PSEG Nuclear LLC

Job Performance Measure

INITIATE BLEED AND FEED USING REACTOR HEAD VENTS

JPM Number: 21-01 NRC Sim-d

Revision Number: 07

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
06	7/26/22	Update to new JPM format, update to NUREG 1021 changes.
07	1/10/23	Incorporated NRC comment on pg. 10.

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(s) 2-EOP-FRHS-1 Rev. 41 Date Checked: 7/26/22

RC 9. Pilot test the JPM:

a. Verify cues both verbal and visual are free of conflict, and

b. Ensure performance time is accurate.

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 11/28/22

SME/Instructor Date

SME/Instructor Date

SME/Instructor Date

SIMULATOR SETUP INSTUCTIONS

- **RESET simulator to IC-253 and VERIFY the below events on the Instructor Station**.
- Salem Unit 2 is shutdown.
- 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	AF0181A, 21 AFW pump trip	N/A	N/A	N/A	N/A	TRUE
02	AF0181B, 22 AFW pump trip	N/A	N/A	N/A	N/A	TRUE
03	AF0183, 23 AFW pump overspeed trip	N/A	N/A	N/A	N/A	TRUE
04	VL0298, 2PR2 fails to position	N/A	N/A	N/A	N/A	0%

1. Verify the following OVERRIDES / REMOTES:

ID #	Description	Delay Time	Initial Value	Ramp Time	Trigger	Condition / Severity
01	AF20D, 21 AFW control power	N/A	N/A	N/A	N/A	OFF
02	AF25D, 22 AFW control power	N/A	N/A	N/A	N/A	OFF

2. These malfunctions will simulate a total loss of all feed water and reaching the Bleed and Feed criteria of 3 SGs < 20% WR levels IAW FRHS-1. **ALTERNATE PATH**: 2PR2 will fail to open requiring the use of Rx Head Vent valves.

SPECIAL INSTRUCTIONS

1. **ENSURE** four (4) Reactor Head Vent keys are provided to the evaluator.
2. Extra Instructor to respond to alarms.

INITIAL CONDITIONS

- Unit 2 was manually tripped at 90% power due to elevated main turbine vibrations IAW S2.OP-AB.TL-0001.
- An inadvertent feedwater isolation actuation occurred resulting in the loss of all main feedwater.
- Loss of all AFW flow occurred when all AFW pumps tripped.
- The crew has entered 2-EOP-FRHS-1 due to valid RED Path on Heat Sink CFST based on all SG NR levels < 9% and AFW flow < 22E4 lbm/hr.
- Plant conditions have continued to deteriorate and three (3) steam generator Wide Range levels are now less than 20%.
- MSPI AFW pump failed to start.
- The CRS is implementing the CAS action to Initiate Bleed and Feed.

INITIATING CUE

- You are the Reactor Operator.
- The CRS has directed you to Initiate Bleed and Feed starting at **Step 11** IAW 2-EOP-FRHS-1, Response to Loss of Secondary Heat Sink.
- Your evaluator will respond to all alarms not related to your task.

TASK STANDARD:

The task is satisfactorily met when the applicant has actuated Safety Injection, opened one Pressurizer PORV, and opened 2RC40 - 43 RCS head vent valves IAW steps 11, 13, and 14 of 2-EOP-FRHS-1

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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)
N/A		**RECORD** the JPM Start Time when the operator acknowledges READY TO START JPM.		N/A
Cue: Provide candidate MARKED UP sheet of 2-EOP-FRHS-1. Examiners Note: None Comments:				
C11-1		**CAUTION** Steps 11 thru 14 Must Be Performed Quickly in order to establish RCS Heat Removal by RCS Bleed and Feed.	Operator reads the Caution and continues on.	
11	*	Actuate Both trains of SI	Operator initiates SI on both Trains by inserting key and turning switch clockwise until the SI Operate bezel illuminates and the SI Reset bezel extinguishes.	
Cue: Examiners Note: Operator only needs to initiate SI on one Train. Comments:				
12		Is centrifugal Charging Pump flow indicated on SI systems Charging flow meter	YES. Operator reports BIT flow is established by indication of flow on Charging flowmeter. (During validations flow was about 270 gpm)	
Cue: Examiners Note: Comments:				
12 Cont'd		Are all SI pumps Running	YES. Operator reports that both SI pumps are running by START PBs illuminated Red.	

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
Cue: Examiners Note: Comments:				
13		Is power available to BOTH PZR PORV stop valves	Yes operator reports power is available to both Stop valves	
Cue: Examiners Note: Comments:				
13 Cont'd		Are ALL PZR PORV Stop Valves OPEN	Operator reports that both PZR PORV Stop Valves are OPEN as indicated by 2PR6 and 2PR7 OPEN bezels illuminated.	
Cue: Examiners Note: Comments:				
ALTERNATE PATH STARTS HERE				
13 Cont'd	*	Open ALL PZR PORVs	Operator places both PZR PORVs in Manual and depresses OPEN PBs for 2PR1 and 2PR2. Operator reports that 2PR2 will NOT OPEN.	
Cue: **Examiners Note:** The PZR PORVS may be cycling during this time. The operator should determine that both PORVs are required to be fully open in Manual and maintained open and not credit auto operation.				

STEP	CRITICAL	ELEMENT	STANDARD	GRADE (S/U)
Comments:				
14		Are ALL PZR PORVs Open	NO. Operator reports that 2PR2 will NOT OPEN.	
Cue: Examiners Note: Comments:				
14 Cont'd	*	Open 2RC40 Thru 2RC43 (Reactor Head Vents)	At the 2RP2 backpanel, Operator obtains keys and inserts key into each keyswitch one at a time and turns clockwise until the OPEN indicator illuminates.	
Cue: **Examiners Note**: Lead Evaluator needs to provide the four (4) keys to the Operator. Comments:				
Terminating Cue		**JPM COMPLETE**		

RECORD JPM Stop Time: _____

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

Facility: Salem **JPM No.:** 21-01 NRC Sim-d **Revision No.:** 07

Task Title: Initiate Bleed and Feed Using Reactor Head Vents

Task No.: 1150290501

Source: Bank X New _____ Mod _____

System: 002 Reactor Coolant System (SF4P)

K/A Number / Description: A2.04 Ability to (a) predict the impacts of the following on the Reactor Coolant System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operations: Loss of heat sinks

K/A Rating RO 4.5 SRO 4.5

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: **8** Minutes **Actual Time Used:** Minutes

Method of Testing: Simulated Performance _____ Actual Performance X

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

Required Materials: 2-EOP-FRHS-1

Reference(s): 2-EOP-FRHS-1

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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