OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Generic Admin – Conduct of Operations

TASK: Determine the amount of time to borate for 3 stuck rods and the final BAST level IAW 2-EOP-TRIP-2.

TASK NUMBER: N1150030501

INITIAL CONDITIONS:

- Unit 2 experienced an automatic Reactor Trip from an inadvertent Main Turbine Trip.
- SI is not required and the crew is implementing 2-EOP-TRIP-2, Reactor Trip Response
- Three Control Rods from Control Bank Delta have failed to FULLY insert.
- Current BAST levels:
  - 21 BAST level: 94%
  - 22 BAST level: 76%

INITIATING CUE:

- You are the extra NCO.
- The CRS has directed you to determine the amount of time Rapid Boration is required IAW 2-EOP-TRIP-2 **Step 4** for the Three Control rods that have failed to insert on Control Bank Delta
  1. How many total minutes of Rapid Boration is required?
  2. What will be the final BAST levels?
     - Assume the Rapid Boration flowrate remains at 40 GPM for the entire duration required in question 1, and Both BAST's lower equal amounts.

Successful Completion Criteria:
1. All critical steps completed.
2. All sequential steps completed in order.
3. All time-critical steps completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made (and NRC concurrence is obtained).

Task Standard for Successful Completion:

1. **CALCULATES the total boration time for 3 stuck control rods to be 105 minutes**
2. **Calculates Total amount of Gallons injected to be 4200 gallons and final BAST levels are at 21: 67% ± 2% and 22: 49% ± 2%**

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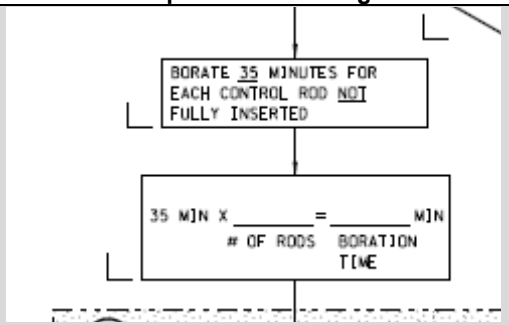
TASK: Determine the amount of time to borate for 3 stuck rods and the final BAST level IAW 2-EOP-TRIP-2.

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE	Provide the Following: • EOP TRIP 2 sheet 2 • S2.OP-TM.ZZ-0002 • Calculator • Ruler			
	CUE	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME**:_____			
		The following steps are from 2-EOP-TRIP-2, Major Action for "Control Rod Insertion", Step 4. **<u>Evaluator's Note</u>: Figure 1 is a snapshot that shows the exact EOP steps to follow along.**			
*	1	 **How many total minutes of Rapid Boration is required?**	**Operator Determine based on Cue that 3 control rods have failed to FULLY insert and determines the boration time required is 105 Minutes.** **35 MIN X ___3___ = ___105___ MIN** **# OF RODS BORATION TIME**		
	2.0	What will be the final BAST levels?			

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* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	2.1	**Determines total volume added to allow them to determine tank level changes.**	**Operator determines the total volume required to be added is 4200 Gallons.** **105 MIN X 40 GPM = 4200 Gallons** **The stem stated that BAST tanks lower in equal amounts. Therefore, the amount that each tank will lower will be;** **4200 gals / 2 = 2100 gallons per tank**		
*	2.2	**Determining 21 BAST Tank Final Level (in %):** Operator will be utilizing S2.OP-TM.ZZ-0002 Rev. 8 TANK CAPACITY DATA to interpret the curves from page 6 of 34 and determine level change, additionally operator may perform calculations slightly different than listed below. May just utilize the tank curve to determine volume change per percent level or overall change in level had just one tank been drained and then divide by two. **Figure 2 is snapshot of tank level curve**	**Using Figure 2 to determine final level after 2100 gallons of boric acid used.** **Start Level = 94% = 7400 Gallons** **Amount boric acid used = 2100 Gallons** **Final Level = 7400 -2100 = 5300 gals.** **Using Figure 2 tank curve, 5300 gallons equates to a final tank level of <u>67% (+/-2%)</u>**		

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: Generic Admin – Conduct of Operations
TASK: Determine the amount of time to borate for 3 stuck rods and the final BAST level IAW 2-EOP-TRIP-2.

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	2.3	**Determining 22 BAST Tank Final Level (in %)** **<u>Examiners Note</u>: +/-2% acceptance band was determined from the readability error using Figure 2 BAST tank curve. The applicant is required to convert BAST levels to gallons using the curve, and then convert BAST volume in gallons back to % level. In both these determinations, there is a +/- 1% readability error (half a 2% increment on the curve) that must be considered each time. Therefore, it was determined that a +/- 2% band would be appropriate to bound the readability errors when using the curve.**	**Using Figure 2 to determine final level after 2100 gallons of boric acid used.** **Start Level = 76% = 6000 Gallons** **Amount boric acid used = 2100 Gallons** **Final Level = 6000 -2100 = 3900 gals.** **Using Figure 2 tank curve, 3900 gallons equates to a final tank level of <u>49% (+/-2%)</u>**		
	CUE:	<u>WHEN</u> operator informs you the task is complete, OR the JPM has been terminated for other reasons, <u>THEN</u> **RECORD** the STOP TIME. **STOP TIME**:_____	**Terminate the JPM when the operator determines BAST level changes.**		

Figure 1
2-EOP-TRIP-2 SHT 2 step 4

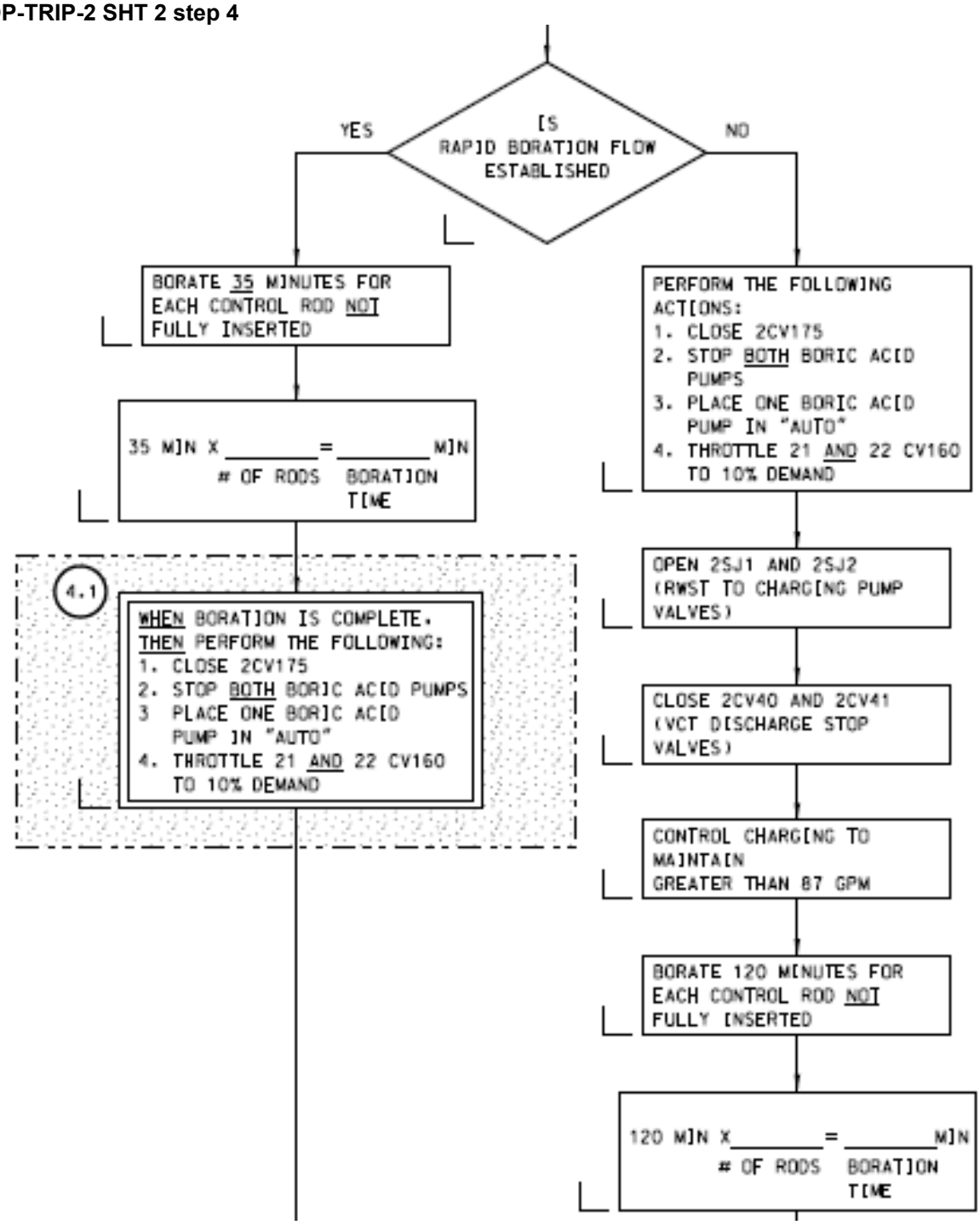
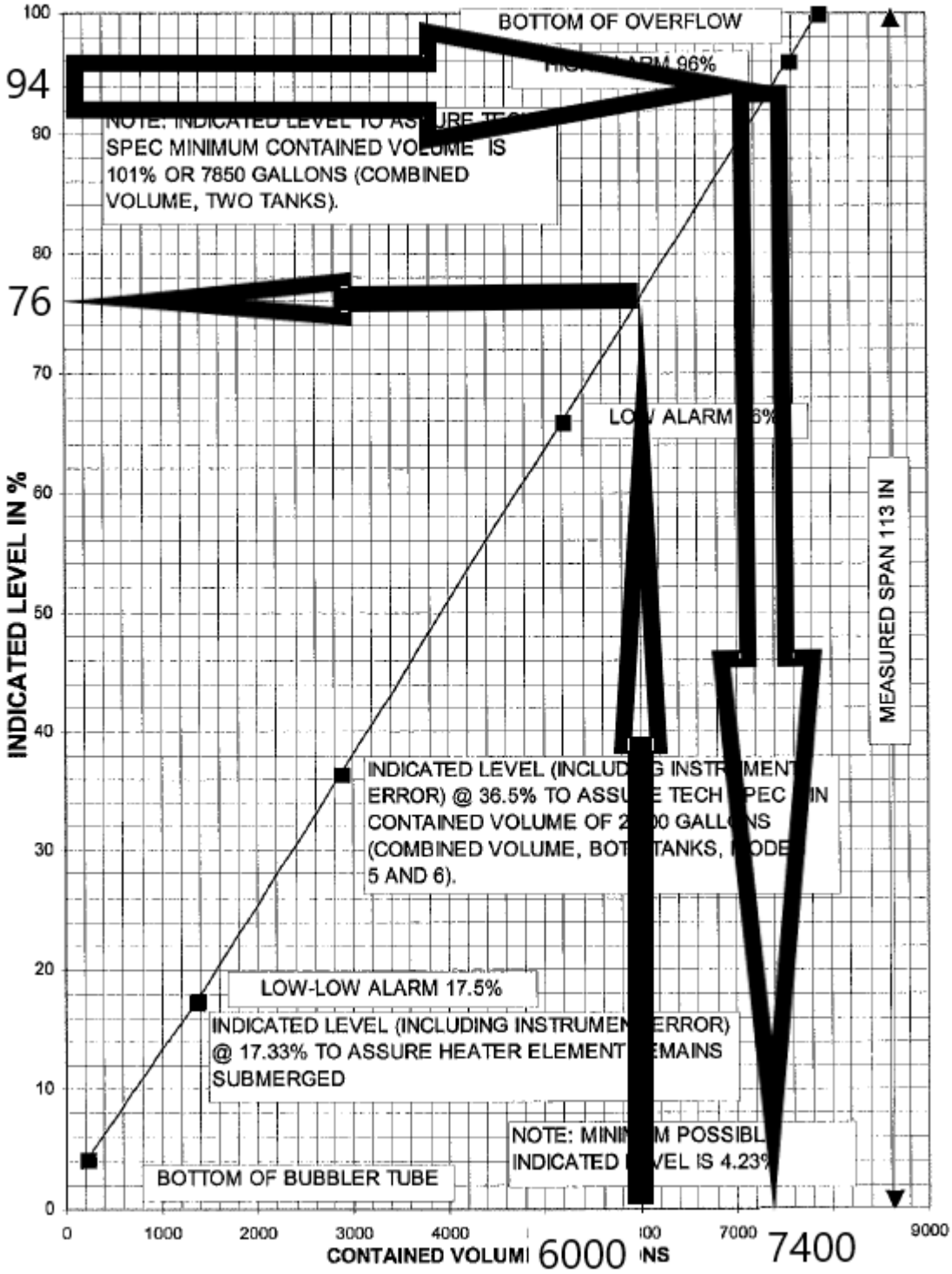


Figure 2
S2.OP-TM.ZZ-0002 page 6 of 34

UNIT 2 BORIC ACID TANK



JPM: 20-01 ILOT RO A2

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 Rev. __41___ Date ___1-10-22_____

___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.

____RC____ 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor:	R. Chan	Date:	1-10-22
SME/Instructor:	S. Pompper	Date:	1-10-22
SME/Instructor:	M. Wilcox	Date:	1-10-11

OPERATOR CUE SHEET

Applicant Name:_____

INITIAL CONDITIONS:

- Unit 2 experienced an automatic Reactor Trip from an inadvertent Main Turbine Trip.
- SI is not required and the crew is implementing 2-EOP-TRIP-2, Reactor Trip Response
- Three Control Rods from Control Bank Delta have failed to FULLY insert.
- Current BAST levels:
  - 21 BAST level: 94%
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INITIATING CUE:

- You are the extra NCO.
- The CRS has directed you to determine the amount of time Rapid Boration is required IAW 2-EOP-TRIP-2 **Step 4** for the Three Control rods that have failed to insert on Control Bank Delta

1. How many total minutes of Rapid Boration is required?

_____ Minutes

2. What will be the final BAST levels in percent?
   - Assume the Rapid Boration flowrate remains at 40 GPM for the entire duration required in question 1, and Both BAST's lower equal amounts.

21 BAST level: _____ %

22 BAST level: _____ %

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION: SALEM

SYSTEM: Generic Admin – Conduct of Operations

TASK: Perform manual QPTR calculation surveillance IAW S2.OP-ST.NIS-0002

TASK NUMBER: N0150020201

JPM NUMBER: 20-01 ILOT RO-A3

ALTERNATE PATH: [ ]

K/A NUMBER: 2.2.12

IMPORTANCE FACTOR: 3.7

APPLICABILITY:	**RO**	**SRO**

EO [ ] **RO** [X] **STA** [ ] **SRO** [ ]

EVALUATION SETTING/METHOD: Classroom

REFERENCES: S2.OP-ST.NIS-0002 Rev. 15 (checked 6-28-21)
Reactor Engineering Manual Data, Salem 2 Cycle 25 Rev 33

TOOLS AND EQUIPMENT: Calculator

VALIDATED JPM COMPLETION TIME: 20 min

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

Developed By:	**R. Chan** **Instructor**	**Date: 1-10-22**
Validated By:	**Wilcox / Pompper** **SME or Instructor**	**Date: 1-10-22**
Approved By:	**M. Wadusky(Signature on file)** **Training Department**	**Date: 2-11-22**
Approved By:	**W. Hargrave** **Operations Department**	**Date: 1-10-22**

ACTUAL JPM COMPLETION TIME:

ACTUAL TIME CRITICAL COMPLETION TIME:

PERFORMED BY:

GRADE: [ ] **SAT** [ ] **UNSAT**

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: **DATE:**

REVISION HISTORY

JPM NUMBER: 20-01 ILOT RO-A3

Rev #	Date	Description	Validation Required
00	6-13-17	Added revision history and simulator setup pages. Updated NI currents from Rev. 5 of REM dated 6/4/17. Editorial comments from IP 71111.11 FASA.	Yes
01	3-20-18	Revised calculations and initial conditions based on new REM values for Table 2 Rev 27. Changed K/A to better match task.	Yes
02	1-10-19	Updated calculation to reflect revised REM Manual for Unit 2 Cycle 24 Rev 8.	Yes
03	6-22-20	Updated calculation to reflect revised REM Manual for Unit 2 Cycle 25 Rev 7.	Yes
04	6-28-21	Updated calculation and value for N43 upper to reflect revised REM Manual for Unit 2 Cycle 25 Rev 30.	Yes
05	8-17-21	Revised REM Manual for Unit 2 Cycle 25 Rev 33.	Yes
06	1-10-22	Incorporated NRC comments and Prep week comments.	Yes

SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Generic Admin – Conduct of Operations

TASK: Perform manual QPTR calculation surveillance IAW S2.OP-ST.NIS-0002

TASK NUMBER: N0150020201

SIMULATOR IC: N/A

MALFUNCTIONS / REMOTES: N/A

OVERRIDES: N/A

SPECIAL INSTRUCTIONS: None