task standard. [NRC 10/12/18: OK]
S4	9	3										S	-Task Element 7 – examiner cue change to 50 gpm. [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. Changed examiner cue to 50 gpm. [NRC OK] [NRC Post-Validation: Val time 5 min. Specify WCT level 54.6%. Administer S4 stagger start first before S3.] [WAT3 10/11/18] Added 54.6% to task element 2. Changed the schedule to state that S4 will be staggered first when performed with S3. [NRC 10/12/18: OK]
S5	2	3										S	-Task Element 7 – is there a minimum total flow? [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. There is no minimum total flow for hot and cold leg injection identified or referenced in the procedure. [NRC OK] [NRC Post-Validation: Val time 15 min] [WAT3 10/11/18] Changed the validation time to 15 minutes. [NRC 10/12/18: OK]
S6	5	2										S	[WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. [NRC OK] [NRC Post-Validation: val time 2 min] [WAT3 10/11/18] Changed the validation time to 2 minutes. [NRC 10/12/18: OK]
S7	6	4										S	-Applicant cue sheet and Task element 1 examiner cue, specify " … both UATs are in service and ready for loading in accordance with …" [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. Added "and ready for loading". -Fast dead bus transfer is successful on 1A and 2A, correct? [WAT3 9/24/18] Yes [NRC OK]
S8	8	3										S	[WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. [NRC OK] [NRC Post-Validation: Val time 7 min] [WAT3 10/1/18] Changed the validation time to 7 minutes. [NRC 10/12/18: OK]
P1	2	2										S	Put in title of procedure being used before task element 1, OP-902-009 Appendix 34.0, RAS manual actuation. [WAT3 9/24/18] Added OP-902-009 Appendix 34.0, RAS Manual Actuation. When will decision be made as to what train will be tested on?

													[WAT3 9/24/18] We will check two or three weeks before the exam. Must be prepared for both trains because issues in the plant could cause a protected train swap. Step 3: Does station desire that applicant actually opens ESFAS Cabin doors? If not, make the first examiner note "SIMULATE OPENING DOORS ONLY". Provide a picture of the inside of the cabinet that examiner can hand to the applicant instead. [WAT3 9/24/18] The applicant will not open ESFAS Cabinet doors. Added "SIMULATE OPENING CABINET DOORS ONLY" to the step that would open them. The applicant and examiner can see (through the cabinet window) every component that must be manipulated for this JPM. No picture will be required. [NRC OK]
P2	3	2										S	For my own edification, what's the basis for the 54 minute TCA? [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. The basis for the 54 minute TCA is to isolate non-safety , non-seismic portion (purification portion) form the safety related portion of RWSP piping. The TCAs can be found in EN-OP-123. NUREG 1021 states: *If the applicant exceeds twice the validated time estimate for any JPM (including a time-critical JPM) because he or she has selected an incorrect procedure or operated the wrong equipment (despite being presented with sufficient plant feedback to correct the error), the examiner should stop the JPM … . However, if the applicant is on the correct path but has simply stopped making progress toward completing a non-time-critical JPM, the examiner should ask the applicant to describe the work to be done and how long it should take to complete the JPM. If the applicant does not then make timely progress toward completing the described actions, the examiner should inform the applicant that the allowed time for the JPM has elapsed and the applicant will be evaluated on the work completed.* So, in the first examiner note, state the following: "Time Critical Action is 54 minutes, however the JPM validation time is 15 minutes. If the applicant exceeds twice validation time (30 minutes) and is NOT making progress, the examiner should stop the JPM per the guidance of NUREG 1021 ES-302. If the applicant is still making progress, the examiner may allow the JPM to continue not to exceed the Time Critical Action time of 54 minutes." [WAT3 9/24/18] Added the above paragraph to the first examiner note. [NRC OK]
P3	4S	3										S	Add procedure name before Task Element 1. [WAT3 9/24/18] Inserted in-progress procedure and section name and designator before Task Element 1. [NRC OK] [NRC Post-Validation: Specify name plate nomenclature of regulator on the left. Specify transducer is mounted to the right] [WAT3 10/11/18] Added "located on the left side of the mounting" wherever the JPM references the air regulator. Added "located on the right side of the mounting" whenever JPM references the transducer. Adding the name plate nomenclature m added no value. The name plate nomenclature is not used in the procedure. [NRC 10/12/18: OK]
GENERAL JPM COMMENTS													

-Direct Bank JPMs are at the maximum allowed, 9 out of 11.
-New or Modified JPMs are at the minimum required, 2 out of 11.
-On ES-301-1 Admin Topics Outline, provide actual values for type codes and criteria at bottom of pages.

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: WAT						Scenario: 1			Exam Date: NOV 5 – 9, 2018
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

[NRC Post-Validation: Add applicable TS's to D1 initial conditions.
CT-3: Add Safety and ADV lift setpoints for reference.
[WAT3 10/11/18] Added the ADV and MSSV setpoints as a refererence.
[NRC 10/16: OK]

CT-3, clarify "This task is satisfied by performing … prior to closing the affected MSIV, AND commencing RCS depressurization towards <930 psia prior to lifting an Atmospheric Dump Valve or Main Steam Safety Valve on the affected SG."
[WAT3 10/11/18] Added this wording to CT-3
[NRC 10/12/18: "… , AND commencing", not "and commence". Remove "in automatic".]
[WAT3 10/17/18] Rephrased sentence to "AND commencing", and removed "in automatic" on D-1 and D-2.
[NRC 10/17: OK]

Event 2 – move Att 2 Restoring Charging and Letdown steps to after section E1. Att 2 step 7) add examiner note that applicant may need to take CVC-101 to close then open to reset isolation logic.
[WAT3 10/11/18] Attachment 2, Restoring Charging and Letdown, is in the correct location if the crew is not timely in starting another charging pump which is after step 1 in E1. Attachment 1 is also located in OP-901-112. Recommend leaving as is.
[NRC 10/12/18: Consistent with the procedural rearrangements already made to each scenario, I do not desire for an in-progress procedure to be broken up with subprocedures and then recommenced. As with the rapid plant downpower, I desire E1 to be documented straight through, and Att 2 to be placed after it, especially since the station does not believe that the crew will actually need to restore letdown if the event is identified and corrected expeditiously.]
[WAT3 10/17/18] Moved steps for restoring Charging and Letdown to after step 7 of OP-901-112.
[NRC 10/17: OK]

Event 2 – strike thru non-applicable pump combinations in Tables.
[WAT3 10/11/18] struck thru non-applicable pump combinations in Tables.
[NRC 10/12: OK]

Event 2 – TS call 3.8.1.1.d clarify in examiner note that TS 3.8.1.1.d was applicable and actions were satisfied at start of scenario, but now the 2 hour action requirement to check other affected components is applicable and required to be re-performed again. Clarify that the SRO WILL align AB Ch Pp.
[WAT3 10/11/18] Clarified TS 3.8.1.1d action throughout the D-1 and D-2. Clarified that the SRO WILL align Charging Pump AB.
[NRC 10/12/18: I need the examiner note regarding TS 3.8.1.1.d 2-hour action to be more specific, using the language above.]
[WAT3 10/17/18] Added suggested statement regarding TS 3.8.1.1 to Examiner Note on page 11 of D-2.
[NRC 10/17: OK]

Event 5 – examiner note clarify that booth will insert event 5 at 1180 MWe.
[WAT3 10/11/18] Updated the D-1 and D-2 that booth will insert event 5 at 1180 MW.
[NRC 10/12/18: The examiner note on page 26 is incomplete and says "**The Booth will insert event 5 at MW" ,** and the examiner note on page 23 still says: "**Event 5 (Turbine Fails to Manual) may be inserted at any time during the rapid plant downpower.**" .
[WAT3 10/17/18] Rephrased Event 5 Examiner Note (now on p 24) to state "the event will be inserted when turbine load is reduced to 1180 MW during the rapid plant downpower." Added "1180" to Examiner Note now on page 27.
[NRC 10/17: OK]

Event 5 OP-010-00 Att 9.10 clarify that ESI band is -0.069 TO +0.031 [WAT3 10/11/18] Added this band for ASI (page 32) [NRC 10/16: OK] Implement other fixes that were verbally discussed during validation.] [WAT3 10/11/18] Implemented other fixes that were identified during validation. [NRC 10/16: OK]									
1					X			~~E~~ S	-ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] – Credited SRO with TS. (The previous lead examiner had us remove these from the D-1s. [NRC 10/16: OK] -For all events where a TS or TRM 3.3.1 / 3.3.2 / 3.3.3 action statement is entered, specify all FUNCTIONAL UNITS or INSTRUMENTS affected, as well as the required actions. [WAT 9/27/18]- Verified all functional units, alarms, indications and required actions are indicated on the D-2 for this event. [NRC 9/28 – Functional units / instruments still have not been added to TS call in D1 and D2 What about 3.3.1 action 3? 3.3.2 action 20? Others?] [WAT 10/1/18] – Functional units affected have been added to the D-1 and D-2. TS 3.3.1 Action 3 is not applicable because the loss of 1 channel signifies that you are in Action 2. If 2 channels were inoperable, then Action 3 would be applicable. The same applies for TS 3.3.2 action 20. [NRC 10/16: OK]
2								S	-ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] – Credited SRO with TS. [NRC 9/28 – ATC can get credit for a C or an R but not both] [WAT 10/1/18] Updated the D-1 and 301-5. Gave the ATC credit for the R and not the C. [WAT3 10/11/18] Correction. Updated the ATC to only get a C. [NRC 10/12/18: OK]
3								S	
4		X						~~E~~ S	-Credit this event as a C – Component Malfunction for all applicants since all actions are in response to a tube leak. [WAT 9/24/18] – Credited this event as a Component Malfunction (C) for all applicants. [NRC 10/16: OK] -ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] – Credited SRO with TS. [NRC 10/16: OK] -There are varying ways to go about this, but I tend to think it's easier to read the examiner guide if all the steps of one procedure are kept together without interruption, with reference that subprocedures are attached behind. Please arrange the relevent procedures for this event as follows: OP-901-202 (INCLUDING TECH SPEC CALL AND TRANSITION CRITERIA] OP-901-212 E0 OP-901-212 ATT 2 OP-901-212 ATT 4 OP-901-212 ATT 3

									OP-010-005 ATT 9.10 [WAT 9/26/18] – Organized the D-2 as described above [NRC 10/16: OK] Start each procedure on a new page for this event, for easier reference by examiner [WAT 9/26/18] – Organized the D-2 as described above [NRC 9/28 Add the transition criteria for the next event to the end of OP-901-202 steps] [Put the SRO's tech spec call in bold so it stands out] [WAT 10/1/18] Transition criteria has been added to the end of OP-901-202 steps [WAT 10/1/18] tech Spec call on page 17 has been bolded [NRC 10/12/18: OK]
5								S	Roll the actions for Event 5 into Event 4 actions, and label the top of the page Event 4 / 5. Can Event 5 be triggered based on crossing a load setpoint, or is that going to be too unpredictable? [WAT 9/26/18] – Put event 5 actions in event 4 as described. Event 5 is best set for manual initiation as the evaluation team may not have evaluated everything they wanted previously [NRC 10/12/18: OK]
6								S	
7								S	
8								S	

It is acceptable to use procedure or step transitions as the bounding criteria for Critical Task accomplishment when necessary, but when practical it is generally preferable to use objective plant parameters as bounding criteria.
CT-1: How large of an impact will this SGTR have on RCS inventory and pressure? Consider bounding criteria to establish HPSI flow prior to prior to indication of RPV head voiding / prior to loss of SCM < 5F / etc, if one of these is practical / reasonable for the event.

[WAT 9/26/18] – When WF3 developed standardized Critical Tasks we looked at specific bounding criteria that could be met during a simulator scenario. When determining items that were critical in nature but may not be met through the confines of a reasonable simulator scenario, a standard was chosen based on procedure direction. This has been agreed to by Operations as acceptable criteria. The most objective criteria that I can think of would be when the fuel would start to become uncovered due to lack of action. This I do not believe will occur during the course of a simulator scenario. The bounding criteria of a procedure step will ensure that this task can be evaluated satisfactorily in the allotted time for the scenario.

CT-2: Evaluate options.

[WAT 9/26/18] – There is one half of this as objective criteria based on plant parameters and that is after RCS T_{HOT} has been reduced to less than 520°F. Meaning that it cannot be performed before that objective criterion is met. The bounding criteria on the back end of this task would probably be a dose limit to the public or the Control Room. This value will not be exceeded without fuel failure or the scenario running significantly longer than the scheduled time.

CT-3: OK

Facility: WAT						Scenario: 2			Exam Date: NOV 5 – 9, 2018
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
[NRC Post-Validation: D1 D2 Event 1: add functional units (5), (1c), (3c) [WAT3 10/11/18] Added the functional units as described to both the D1 and D2. [NRC 10/16: OK] There are 2 malfunctions after EOP entry not 1. [WAT3 10/11/18] Changed malfunctions after EOP entry to 2. [NRC 10/16: OK] Event 3 TS call add note "COLSS is INOP due to dropped CEA so DNBR and LPD can only be determined via CPC; this is an STA function and outside the scope of scenario." [WAT3 10/11/18] Added this not e on page 10 of the D-2. [NRC 10/16: OK] Event 3 OP-005-007 turbine load reduction section add note – "To comply w/ TS ____, load reduction below 70% power must commence [WAT3 10/11/18] Added to page 13, " To comply with TS 3.1.3.1, a load reduction below 70% power must commence within 15 minutes of the dropped CEA." [NRC 10/16: OK] Examiner Note end of scenario – This event is complete after … and Appendix 35 Split CCW actions are completed." [WAT3 10/11/18] Added to the Examiner Note at the end of the scenario- This event is complete after….and step 7 for verifying proper CCW operation are completed. This step contains the substep for splitting CCW headers. [NRC 10/16: OK] Implement other fixes that were verbally discussed during validation.] [WAT3 10/11/18] Implemented other fixes that were verbally discussed during validation. [NRC 10/16: OK]									
1								S	-ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] Credited TS-SRO on the D-1 [NRC 10/16: OK]
2								S	
3		X						~~E~~ S	-ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] Credited TS-SRO on the D-1 -Credit this as a C – Component malfunction for all operators, since the actions are all in response to a malfunction. [WAT 9/26/18] Credited this event as a component malfunction (C) for all applicants. [NRC 9/28 – ATC can get credit for a C or an R but not both] [WAT 10/1/18] Updated the D-1 and 301-5. Gave the ATC credit for the C and not the R. [NRC 10/16: OK] -Is there a minimum load reduction or rule of thumb for a single dropped CEA, to match tave to tref?

									[WAT 9/27/18] No minimum load reduction but maybe a thumbrule could be somewhere between 20-50MW but it is not written downanywhere [NRC 10/16: OK] -What is the target power for the downpower? [WAT 9/27/18] Target power is 70% [NRC 10/16: OK] ~~-When returning to the steps of an in-progress procedure after referencing another procedure, put the word "(cont.)" after the procedure title to show that it is not entry or reference to a new procedure.~~ ~~[WAT 9/27/18] I cannot determine how to comply with the above request while aligning the D-2 as described below~~ -There are varying ways to go about this, but I tend to think it's easier to read the examiner guide if all the steps of one procedure are kept together without interruption, with reference that subprocedures are attached behind. Please arrange the relevent procedures for this event as follows: OP-901-102 E0 (INCLUDING TECH SPEC CALL AND TRANSITION CRITERIA] OP-901-102 E1 OP-005-007 SEC 6.2 OP-901-212 E0 OP-901-212 ATT 2 OP-901-212 ATT 4 OP-901-212 ATT 3 OP-010-005 ATT 9.10 [WAT 9/27/18] – Organized the D-2 as described above [NRC 10/16: OK] Start each procedure on a new page for this event, for easier reference by examiner [WAT 9/27/18] – Organized the D-2 as described above [NRC 10/16: OK]
4								S	
5								S	
6						X		~~E~~ S	- CT-1 says "this task becomes applicable following the reactor trip and the loss of offsite power … should become applicable immediately on the reactor trip, correct? [WAT 9/27/18] This is applicable after the reactor trip, however if the operator chooses to use the boric acid pump flowpath, then when off-site power is lost they will have to use the gravity feed flowpath. If the operator chooses the gravity feed flowpath immediately following the reactor trip then this task is satisfied immediately after the reactor trip. The cues for which path to choose will become available after the reactor trip (2 stuck CEAs) and after the loss of offsite power. [NRC 10/16: OK]
7								S	
8								S	-Last page examiner note: will applicant have to take any action for step 9.1? [WAT 9/27/18] MSIVs will be open at this point and the BOP should have to close them [NRC 10/16: OK] -Last page Examiner note "this ievent is complete after the BOP has reduced turbine load in manual" <- is this supposed to be there? [WAT 9/27/18] This is an error and has been removed

									[NRC 10/16: OK]

Facility: WAT					Scenario: 3				Exam Date: NOV 5 – 9, 2018
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

[NRC Post-Validation:
Add TS that are currently applicable to D-1 turnover block.
[WAT3 10/11/18] Tech Specs were added to D-1 Turnover block.
[NRC 10/16: OK]

Event 6 triggered on RX trip.
[WAT3 10/11/18] The D-1 and D-2 have been edited to trigger Event 6 on the Rx trip.
[NRC 10/16: The D-2 page 23 still says "**Examiner Note Event 6 can be inserted at any time following event 5."**]
[NRC 10/17: Fixed - OK]

Event 7 Triggered on entry into 902-002
[WAT3 10/11/18] D-1 states that Event 7 is triggered once OP-902-002 has been entered. Updated the D-2 also.
[NRC 10/16: OK]

CT-1: Modify to bound completion prior to exiting SPTAs.
[WAT3 10/11/18] D-1 and D-2 has been edited to bound completion of CT-1 to exiting SPTA,s.
[NRC 10/16: OK]

CT-2 Clarify the bounding step is Step #1 of App 27
[WAT3 10/11/18] Bounded CT-2 with "prior to exiting step 11 of IC continuing actions". The step directs the crew to align a CS pump to a LPSI pump. This step is located in OP-902-008.
[NRC 10/16: Edit to " … IC-2 continuing actions."]
[NRC 10/17: Fixed - OK]

Event 2 – page 3 error says ATC recognizes RCS pressure channel failure.
[WAT3 10/11/18] Fixed. Now says "ENI Channel Failure"
[NRC 10/16: OK]

Event 3 – delete redundant note at end of event. Delete note "With the AB Electrical Bus aligned to Tran B ..". Add note, "Applicant must identify the list of cascading Tech Specs in OP-100-014 Attachment 6.6 for CCW train A. Identifying the list (or equivalent) is sufficient, it is not necessary to write down entry into all 15 tech specs."
[WAT3 10/11/18] Added the requested changes.
[NRC 10/16: OK]

Event 5/6 – move the relevant curves from OP-902-002 to SPTAs. Delete steps 9 and 10 since crew will have transitioned by then.
[WAT3 10/11/18] Made changes to D-2 as requested.
[NRC 10/16: OK]

Implement other fixes that were verbally discussed during validation.]
[WAT3 10/11/18] Implemented the other fixes that were verbally discussed during validation.
[NRC 10/16: OK]

1								S	ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] Event 1 is not TS related. [NRC 10/16: OK]
2						X		~~E~~ S	-For all events where a TS or TRM 3.3.1 / 3.3.2 / 3.3.3 action statement is entered, specify all FUNCTIONAL UNITS or INSTRUMENTS affected, as well as the required actions. [WAT 9/24/18] Credited TS-SRO on the D-1 [NRC 9/28 – This does not appear to have been incorporated into D-2. Looking for the functional units from table 3.3-1] [WAT 10/1/18] – Functional units affected have been added to the D-1 and D-2 [NRC 10/16: OK]
3								S	ID this as a TS credit for the SRO on the D-1. [WAT 9/24/18] Credited TS-SRO on the D-1 List the cascading TS explicitly in scenario narrative and D-2. Page 7 and 8 have redundant discussions about TS. [NRC 10/16: OK]
4		X						~~E~~ S	-Credit this as a C – Component malfunction for all operators, since the actions are all in response to a malfunction. [WAT 9/26/18] Credited this event as a component malfunction (C) for all applicants. [NRC 9/28 – ATC can get credit for a C or an R but not both] [WAT 10/1/18] Updated the D-1 and 301-5. Gave the ATC credit for the C and not the R. [NRC 10/16: OK] -See scenario 1 and 2 comments about rearranging procedures in the downpower event. [WAT 9/26/18] – Organized the D-2 as described above [NRC 10/16: OK]
5								S	
6						X		~~E~~ S	Page 25 CT-1 specify the step # by which this task must be completed - is it 8 or 9? Include in front matter as well. [WAT 9/27/18] Updated in both places to show step 9 [NRC 10/16: OK]
7								S	

It is acceptable to use procedure or step transitions as the bounding criteria for Critical Task accomplishment when necessary, but when practical it is generally preferable to use objective plant parameters as bounding criteria. Evaluate if parameter-based / time-based bounding criteria are practical for CT-1/ CT-2
[WAT 9/27/18] There are two safety significant reasons for securing RCPs in the EOPs. One is to prevent a RCP seal LOCA based on a loss of CCW flow that occurs on a Containment Spray signal. The other is to reduce mass loss out of the break (by RCPs continuing to run) and lead to a longer delay in reflood exposing the fuel longer and raising the possibility of fuel damage. This would degrade a fission product barrier more than if RCPs were stopped. Because the scenario does not include fuel damage as a result, the procedure step was chosen as a basis for having to complete this step. The basis for a RCP seal LOCA

(which has a criteria of 3 minutes) was not chosen because the RCS is already at Large Break LOCA conditions and another LOCA from the RCPs would not degrade the RCS fission product barrier further. CT-2 is bounded by procedure action step because no objective criteria could be used as bounding regarding RCS level as this is a beyond design basis event and no objective RCS level criteria or CET temperatures could be determined as an acceptable standard of performance.
Does CT-1, Trip any RCP exceeding operating limits, apply to other scenarios?
[WAT 9/27/18] This is also written as a critical task in scenario #4

This scenario must be administered (on Weds or Thurs) because it contains an EOP Contingency procedure.

Facility: WAT					Scenario: 4				Exam Date: NOV 5 – 9, 2018
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
[NRC Post-Validation: Spare Scenario. CT-2: Modify to bound completion prior to exiting SPTAs. [WAT3 10/11/18] Modified CT-2 to bound completion prior to exiting SPTAs. [NRC 10/16: OK] Update reactivity plan so that rod movement is not yet required. [WAT3 10/11/18] Updated the reactivity plan. [NRC 10/16: OK] Event 2 remove examiner note and steps related to placing gland seal steam in service [WAT3 10/11/18] Removed the examiner note and steps related to placing gland steam in service. [NRC 10/16: OK] Event 4 – remove statement "3.3.3.6 – no actions required" [WAT3 10/11/18] Removed statement "3.3.3.6-no actions required". [NRC 10/16: OK] Event 5 – add note that BOP will start DCT fans as needed to lower CCW temperature." [WAT3 10/11/18] Added not that the BOP will start DCT fans as needed to lower CCW temperature. [NRC 10/16: OK] Event 6/7/8 – document that ESDE will be inserted after MVA is verified. [WAT3 10/11/18] Documented that ESDE will be inserted after MVA is verified. [NRC 10/16: OK] Implement other fixes that were verbally discussed during validation.] [WAT3 10/11/18] Implemented other fixes that were verbally discussed during validation. [NRC 10/16: OK]									
1								S	
2								~~E~~ S	TS event – document on D1 [WAT 9/24/18] Credited TS-SRO on the D-1 [NRC 10/16: OK] -For all events where a TS or TRM 3.3.1 / 3.3.2 / 3.3.3 action statement is entered, specify all FUNCTIONAL UNITS or INSTRUMENTS affected, as well as the required actions. [WAT 9/27/18]- Verified all functional units, alarms, indications and required actions are indicated on the D-2 for this event. [NRC 10/16: OK]

3								S	CRS may need to be prompted to resume startup. WAT 9/27/18]-CRS did not need prompting during validation of this scenario. [NRC 10/16: OK]
4								S	TS event – document on D1 [WAT 9/24/18] Credited TS-SRO on the D-1 [NRC 10/16: OK] Will letdown isolate on this event? Need to be restored? [WAT 9/24/18] Letdown does not isolate on this event. [NRC 10/16: OK]
5								S	
6								S	
7								S	
8								S	CT-2 specify the step # that CT needs to be accomplished by. [WAT 9/24/18] Added the step number for OP-902-004 for CT-2. It is step 27. [NRC 10/16: OK – modified post-validation to used SPTAs as bounding criteria.]

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: Waterford 3								Exam Date: Nov 5-9, 2018	
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	8	0	3	0	3	0	0	~~E~~ S	
2	8	0	2	0	2	0	0	~~E~~ S	
3	7	0	2	0	2	0	0	~~E~~ S	
4	8	0	2	0	3	0	0	~~E~~ S	
									All comments resolved post-validation prior to administration. All final exam materials Sat.

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: Waterford 3 **Exam Date:** Nov 5-9, 2018

OPERATING TEST TOTALS

	Total	Total Unsat.	Total Edits	Total Sat.	% Unsat.	Explanation
Admin. JPMs	9	1	8	0		
Sim./In-Plant JPMs	11	0	1	10		
Scenarios	4	0	4	0		
Op. Test Totals:	24	1	13	10	4.1%	All comments resolved post-validation prior to administration. All final exam materials Sat.

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).