OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION: SALEM

SYSTEM: Liquid Radwaste Release

TASK: Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001.

TASK NUMBER: N0680010101

JPM NUMBER: 19-01 NRC IP-k

ALTERNATE PATH: [ ]

K/A NUMBER: 068 A2.02

IMPORTANCE FACTOR: 2.7* (RO) 2.8* (SRO)

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

EVALUATION SETTING/METHOD: In Plant / Simulate

REFERENCES: S1.OP-SO.WL-0001, Rev. 28 (checked 1-15-20)
S1.OP-TM.ZZ-0002, Rev.8

TOOLS AND EQUIPMENT: Calculator, Tank Capacity Book

VALIDATED JPM COMPLETION TIME: 25 min

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

Developed By:	**R. Chan** **Instructor**	**Date: 1-15-20**
Validated By:	**Moore / Klein** **SME or Instructor**	**Date: 1-16-20**
Approved By:	**N/A** **Training Department**	**Date:**
Approved By:	**N/A** **Operations Department**	**Date:**

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: 19-01 NRC IP-k

Rev #	Date	Description	Validation Required
00	9-18-19	NEW JPM 068 A2.02: Ability to (a) predict the impacts of the following malfunctions or operations on the Liquid Radwaste System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Lack of tank recirculation prior to release	Yes

SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Liquid Radwaste Release

TASK: Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001.

TASK NUMBER: N0680010101

SIMULATOR IC: N/A

MALFUNCTIONS / REMOTES: N/A

OVERRIDES: N/A

SPECIAL INSTRUCTIONS:

- **This JPM is located inside the <u>Unit 1</u> RCA.**
-

NAME: _____

DATE: _____

SYSTEM: Liquid Radwaste Release

TASK: Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001.

TASK NUMBER: N0680010101

INITIAL CONDITIONS:

- The 11 CVCS Monitor Tank is at 90% and processing for release is being performed.

INITIATING CUE:

- You are the extra NCO.
- The CRS directs you to place 11 CVCS Monitor Tank in recirculation using section 5.1 of S1.OP-SO.WL-0001, Release of Radioactive Liquid Waste from 11 CVCS Monitor Tank.
- 11 Monitor Tank Pump will be placed in service.

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.

Task Standard for Successful Completion:

1. **Correctly performs recirculation valve lineup using Attachment 1 IAW S1.OP.SO.WL-0001**
2. **Correctly determines minimum recirculation time of 6 Hrs 30 Mins (band 6 Hrs 20 Mins to 6 Hrs 40 Mins)**

SYSTEM: **Liquid Radwaste Release**

TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
		Provide operator the following: **1. Provide filled out copy of S1.OP-SO.WL-0001** **2. S1.OP-TM.ZZ-0002, Tank Capacity Data** **3. Calculator**			
	CUE:	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME**:_____			
		NOTE Any additions made to Monitor Tank that is isolated and placed on recirculation for sampling will invalidate sample analysis, requiring further recirculation time and additional sampling.	Operator reads note and continues on with procedure.		
	5.1	**11 CVCS MT Release Preparation**			

SYSTEM: **Liquid Radwaste Release**

TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.1.1	**PLACE** valves in "Recirc Position" IAW Attachment 1, Section 1.0	**Operator correctly locates the valves listed on Attachment 1 AND simulates re-positioning each valve to the correct position IAW Attachment 1.** **CUE:** *Report the position of each valve as listed in Attachment 1 (see attached list on page 11).* **Examiner's Note**: The following valves listed in Attachment 1 Section 1.0 are to be in the following positions with 11 MT Tank Pump in service: **11WR27 MT PMP SUCT V – OPEN** **11WR31 MT PMP DISCH V – OPEN** **12WR27 MT PMP SUCT V – CLOSED** **12WR31 MT PMP DISCH V - CLOSED**		
	5.1.2	**DIRECT** second Operator to PERFORM Independent Verification IAW Attachment 1, Section 1.0	**CUE**: *IV's are complete*.		
	5.1.3	**PLACE** LO-LEVEL CUT-OFF switch in TANK 11 position	Operator places LO-LEVEL CUT-OFF switch in the TANK 11 position. **CUE:** *switch is on TANK 11 position*		

SYSTEM: **Liquid Radwaste Release**

TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.1.4	IF recirculating 11 CVCS MT with 11 MT Pump, THEN **START** 11 MT Pump	**CUE**: *recirculate using 11 MT Pump* **Operator starts 11 MT Pump by depressing start pushbutton.** **CUE:** *Pump is running*		

SYSTEM: **Liquid Radwaste Release**
TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.1.5	IF recirculating 11 CVCS MT with 12 MT Pump, THEN **START** 12 MT Pump	Operator marks step as N/A		
*	5.1.6	**THROTTLE** 11WR53, MT RECIRC V, to maintain 80 psig on discharge of operating MT Pump	**CUE #1:** *discharge pressure is 40 psig*. **Operator throttles 11WR53 in the closed (clockwise) direction to raise discharge pressure.** **CUE #2:** *discharge pressure is 80 psig*. **CUE #3:** *IF throttled in open direction THEN state: discharge pressure is 20 psig.*		
*	5.1.7	**COMPLETE** Attachment 1, Section 2.0	**Operator correctly completes Attachment 1 Section 2.0 (see steps below)** **Examiner's Note:** Ability to interpret tank curves will be important to determine tank volume and proper minimum recirculation time.		
	ATT 1	Time Recirculated Started (A)	Records current time		
	ATT 1	CVCS Monitor Tank 11 Level	Records 90%		

SYSTEM: **Liquid Radwaste Release**

TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	ATT 1	Volume * *obtained from tank volume S1.OP-TM.ZZ-0002, Tank Capacity Data	**Refers to S1.OP-TM.ZZ-0002 and selects CVCS Monitor Tank curve Page 8.** **Using curve and tank level of 90%operator determines tank volume of 19,500 gallons** **(acceptable band 19,000 to 20,000 gallons)**		
*	ATT 1	Minimum Time required to recirculate tank (B) [(Volume) X 3 / 150 gpm]	**Operator calculates minimum recirculation time of 6 Hrs 30 Min based on 19,500 gallons.** **Acceptable band:** **19,000 gallons = 6 Hrs 20 Mins, to** **20,000 gallons = 6 Hrs 40 Mins**		
		Time Minimum Recirculation Completed (A + B)	Operator adds time (B) to start time (A)		
	5.1.8	**DIRECT** second Operator to **PERFORM** Independent Verification of calculations performed in Attachment 1, Section 2.0	**CUE:** ***IV is complete*** **CUE:** ***JPM is Complete***		

SYSTEM: **Liquid Radwaste Release**

TASK: **Place 11 CVCS Monitor Tank in Recirculation IAW S1.OP-SO.WL-0001**

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step) (# Sequential Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CUE:	WHEN operator informs you the task is complete, OR the JPM has been terminated for other reasons, THEN **RECORD** the STOP TIME. **STOP TIME**:_____	**Terminate JPM when operator completes Attachment 1 Section 2.0.**		

s1.OP-SO.WL-0001(Q)

ATTACHMENT 1
(Page 1 of 2)

VALVE ALIGNMENT AND DATA

1.0 RECIRC/TRANSFER VALVE ALIGNMENT: (CVCS MT Pmp Rm 64'AB)

NOTE:

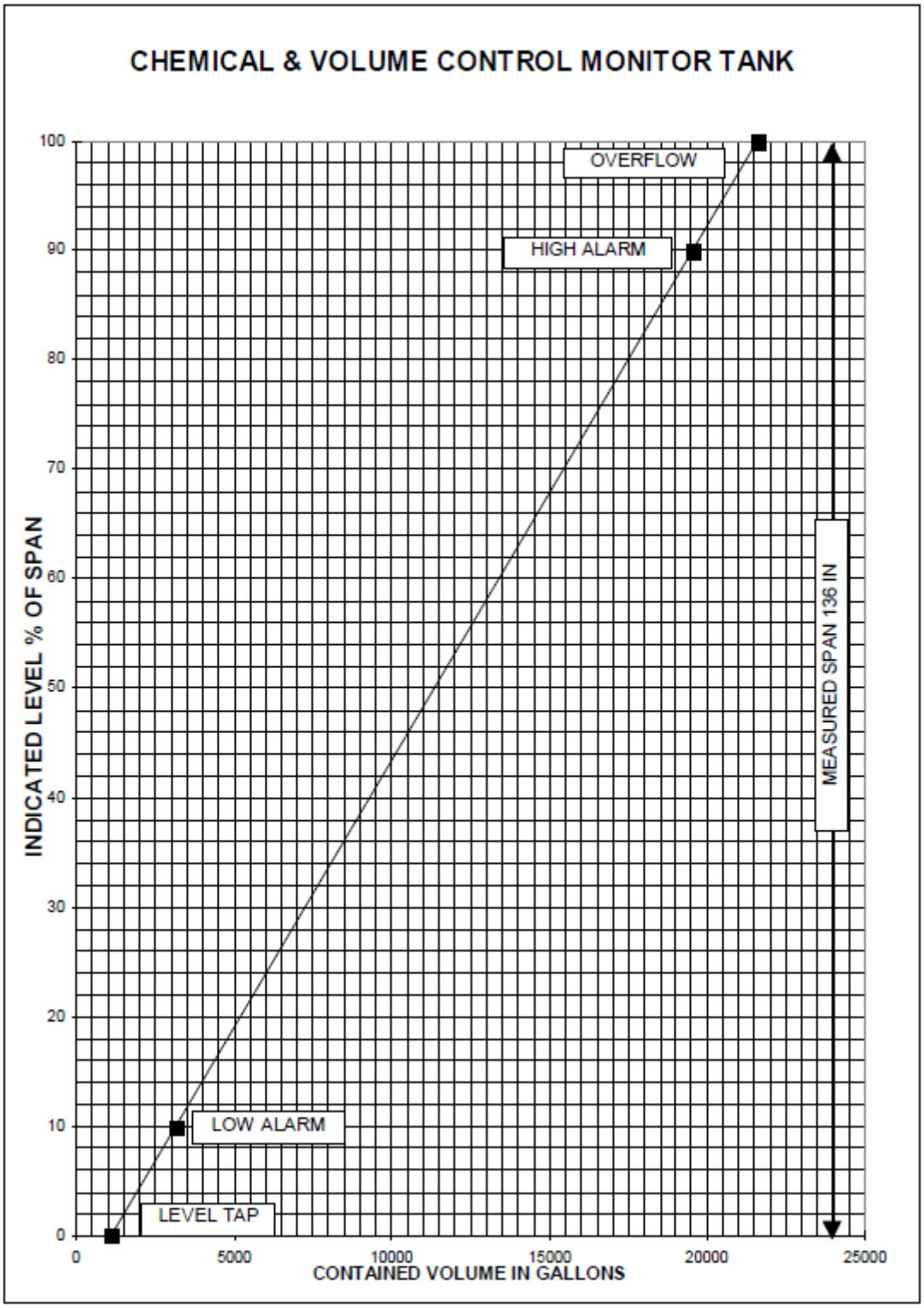
___ When alignment is used for Monitor Tk to Monitor Tk transfer purposes, Section 2.0 of this attachment is not applicable.

Component	Description	Location	Recirc Position	Initials	IV
11WR23	MT INLET V	(CVCS MT Pmp Rm 64´AB)	X		
11WR26	MT OUTLET V		O		
12WR26	MT OUTLET V		X		
11WR27	MT PMP SUCT V		(1)		
11WR31	MT PMP DISCH V		(1)		
12WR27	MT PMP SUCT V		(2)		
12WR31	MT PMP DISCH V		(2)		
1WR55	MT PMP RECIRC EVAP DIST DM V		X		
11WR53	MT RECIRC V		THROT		
12WR53	MT RECIRC V		X		
1WR34	MT PMP PWST STOP V	(Gas Stripper Feed Pmp Rm 64´AB)	LX		
1WR57	MT PMP HUT STOP V		X		
1WR59	MT PMPS OB STOP V		X		

(1) **RECORD** OPEN if 11 Monitor Tank Pump is selected, CLOSED if 12 Monitor Tank Pump is selected.

(2) **RECORD** OPEN if 12 Monitor Tank Pump is selected, CLOSED if 11 Monitor Tank Pump is selected.

S1.OP-TM.ZZ-0002 Tank Capacity Data, Page 8:



ANSWER KEY
(Attachment 1)

S1.OP-SO.WL-0001(Q)

ATTACHMENT 1
(Page 2 of 2)

VALVE ALIGNMENT AND DATA

2.0 **RECIRCULATION DATA**:

Item		Data	
Time Recirculation Started	(A)	Hrs.	Min.
CVCS Monitor Tank 11 Level (1-LIS-180)		90	%
Volume *		19,500	gal
Minimum Time required to recirculate tank [(Volume) x 3 ÷ 150 gpm]	(B)	6 Hrs. 30	Min.
Time Minimum Recirculation Completed	(A)+(B)	Hrs.	Min.
Performed by:	Time:	Date:	
Independent Verification of calculations performed by:			

* Obtain tank volume from S1.OP-TM.ZZ-0002(Q), Tank Capacity Data.

3.0 **DRAINDOWN VALVE ALIGNMENT**:

Component	Description	Location	Draindown Position	Initials
11WR26	MT OUTLET V	CVCS MT PMP Rm 64' AB	X	
11WR53	MT RECIRC V		X	
11WR25	MT DR V		THROT (1)	

(1) **MONITOR** to ensure drain rate is within the capacity of the Auxiliary Sump Tank Pump(s).

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

JPM#: **19-01 NRC IP-k**

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. __28___ Date ____1-15-20_____

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.

SME/Instructor:	R. Chan	Date:	1-15-20
SME/Instructor:	R. Moore	Date:	1-16-20
SME/Instructor:	J. Klein	Date:	1-16-20

INITIAL CONDITIONS:

- ❖ The 11 CVCS Monitor Tank is at 90% and processing for release is being performed

INITIATING CUE:

- ❖ You are the extra NCO.
- ❖ The CRS directs you to place 11 CVCS Monitor Tank in recirculation using section 5.1 of S1.OP-SO.WL-0001, Release of Radioactive Liquid Waste from 11 CVCS Monitor Tank.
- ❖ 11 Monitor Tank Pump will be placed in service.

SIMULATOR
EXAMINATION SCENARIO GUIDE

SCENARIO TITLE: NRC-1 [AR.ZZ-4, AB.CVC-1, AB.CW-1, AB.LOOP-3, AB.LOAD-1, LOPA-1 w/2C EDG recovery]

SCENARIO NUMBER: 19-01 NRC-1

EFFECTIVE DATE: See Approval Date

EXPECTED DURATION: 60 minutes

REVISION NUMBER: 07

PROGRAM:

[ ] **L.O. REQUAL**

[X] **INITIAL LICENSE**

[ ] **STA**

[ ] **OTHER** _____

Revision Summary:

- See ESG-1806 for previous revision summaries.
- Rev. 06 (3-19-19) (formerly ESG-1806) Modified for 2019 Annual exam. Deleted malfunction for 2R1B and 2LT112 failures. Added PZR level alarm channel fails low, 22 SGFP trip, and one SW pump trips following starting an EDG in LOPA-1.
- Rev. 07 (last used on ESG-1905 2019 LORT Annual Exam). Modified for 19-01 ILOT exam. Used ESG-1905 for EOP-LOPA major actions and modified all other events. Added NRC comments on 6-4-20 to swap malfunction 21 SW Accumulator with RC Wide Range Pressure channel fail low from ESG-3. This is being done to prevent potential overlap with SRO Admin JPM task. Added comments from NRC Prep week 6-17-20.

PREPARED BY:	R. Chan	6-18-20
	Lead Regulatory Exam Author	**Date**
APPROVED BY:	N/A	
	Operations Training Manager	**Date**
APPROVED BY:	N/A	
	Operations Director or designee	**Date**

Last Updated: 8/27/2020 12:33 PM

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SCAN OF SIGNED SCENARIO COVER SHEET