OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION:	SALEM
SYSTEM:	Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System
TASK:	Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003
TASK NUMBER:	N0450130201
JPM NUMBER:	17-01 NRC Sim-e
ALTERNATE PATH:	[X]
K/A NUMBER:	045 A4.01
IMPORTANCE FACTOR:	RO: 3.1 SRO:
APPLICABILITY:	EO [ ] RO [X] STA [ ] SRO [ ]
EVALUATION SETTING/METHOD:	Simulator / Perform
REFERENCES:	S2.OP-PT.TRB-0003, Rev 20 (checked 9-14-18)
TOOLS AND EQUIPMENT:	None
VALIDATED JPM COMPLETION TIME:	8 min
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:	N/A
Developed By:	R. Chan, Instructor — **Date: 9-14-18**
Validated By:	SME or Instructor — **Date:** 9-14-18
Approved By:	Training Department — **Date:** 10/30/18
Approved By:	Operations Department — **Date:** 10/23/18

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

REVISION HISTORY

JPM NUMBER: **17-01 NRC Sim-e**

Rev #	Date	Description	Validation Required
00	9-14-18	Added revision history and simulator setup pages. Editorial comments from IP 71111.11 FASA.	Yes

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System

TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

TASK NUMBER: N0450130201

SIMULATOR IC: **IC-234**

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	N/A					
02						
03						
04						

3. This JPM requires no malfunctions. The initial conditions support the required power level to perform Main Turbine Valve testing procedure. The alternate path for this JPM is when the field operator misses monitoring the valve for stroke and control room needs to restroke the valve using the restroke steps.

OVERRIDES / REMOTES:

ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Condition/ Severity
01	N/A					
02						
03						

EVENT TRIGGERS:

ET#	Description	Command

SPECIAL INSTRUCTIONS:

- **ENSURE** copy of S2.OP-PT.TRB-0003 is available for candidate.
- Extra Instructor to respond to alarms.

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

NAME: _____

DATE: _____

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System

TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

TASK NUMBER: N0450130201

INITIAL CONDITIONS:

- Unit 2 is at 89% power.
- Power ascension is on hold to complete Main Turbine Valve testing IAW S2.OP-PT.TRB-0003, Main Turbine Valve Stroke Testing.
- A Retest on 22MS28 Main Turbine Stop Valve is required due to the valve failing to stroke during valve testing.
- Maintenance repairs are complete and the valve is turned over to the operating shift for testing.
- Control Rods are in Manual with rods at D-200.

INITIATING CUE:

- You are the Plant Operator.
- The CRS has directed you to PERFORM retest on **22MS28 Main Turbine Stop Valve** (TSV) IAW S2.OP-PT.TRB-0003, Main Turbine Valve Stroke Testing, section 5.4.3.
- All Prerequisites and P&L's are satisfied.
- Test Preparation section 5.2 is complete.
- An operator is in the field standing by the 22MS28 valve to monitor the valve stroke.
- Notify the CRS the results of the valve stroke test.
- 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 (and NRC concurrence is obtained).

Task Standard for Successful Completion:

1. **Performs valve stroke steps in the correct order on Turbine Stop Valve IAW approved procedure.**

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System
TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	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	**Simulator Operator: ENSURE** the HMI screen is selected to Operations screen	**Evaluator Note**: Ensure HMI screen is selected to operations screen.		
	CUE	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME:**_____			
		The following are Steps from S2.OP-PT.TRB-0003, Main Turbine Valve Stroke Testing.	**Evaluator's Note: The Operator will use the DEHC HMI panel on 2CC2 for performing this test.** **In the event that this monitor unexpectantly fails to operate, the Operate can use the panel on 2RP7.**		
	5.4.3	IF performing 22MS28/22MS29 testing, THEN:	Operator reads step, confirms correct valve (22MS28) and continues on.		
			Evaluator's Note: The operator will need to navigate from the main screen (Operating Screen) to the Test Screen by performing the following: ♦ Selects **TEST** (top left) ♦ Selects **STOP/GOV TEST**		
	5.4.3.A	At the TURBINE E-H CONTROL & STATUS monitor, STOP/GOVERNOR VALVE TESTS screen, **ENSURE** the following TEST PERMISSIVES are green: ♦ TURBINE INLET PRESSURE OK ♦ NO OTHER TESTS IN PROGRESS	Operator verifies that the TEST PERMISSIVES stated in the step are GREEN		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System

TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	CAUTION	Failure of any Main Turbine Stop Valve or Governor Valve to reopen while the Main Turbine is operating, requires compliance with the actions in the Precautions and Limitations Step 3.4.3. Failure of ALL Turbine Inlet Pressure signals results in automatic switching to VLV POS CTRL and may require REFERENCE adjustments by the Operator until the test completes.	Operator reads Caution and continues on. Operator may refer to P&L 3.4.3. 3.4.3 Except for short periods during TSV (MS28) and GV (MS29) testing, **[VTD 326163]** ___ A. The Main Turbine should be operated at ≤75% of turbine load with any one HP Turbine inlet valve (MS28/MS29) CLOSED. ___ B. The Main Turbine should be operated at ≤30% of turbine load with any two HP Turbine inlet valves (MS28/MS29) CLOSED. ___ C. Engineering concurrence is required prior to exceeding any 8-hour period for either case		
	5.4.3.B	**DIRECT** Operator to monitor 22MS28 AND 22MS29 for full stroke	**CUE**: ***Field Operator will monitor the 22MS28 and 22MS29 for stroke.***		
	5.4.3.C	**RECORD** 22MS28 AND 22MS29 positions on Attachment 1, Section 3.0, by initialing TEST POSITION 1.	Operator records 22MS28 and 22MS29 are both **OPEN**. **Evaluator's Note**: Attachment 1 NOTE states that 22MS29 (Governor Valve) is considered OPEN when local position is ≥ 17.9% (≥ 2.5 inches) **CUE**: IF asked, ***field operator reports 22MS28 and 22MS29 are OPEN.***		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System

TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	NOTE	The MicroNet System will perform the following functions during testing: ▪ Modulate the 21, 23, and 24MS29 (GV) to maintain load during testing ▪ Ramp 22MS29 (GV) until 0% is achieved ▪ Issue an alarm should the GV indicate 0% without closed indication ▪ Hold the GV closed during 22MS28 (TSV) testing ▪ CLOSE the TSV and hold in the closed position for 5 seconds ▪ OPEN the TSV after 5 seconds elapses (Total Test Sequence .120 seconds) ▪ Ramp the GV OPEN upon selecting END TEST	Operator reads NOTE and continues on. **Evaluator's Note**: This note describes what occurs when test is in progress.		
*	5.4.3.D	At the TURBINE E-H CONTROL & STATUS monitor, STOP/GOVERNOR VALVE TESTS screen, ___ 1. **SELECT** 22MS28/22MS29 - START TEST. ___ 2. **ENSURE** 22MS28/22MS29 changes from NORMAL OPERATION to TEST IN PROGRESS	**Operator SELECTS 22MS28/22MS29 START TEST on HMI screen** **Operator verifies 22MS28/22MS29 changes from NORMAL OPERATION to TEST IN PROGRESS on HMI screen.** **CUE:** IF field operator is contacted, ***report that you are standing by to monitor.*** **Evaluator's Note**: P&L 3.6 requires local observation of valve movement.		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System
TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
			Evaluator's Note: When the valves strokes from CLOSED to OPEN, expect to see Tavg to rise when valve CLOSED and Tavg to lower when valve reopens. Time to CLOSE 22MS29 Governor Valve takes ≈ 2 minutes from start of test. Time to full stroke 22MS28 Stop Valve (closed to open) takes ≈ 25 seconds. 22MS28 will stay CLOSED for ≈ 10 seconds then reopens. Time to OPEN 22MS29 Governor Valve to previous position takes ≈ 2 minutes.		
	5.4.3.E	WHEN TSV (22MS28) CLOSED indication is received, THEN: ___ 1. **RECORD** 22MS28 AND 22MS29 positions on Attachment 1, Section 3.0, by initialing TEST POSITION 2. ___ 2. **RECORD** 22MS901 position on Attachment 1, Section 3.0, by initialing TEST POSITION 1.	**Evaluator's Note:** Expect **OHA G-12 TURB STM STOP VLV CLSD**, when 22MS28 is closed and clears when strokes open. **CUE**: ***Field operator reports that the 22MS29 is CLOSED and 22MS901 is OPEN, but missed monitoring the 22MS28 stroke.*** Operator records 22MS29 position as CLOSED and records on Attachment 1 Test Position 2 Operator records 22MS901 positon as OPEN and records on Attachment 1 Test Position 1		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System
TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
*	5.4.3.F	IF 22MS28 position was NOT captured locally, THEN: ___ 1. **SELECT** 22MS28/22MS29 - RESTROKE TSV. ___ 2. WHEN TSV (22MS28) OPEN/MOVING indication is cleared, THEN: ___ a. **RECORD** 22MS28 position on Attachment 1, Section 3.0, by initialing TEST POSITION 2. ___ b. **RECORD** 22MS901 position on Attachment 1, Section 3.0, by initialing TEST POSITION 1.	**Operator selects <u>RESTROKE</u> on HMI Test screen.** Operator records position of 22MS28 and 22MS901 CUE: ***Field operator reports 22MS28 valve stroke fully closed and open with no issues noted.*** ***IF asked, report that 22MS901 is OPEN and 22MS29 remains CLOSED***		
*	5.4.3.G	WHEN Stop Valve is OPEN, **SELECT** 22MS28/22MS29 - END TEST	**Operator SELECTS 22MS28/22MS29 <u>END TEST</u> on HMI screen**		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Main Turbine Generator System

TASK: Perform Retest on a Main Turbine Stop Valve IAW S2.OP-PT.TRB-0003

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	5.4.3.H	WHEN 22MS28/22MS29 changes from TEST IN PROGRESS to NORMAL OPERATION, THEN: ___ 1. **RECORD** 22MS28 position on Attachment 1, Section 3.0, by initialing TEST POSITION 3. ___ 2. **RECORD** 22MS29 position on Attachment 1, Section 3.0, by initialing TEST POSITION 4. ___ 3. **RECORD** 22MS901 position on Attachment 1, Section 3.0, by initialing TEST POSITION 2.	**CUE:** ***Field operator reports that 22MS28 & 22MS29 are OPENED and 22MS901 is CLOSED.*** Operator records 22MS28 OPEN position on Attachment 1 Test Position 3 Operator records 22MS29 OPEN position on Attachment 1 Test Position 4 Operator records 22MS901 CLOSED position on Attachment 1 Test Position 2		
	5.4.3.I	IF all STOP/GOVERNOR VALVE TESTS are completed, THEN **SELECT** CLOSE WINDOW at the TURBINE E-H CONTROL & STATUS monitor.	**CUE: JPM is Complete**		
	CUE:	**JPM is Complete** **RECORD** the STOP TIME. **STOP TIME:**_____	**Terminate the JPM when the operator reaches step 5.4.3.I .**		

JPM: 17-01 NRC Sim-e

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.

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

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

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

R 4. Initial setup conditions are identified.

R 5. Initiating and terminating Cues are properly identified.

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

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

R 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. 20 Date 9-14-18

R 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: R. Chan Date: 9-14-18

SME/Instructor: D. Raymond Date: 9/14/18

SME/Instructor: DAVID BELL Date: 9/14/18

J. BATES 9/14/18

Page Left Intentionally Blank

INITIAL CONDITIONS:

- Unit 2 is at 89% power.
- Power ascension is on hold to complete Main Turbine Valve testing IAW S2.OP-PT.TRB-0003, Main Turbine Valve Stroke Testing.
- A Retest on 22MS28 Main Turbine Stop Valve is required due to the valve failing to stroke during valve testing.
- Maintenance repairs are complete and the valve is turned over to the operating shift for testing.
- Control Rods are in Manual with rods at D-200.

INITIATING CUE:

- You are the Plant Operator.
- The CRS has directed you to PERFORM retest on **22MS28 Main Turbine Stop Valve** (TSV) IAW S2.OP-PT.TRB-0003, Main Turbine Valve Stroke Testing, section 5.4.3.
- All Prerequisites and P&L's are satisfied.
- Test Preparation section 5.2 is complete.
- An operator is in the field standing by the 22MS28 valve to monitor the valve stroke.
- Notify the CRS the results of the valve stroke test.
- Your evaluator will respond to all alarms not related to your task