PSEG Nuclear LLC

Job Performance Measure

Perform Control Rod System Surveillance Test

JPM Number: 21-01 NRC Sim-a

Revision Number: 02

Date: 01/10/23

Developed By:	**R. Chan** **Instructor**	**Date:**	1/10/23
Validated By:	**E. Gallagher** **SME or Instructor**	**Date:**	1/10/23
Reviewed By:	**M. Winkelspecht** **Operations Representative**	**Date:**	1/19/23
Approved By:	**M. Wadusky** **Training Department (Print/Sign)**	**Date:**	1/19/23

REVISION RECORD (Summary)

Revision Number	Date	Reason
01	7/25/22	Reformat JPM, update procedure rev and task standard after NUREG revision.
02	1/10/23	Incorporated NRC comments.

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:

RC Procedure(s) S2.OP-ST.RCS-0001 Rev. 27 Date Checked: 1-5-23

RC 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

R. Chan	1-5-23
SME/Instructor	Date
SME/Instructor	Date
SME/Instructor	Date

SIMULATOR SETUP INSTUCTIONS

- **RESET simulator to <u>IC-250</u> and VERIFY the below events on the Instructor Station**.
- Salem Unit 2 is at 100% power.
- No major equipment are out of service and no Tech Specs are active.
- The following malfunctions, overrides, and remotes were required to develop this IC.

MALF ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Severity
01	RD0045, Uncontrolled Rod Insert in Auto	N/A	N/A	N/A	ET-1	TRUE

1. Verify Overrides / Remotes:

ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Condition / Severity
01	B433 5 DI, Rod Bank Selector Sw in Auto				ET-1	ON

2. Verify Event Triggers:

ET#	Description	Command
1	KB433W1D, Rod bank Selector SW to Auto	

SPECIAL INSTRUCTIONS

1. Rod bank selector switch selected to CBC position.

2. Ensure ARPI screen up on Plant computer.

3. For efficiency, provide procedures to the operators up front to allow time to read and review.

4. If procedures not supplied ahead of time then ensure marked up surveillance and OP-AP-300-1001 procedure are available for students.

INITIAL CONDITIONS

- Unit 2 is at 100% power BOL.
- No major equipment is out of service and no Tech Specs are active.
- The rod control system surveillance is in progress.
- All sections are complete, except for exercising Control Bank D.

INITIATING CUE

- You are the Reactor Operator.
- The CRS directs you to complete the rod control system surveillance IAW S2.OP-ST.RCS-0001, Reactivity Control System Rod Control Assemblies.
- A Maintenance Technician is stationed at the Rod Control Power Cabinets (Relay Room)
- CRS directs that 15 steps of rod insertion will be performed to ensure each rod moves at least 10 steps.
- Notify the CRS when the testing is complete.
- Your evaluator will take care of all alarms not related to your task.

TASK STANDARD:

The task is satisfactorily met when the applicant has exercised Control Bank D at least 10 steps, and upon completion of the test, recognizes unexpected continuous rod movement and manually trips the reactor.

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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.

RECORD JPM Start Time:_____

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
		RECORD the JPM Start Time when the operator acknowledges READY TO START JPM.	Operator reads P&Ls and reviews OP-AP-300-1001 prior to start	
Cue: Provide candidate MARKED UP surveillance procedure (S2.OP-ST.RCS-0001) and OP-AP-300-1001. Examiners Note: Comments:				
4.1.10.1		IF the reactor is critical, THEN **ENSURE** TAVG is within ±1°F of TREF.	Operator checks Tave/Tref recorder on 2RP4 and determines Tavg is within +/-1 F of Tref.	
Cue: Examiners Note: Comments:				
4.1.10.2	*	**PLACE** Bank Selector Switch in the "CBD" position.	Operator rotates selector switch clockwise to the CBD position	
Cue: Examiners Note: Comments:				
4.1.10.3		**ENSURE** GRP. SELECT "B" lights are illuminated on Rod Control System Power Cabinets 21BD and 22BD.	Contacts Maint Technician at Power Cabinets**.**	

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
Cue: Technician reports GRP SELECT 'B' lights are illuminated on Cabinets 21 BD and 22BD. Examiners Note: Comments:				
4.1.10.4		Insert Control Bank D 1 step.	Operator inserts one step.	
Cue: **Examiners Note**: Steps 4.1.10.4 and 4.1.10.5 will be performed three times consecutively prior to the 15 step insertion in step 6. Comments:				
4.1.10.5		Withdraw Control Bank D 1 step.	Operator withdraws one step.	
Cue: Examiners Note: 1 ☐ 2 ☐ 3 ☐ Comments:				
4.1.10.6	*	MANEUVER Control Bank D at least 10 steps in any one direction.	Operator inserts Control Bank D 15 +/- 1 steps.	
Cue: Examiners Note: OHA E-24 may annunciate. Acknowledge as CRS. Comments:				

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
4.1.10.7		**ENSURE** each rod in Control Bank **D** indicated rod movement of at least 10 steps.	Operator monitors rod position on plant computer and determines D bank rods all moved at least 10 steps.	
Cue: Reactor Engineer reports rods indicate 10 step movement.(optional) **Examiners Note**: Operator may request to insert rods additional steps, IF so, just restate the request. Comments:				
4.1.10.8	*	RECORD CONTROL BANK D "Test Results" by initialing the SAT or UNSAT column using the Acceptance Criteria in Attachment 1, Rod Control Assembly Data.	Operator records test results as SAT.	
Cue: Examiners Note: Comments:				
4.1.10.9	*	RESTORE Control Bank D to the pre-test position.	Operator withdraws Bank D to previous position (ARO)	
Cue: Examiners Note: Comments:				
4.1.11.1		IF the reactor is critical, THEN ENSURE TAVG is within ±1°F of TREF.	Operator checks Tave/Tref recorder on 2RP4 and determines Tavg is within 1 F of Tref**.**	
Cue: Examiners Note:				

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
Comments:				
4.1.11.2		IF Turbine Power is ≤15%, THEN **PLACE** Bank Selector Switch in the "MAN" position.	N/A	
Cue: Examiners Note: Comments:				
ALTERNATE PATH STARTS HERE				
4.1.11.3	*	IF Turbine Power is >15%, THEN **PLACE** Bank Selector Switch in the "AUTO" OR "MAN" position as directed by the SM/CRS.	Operator determines that Rx power is > 15% and rotates selector switch counterclockwise to the AUTO position.	
Cue #1: IF asked, CRS directs rod bank selected to AUTO. **Cue #2**: After rod motion commences: IF operator recommends to CRS to place rods in Manual, THEN state; understand placing rods to manual. **Simulator Operator**: ENSURE **ET-1** is TRUE when rods selected to Auto. This will insert MALF: RD0045, Uncontrolled Rod Insertion in AUTO AND MANUAL**.** **Examiners Note**: The operator may refer to S2.OP-AB.ROD-0003, Continuous Rod Motion and take the actions in the AB to manually trip the reactor. **JPM Complete once Reactor is Tripped.** Comments:				
	*	Operator announces that rods are stepping in and no runback in progress. Operator places rod bank switch to Manual and reports rod motion has NOT stopped. Operator recognizes rod insertion is continuing	Operator Manually trips the Reactor.	
Cue:				

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
Examiners Note: Comments:				
Terminating Cue		**JPM COMPLETE**		

RECORD JPM Stop Time: _____

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

Facility: Salem **JPM No.:** 21-01 NRC Sim-a **Revision No.:** 02

Task Title: Perform Rod Control System Surveillance Test

Task No.: N1140340401

Source: Bank X New _____ Mod _____

System: 001 Control Rod Drive System (SF1)

K/A Number / Description: A4.16 Ability to manually operate and/or monitor in the control room: Rod speed and direction

K/A Rating RO 3.8 SRO N/A

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

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

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

Method of Testing: Simulated Performance _____ Actual Performance X

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

Required Materials: S2.OP-ST.RCS-0001

Reference(s): S2.OP-ST.RCS-0001 OP-AP-300-1001

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

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