PSEG Nuclear LLC

Job Performance Measure

DETERMINE TIME TO MAKEUP TO UNIT 2 RWST

JPM Number: 21-01 NRC RO-A1.b

Revision Number: 0

Date: 08/16/2022

Developed By:	**R. Chan** **Instructor**	**Date:**	8/16/22
Validated By:	**J. Militti / J. DeLisle** **SME or Instructor**	**Date:**	8/16/22
Reviewed By:	**M. Winkelspecht** **Operations Representative**	**Date:**	11/29/22
Approved By:	**M. Wadusky** **Training Department (Print/Sign)**	**Date:**	11/29/22

REVISION RECORD (Summary)

Revision Number	Date	Reason
00	8/16/22	New JPM. Converted to new template.

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

NOTE

All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 and 11 below.

RC 1. Task description and number, JPM description and number are identified.

RC 2. Knowledge and Abilities (K/A) references are included.

RC 3. Performance location specified. (in-plant, control room, or simulator)

RC 4. Initial setup conditions are identified.

RC 5. Initiating and terminating cues are properly identified.

RC 6. Task standards identified and verified by SME review.

RC 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*)

RC 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure:

Procedure(s) S2.OP-SO.CVC-0006 Rev. 25 Date Checked: 8/16/22
S2.RE-RA.ZZ-0012 Rev. 228
S2.OP-TM.ZZ-0002 Rev. 8

RC 9. Pilot test the JPM:

a. Verify cues both verbal and visual are free of conflict, and

b. Ensure performance time is accurate.

N/A 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.

N/A 11. When JPM is revalidated, SME or instructor sign and date JPM cover page

R. Chan	8/16/22
SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP INSTUCTIONS

1. None, this is an Admin JPM.

SPECIAL INSTRUCTIONS

1. Copies of S2.OP-SO.CVC-0006 (section 5.8.3 only), S2.RE-RA.ZZ-0012, S2.OP-TM.ZZ-0002, and calculator for each applicant.

INITIAL CONDITIONS

- Salem Unit 2 is at 100% power
- You are the RO on-shift
- Make-up to the RWST is required to restore level to the Tech Spec minimum
- Current RWST level is 40.0 feet
- Current RWST boron concentration is 2360 ppm
- Current BAST boron concentration is 6900 ppm
- Section 5.8.3 of S2.OP-SO.CVC-0006, Boron Concentration Control, will be used to make-up to the RWST.

INITIATING CUE

- The CRS directs you to perform the following:
  1. DETERMINE the boric acid flowrate to make-up to the RWST from the BAST tanks.
  2. DETERMINE the amount of time required to raise the RWST level to the MINIMUM Tech Spec level.
- Record your response on the Cue Sheet.

TASK STANDARD:

The task is satisfactorily met when the applicant has determined a boric acid flowrate of 26 gpm and will take 59.2 minutes to raise the RWST level to the Tech Spec minimum level.

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Information for Evaluators Use:

UNSAT requires written comments on the respective step.

(*) **Denotes critical steps**

If Time Critical, estimated time is the Time Critical time.

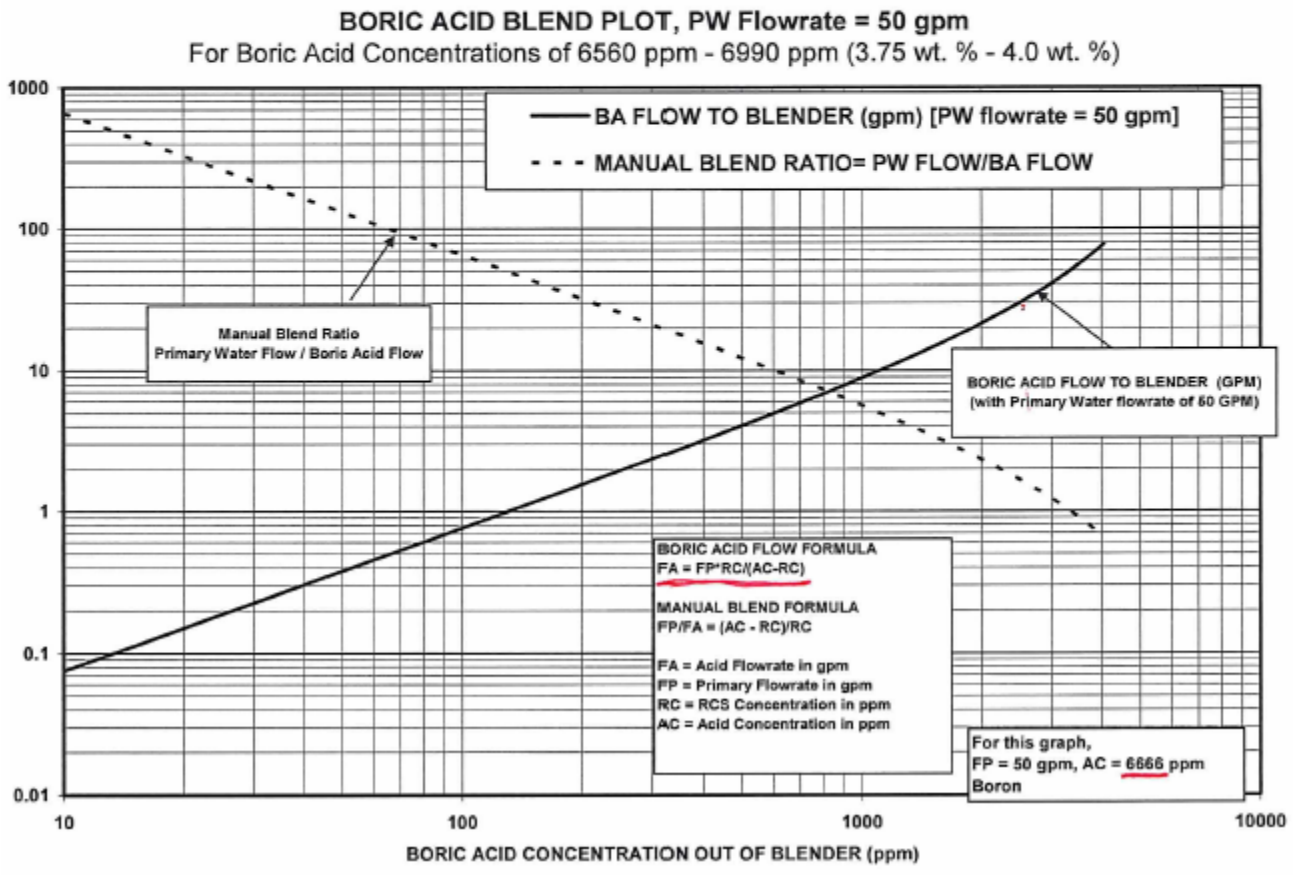
The comment section should be used to document the reason that a step is marked as unsatisfactory and to document unsatisfactory performance relating to management expectations.

Some operations that are performed from outside of the control room may require multiple steps. These items may be listed as individual steps in this JPM. It is acceptable for the candidate to direct the local operator to perform groups of procedure steps instead of calling for each individual item to be performed.

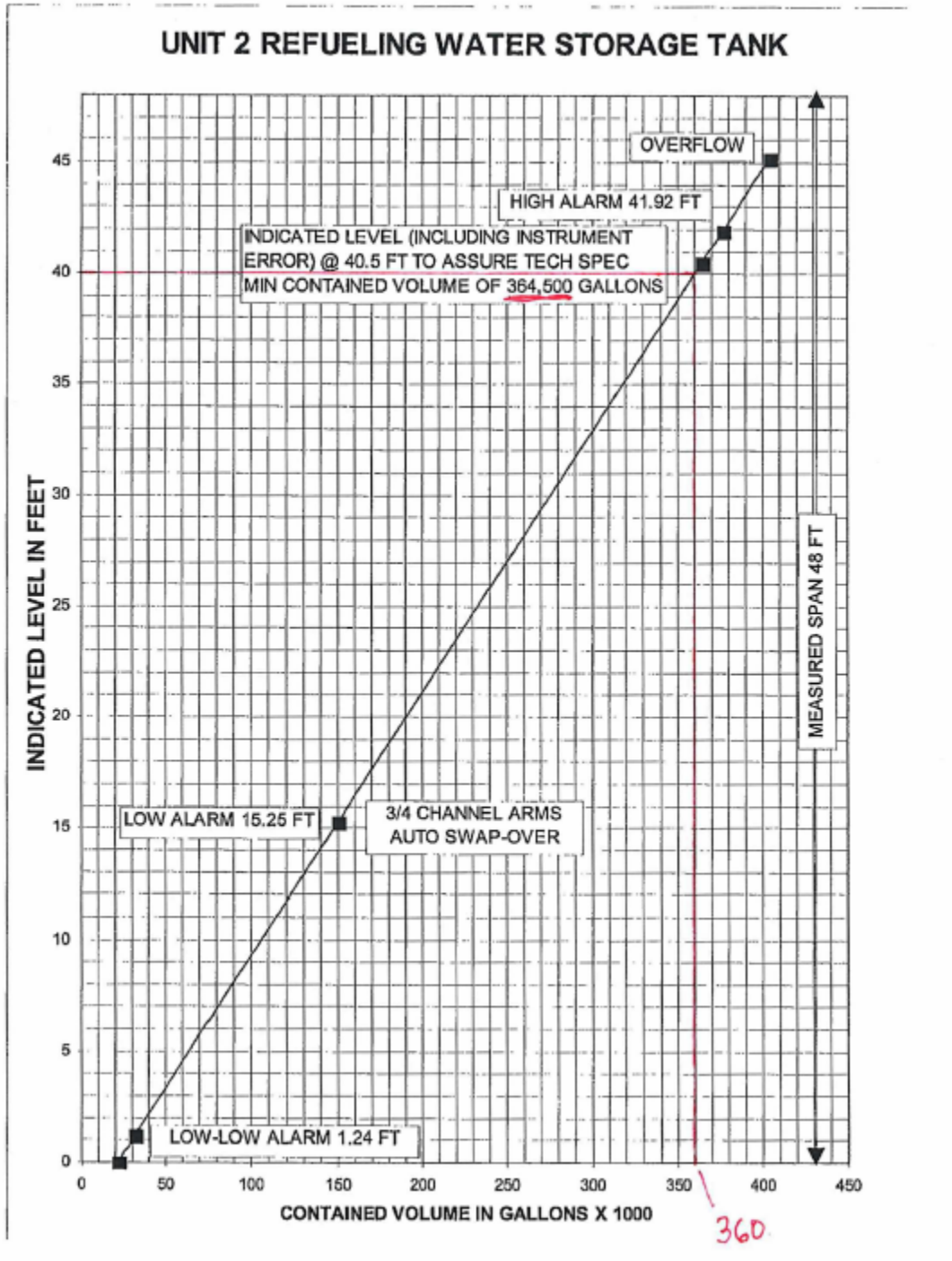
The time clock starts when the candidate acknowledges the initiating cue.

ANSWER KEY (optional):

Attachment 15, Figure 100B - Boric Acid Blend Plot, PW Flowrate = 50 gpm



ANSWER KEY (optional):



ANSWER KEY (optional):

STUDENT HANDOUT/WORKSHEET

Operator's Name: _____

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INITIATING CUE

- The CRS directs you to perform the following:
  1. DETERMINE the boric acid flowrate to make-up to the RWST from the BAST tanks.

     Formula from Fig 100B: FA=FP*RC/(AC-RC) Evaluator Note- Cue in JPM directs use of formula

     FA= Acid flowrate, FP= Primary water Flowrate, RC=Reactor Coolant Boron Conc (in this case RWST Boron Conc), AC=BAST conc

     FA=FP(50)*RC(2360)/(AC(6900)-RC(2360)), FA=50*2360/(6900-2360), FA=50*2360/4540,

     FA=50*(.5198)

     FA=25.99

  2. DETERMINE the amount of time required to raise the RWST level to the MINIMUM Tech Spec level.

     From S2.OP-TM.ZZ-0002 for RWST at 40'= 360,000 gal

     Chart states 40.5' to insure TS minimum of 364,500 gal

     M/U required 4,500 gal

     M/U time required = 4500/FP(50)+FA(26)

     =4500/76

     =59.2 mins

RECORD YOUR RESPONSE ON THIS WORKSHEET

RECORD JPM Start Time:_____

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
N/A		**RECORD** the JPM Start Time when the operator acknowledges READY TO START JPM.		N/A
Cue: Provide candidate copy of S2.OP-SO.CVC-0006, S2.RE-RA.ZZ-0012 (Figures), S2.OP-TM.ZZ-0002 (tank capacity curves), and Calculator. Examiners Note: None Comments: N/A				
1.0	*	Determine boric acid flowrate.	Per step 5.8.3.A, obtain boric flow setpoint from S2.RE-RA.ZZ-0012, Figures 100B or 100D. Determines a boric acid flowrate of 26 gpm using Figure 100B for PW Flowrate = 50 gpm. (50 gpm X 2360 ppm) ÷ (6900 ppm – 2360 ppm) = 26 gpm	
Cue: **WHEN** the applicant is determining boric acid flowrate using the Figure, state the following: Use the formula on the Figures and NOT the curve. **Examiners Note**: Figures 100B and 100D both state that Primary Water (PW) Flowrate is 50 gpm. Auto Make-up typically has the PW Flowrate set to 61-62 gpm (possible error trap). Step 5.8.3.N will direct adjusting the 2CV179 to 50 gpm. Comments:				
2.0	*	Determine the total makeup flowrate.	Determines that the total make-up flowrate is 76 gpm. Boric acid flowrate + primary water flowrate = 26 gpm + 50 gpm = 76 gpm	
Cue: None Examiners Note: None Comments:				

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
3.0	*	Determines the amount of make-up (in gallons) is required to raise RWTS level from 40.0 feet to Tech Spec minimum level (40.5 feet).	Using Tank Curves for Unit 2 RWST, determines the following: 40.0 feet = 360,000 gallons 40.5 feet = 364,500 gallons 364,500 – 360,000 = 4,500 gallons	
Cue: None Examiners Note: None Comments:				
4.0	*	Determine the amount of time to raise RWST level to the Tech Spec minimum level.	Determines it will take 59.2 minutes to raise the RWST to the minimum Tech Spec level (40.5 feet) 4,500 gallons ÷ 76 gpm = 59.2 minutes	
Cue: None Examiners Note: None Comments:				
Terminating Cue		**JPM COMPLETE when the applicant submits the worksheet.**		N/A

RECORD JPM Stop Time: _____

Operator's Name: _____ **Job Title:** RO **X** SRO _____

Facility: Salem **JPM No.:** 21-01 NRC RO-A1.b **Revision No.:** 0

Task Title: Determine Time to Makeup to Unit 2 RWST

Task No.: N0040170101 **Source:**

System: Conduct of Operations (Generic) Bank _____ New X Mod _____

K/A Number / Description: G2.1.23 Ability to perform general and/or normal operating procedures during any pant condition

K/A Rating RO 4.3 SRO 4.4

Task Applicability: SRO Only _____ RO/SRO X AO/RO/SRO _____ Other _____

Time-Critical: Yes _____ No X **Alternate Path:** Yes _____ No X

Estimated Time to Complete: **15** Minutes **Actual Time Used:** Minutes

Method of Testing: Simulated Performance _____ Actual Performance X

Location: Classroom X Simulator _____ In-Plant _____ RCA _____

Required Materials: S2.OP-SO.CVC-0006, S2.RE-RA.ZZ-0012, S2.OP-TM.ZZ-0002, Calculator

Reference(s): S2.OP-SO.CVC-0006 S2.RE-RA.ZZ-0012 S2.OP-TM.ZZ-0002

EVALUATION SUMMARY:

Were all the Critical Elements (steps) performed satisfactorily? Yes ____ No ____

The operator's performance was evaluated against the standards contained in this JPM, and has been determined to be: Satisfactory _____ Unsatisfactory _____

Comments:

Evaluator's Name: _____

Evaluator's Signature: _____ **Date:** _____

STUDENT HANDOUT/WORKSHEET

Operator's Name: _____

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RECORD YOUR RESPONSE ON THIS WORKSHEET