OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION:	Salem Generating Station
SYSTEM:	Reactor Coolant System (SF 2) - ECCS
TASK:	Transfer To Hot Leg Recirculation IAW EOP-LOCA-4
TASK NUMBER:	N1150110501
JPM NUMBER:	17-01 NRC Sim-b
ALTERNATE PATH:	[X]
K/A NUMBER:	006 A4.05
IMPORTANCE FACTOR:	3.9 (RO) / 3.8 (SRO)

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

EVALUATION SETTING/METHOD: Simulator / Perform

REFERENCES: 2-EOP-LOCA-4, Rev. 30 (checked 6-22-18)
2-EOP-LOCA-1, Rev. 31

TOOLS AND EQUIPMENT: None

VALIDATED JPM COMPLETION TIME: 5 minutes

TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS: N/A

Developed By: R. Chan Rudolf Chan **Date:** 6-22-18
Instructor

Validated By: J. Brennan / Thomas Wathey **Date:** 6/22/18, 6-22-18
SME or Instructor

Approved By: Matthew McHugh M. McHugh **Date:** 10/30/18
Training Department

Approved By: MGRS **Date:** 10/23/18
Operations Representative

ACTUAL JPM COMPLETION TIME:

ACTUAL TIME CRITICAL COMPLETION TIME:

PERFORMED BY:
GRADE: [ ] **SAT** [ ] **UNSAT**

REASON, IF UNSATISFACTORY:

EVALUATOR'S SIGNATURE: **DATE:**

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Reactor Coolant System (SF 2) - ECCS

TASK: Transfer To Hot Leg Recirculation IAW EOP-LOCA-4

TASK NUMBER: 1150360501

SIMULATOR IC: **IC-231 [6-4-18, 08:39:53]**

MALFUNCTIONS:

1. Reset the simulator to the above IC #.
2. Verify the following events on the Summary/ET Trigger Lists:

MALF ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Severity
01	RC0001B, RCS rupture of RC loop 22	N/A	N/A	N/A	N/A	TRUE
02	SJ0062B, 22 SI pump trip					TRUE

3. These malfunctions will simulate plant conditions to support transferring to Hot Leg Recirc IAW LOCA-4. The operator will commence the task in LOCA-1 Step 27 to remove lockouts for 21/22SJ49's, then on cue transfer to LOCA-4. While in LOCA-4, the operator will recognize that only 22 RHR pump is running and 21SJ45 is C/T as part of maintenance on 21 RHR pump. The operator will recognize that 22 SI pump tripped during LOCA-3 and take the Alternate Path to use 21 SI pump for Hot Leg injection.

OVERRIDES / REMOTES:

ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Condition/ Severity
01	RH26D, 21 RHR pump breaker control power					OFF
02	RH27D, 21 RHR pump rack out					TAGGED

EVENT TRIGGERS:

ET#	Description	Command

SPECIAL INSTRUCTIONS:

- Provide mark up of EOP-LOCA-1, sheet 3, steps completed up to Step 27.
- ENSURE bezel covers for 21 RHR pump and 21SJ45 C/T

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Reactor Coolant System (SF 2) - ECCS

TASK: Transfer To Hot Leg Recirculation IAW EOP-LOCA-4

TASK NUMBER: N1150110501

INITIAL CONDITIONS:

- Unit 2 experienced a Large Break LOCA.
- The crews have completed actions to transfer to Cold Leg Recirculation IAW EOP-LOCA-3 and have transitioned back to EOP-LOCA-1.
- 22 SI pump tripped during LOCA-3 and is being investigated.
- 21 RHR pump and 21SJ45 were C/T for scheduled maintenance prior to the event.
- The crew has just reached the 4.5 hour wait time at Step 26 of EOP-LOCA-1.

INITIATING CUE:

- You are the Reactor Operator.
- The CRS has directed you to continue with EOP-LOCA-1 starting at **Step 27**.
- Your evaluator will respond to all alarms not related to your task.

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:

Align RCS for Hot Leg Recirculation IAW 2-EOP-LOCA-4 Steps 3 thru 4.

NAME: _____

DATE: _____

SYSTEM: Reactor Coolant System (SF 2) - ECCS

TASK: Transfer To Hot Leg Recirculation IAW EOP-LOCA-4

* #	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:	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME:**_____			
		The following steps are from 2-EOP-LOCA-1, Step 27 and 2-EOP-LOCA-4. **Evaluator's Note: Figures 1 and 2 are snapshots that shows the exact EOP steps to follow along.**			
		EOP-LOCA-1, sheet 3			
*,#	27	DEPRESS "CLOSE" PUSHBUTTON FOR 21 AND 22 SJ40 (HOT LEG DISCHARGE VALVES)	**Operator depresses the CLOSE PB for 21 and 22 SJ40 on 2CC1.**		
*,#	27.1	REMOVE LOCKOUTS FOR 21 AND 22 SJ40 (HOT LEG DISCHARGE VALVES)	**Operator places 21 and 22 SJ40 Lockout CMC switches to "Valve Operable" and verifies Valve Operable backlight illuminates.**		
		ARE "VALVE OPERABLE" BACKLIGHTS LIT FOR 21SJ40 AND 22SJ40	**YES**, Operator verifies that Valve Operable backlights are lit on 2RP4 for both 21 and 22		

* #	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)
			SJ40.		
	28	WAIT UNTIL 6.5 HOURS HAVE ELAPSED SINCE SI ACTUATION	**CUE:** 6.5 hours has elapsed since SI actuation. The CRS directs you to "Transfer to Hot Leg Recirculation" by performing EOP-LOCA-4.		
		EOP-LOCA-4, sheet 1			
	1	ARE **BOTH** RHR PUMPS RUNNING?	Determines that ONLY 22 RHR Pump is running. (21 RHR pump is C/T) **GOES TO Step 3.**		
	3	IS 22 RHR Pump Running	YES, determines that 22 RHR Pump is running.		
*,#	4	CLOSE 22CS36 (RHR SUPPLY TO CS VALVE)	**Operator depresses CLOSE PB for 22CS36 (RHR SUPPLY TO CS VALVE) and verifies CLOSE PB illuminates.**		
		ALTERNATE PATH #1 STARTS HERE:	21SJ45 is tagged CLOSED for maintenance		
		IS 21SJ45 (RHR DISCHARGE TO SI PUMPS VALVE) OPEN	**NO**, Operator determines 21SJ45 (RHR DISCHARGE TO SI PUMPS VALVE) is CLOSED due to 21 RHR pump maintenance.		
*,#		OPEN 22SJ49 (COLD LEG ISOLATION VALVE)	**Operator depresses OPEN PB for 22SJ49 (COLD LEG ISOLATION VALVE) and verifies OPEN PB illuminates.**		
		ALTERNATE PATH #2 STARTS HERE:	22 SI pump tripped during EOP-LOCA-3		

* #	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)
	4.1	IS 22 SI Pump Running	**NO**, Operator determines 22 SI Pump is NOT running based on initial conditions that 22 SI pump tripped during LOCA-3. **GOES TO step 6.1**		
*,#		STOP 21 SI Pump	**Operator depresses 21 SI Pump STOP PB on 2CC1 and verifies STOP PB illuminates.**		
*,#		CLOSE 21SJ134 (Cold Leg Discharge Valve)	**Operator depresses CLOSE PB for 21SJ134 (Cold Leg Discharge Valve) on 2CC1 and verifies CLOSE PB illuminates.**		
*,#		OPEN 21SJ40 (Hot Leg Discharge Valve)	**Operator Opens 21SJ40 (Hot Leg Discharge Valve) by inserting key and rotating; verifies OPEN PB illuminates.**		
*,#		START 21 SI Pump	**Operator depresses START PB for 21 SI Pump and verifies START PB illuminates.**		
		Return to Procedure in Effect	**CUE: JPM is complete**		
	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 RETURNS TO PROCEDURE IN EFFECT.**		

Page Left Intentionally Blank

Figure 1 (2-EOP-LOCA-1, Sheet 3):

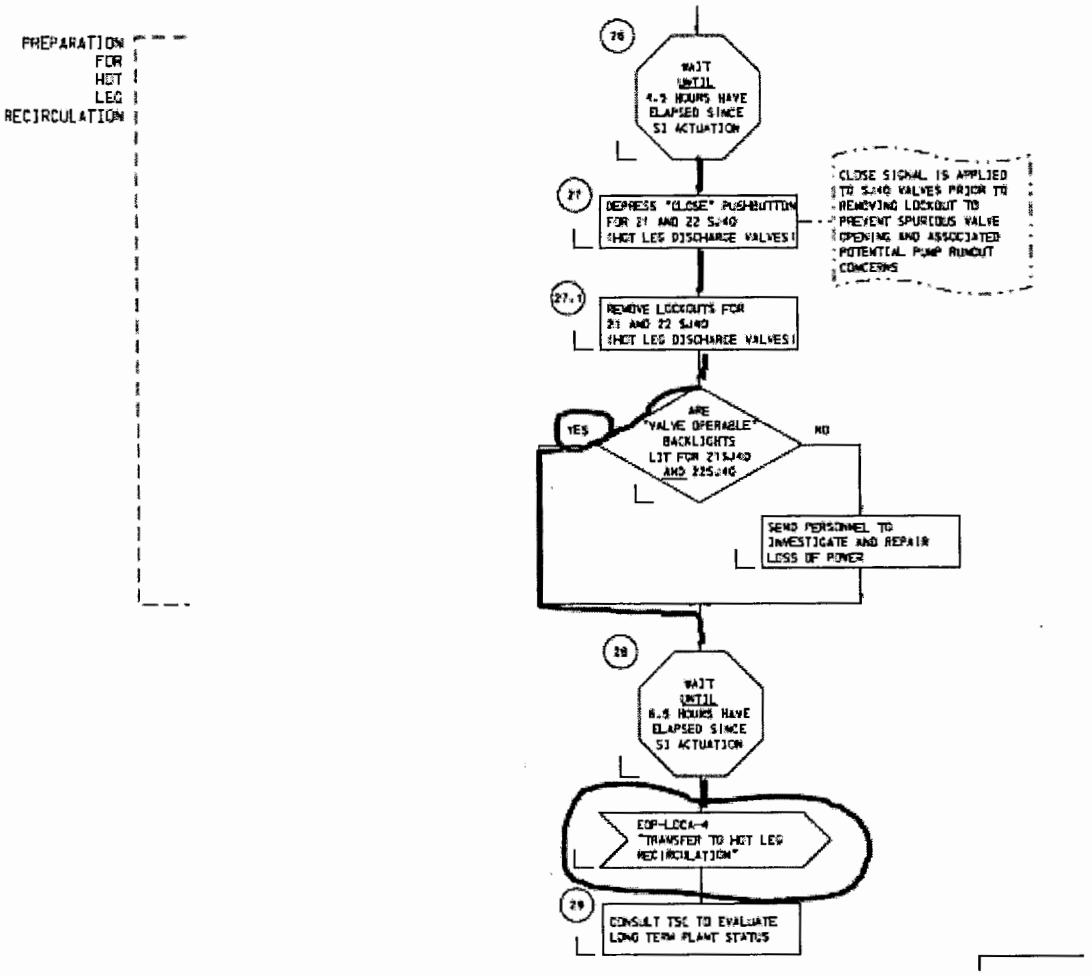
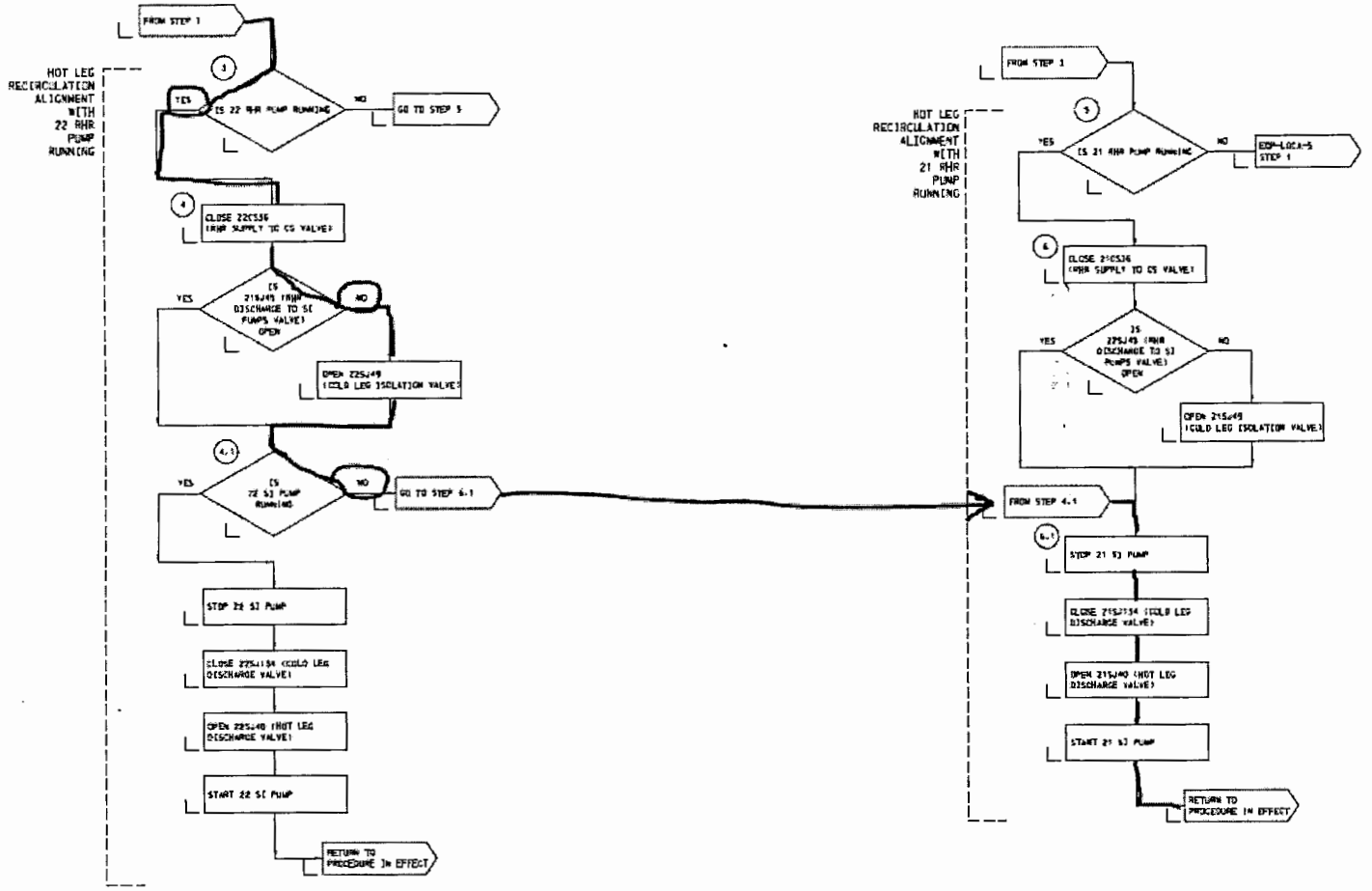


Figure 2 (2-EOP-LOCA-4, Sheet 1):



TQ-AA-106-0303

JPM#: 17-01 NRC Sim-b

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.

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

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

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

JL 4. Initial setup conditions are identified.

JL 5. Initiating and terminating Cues are properly identified.

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

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

JL 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. 30 / 31 Date 6/22/18 / 6/22/18 2-EOP-LOCA-4 / 2-EOP-LOCA-1

JL 9. Pilot test the JPM:
a. verify Cues both verbal and visual are free of conflict, and
b. ensure performance time is accurate.

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

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

(SME)/Instructor: JL Brennan Date: 6-22-18

SME/Instructor: JL Thomas Wathey Date: 6/22/18

SME/Instructor: _____ Date: _____

INITIAL CONDITIONS:

- Unit 2 experienced a Large Break LOCA.
- The crews have completed actions to transfer to Cold Leg Recirculation IAW EOP-LOCA-3 and have transitioned back to EOP-LOCA-1.
- 22 SI pump tripped during LOCA-3 and is being investigated.
- 21 RHR pump and 21SJ45 were C/T for scheduled maintenance prior to the event.
- The crew has just reached the 4.5 hour wait time at Step 26 of EOP-LOCA-1.

INITIATING CUE:

- You are the Reactor Operator.
- The CRS has directed you to continue with EOP-LOCA-1 starting at **Step 27**.
- Your evaluator will respond to all alarms not related to your task.