OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

STATION:	SALEM
SYSTEM:	Heat Removal From Reactor Core (SF 4) – Reactor Coolant System
TASK:	Initiate Feed and Bleed using Reactor Head Vents IAW EOP-FRHS-1
TASK NUMBER:	N1150290501
JPM NUMBER:	17-01 NRC Sim-d
ALTERNATE PATH:	[X]
K/A NUMBER:	002 A2.04
IMPORTANCE FACTOR:	4.3 (RO) / 4.6 (SRO)
APPLICABILITY:	EO [ ] RO [X] STA [ ] SRO [X]
EVALUATION SETTING/METHOD:	Simulator / Perform
REFERENCES:	2-EOP-FRHS-1, Rev 36 (checked 7-5-18)
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: 12-5-18
Validated By:	J. Klein (validated during 2018 Annual) SME or Instructor — Date: 7-5-18
Approved By:	Training Department — Date: 12/11/18
Approved By:	Operations Department — Date: 12/7/18

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: 17-01 NRC Sim-d

Rev #	Date	Description	Validation Required
00	9-29-17	Added revision history and simulator setup pages. Editorial comments from IP 71111.11 FASA.	Yes
01	11-13-17	Deleted malfunction for 2PR1 not opening in manual and changed initial conditions that three (3) SG WR levels are less than 32% for Bleed and Feed criteria IAW new revision to 2-EOP-FRHS-1 (Rev. 34).	Yes
02	3-12-18	Aligned task to appropriate Safety Function #10 K/A.	Yes
03	7-5-18	Updated JPM for Bleed and Feed criteria with 3 steam generator wide range levels < 20% IAW EOP-FRHS-1, Rev 36. Partially revalidated. Full validation performed during LOR exam development (see S-2).	Yes
04	12-5-18	Incorporated NRC Prep week comments. Identified step 24 as a Critical Step to open both PZR PORVs. Basis requires at least one PORV and Head Vents open for adequate bleed path. Revised Task Standard to include the requirement for; initiating SI and opening one PZR PORV for successful completion of the JPM. These changes are clarifications to the task standard and re-validation is not required.	No

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SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Heat Removal From Reactor Core (SF 4) – Reactor Coolant System

TASK: Initiate Feed and Bleed using Reactor Head Vents IAW EOP-FRHS-1

TASK NUMBER: N1150290501

SIMULATOR IC: **IC-233 (6-4-18)**

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	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 trip	N/A	N/A	N/A	N/A	TRUE
04	RP0247, False FW Isolation	N/A	N/A	N/A	N/A	TRUE

3. 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.

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
03	B202 E DI, 2PR2 Open PB	N/A	N/A	N/A	N/A	OFF

EVENT TRIGGERS:

ET#	Description	Command

SPECIAL INSTRUCTIONS:

- **ENSURE** four (4) Reactor Head Vent keys are available for the evaluator.
- Extra Instructor to respond to alarms.

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NAME: _____

DATE: _____

SYSTEM: Heat Removal From Reactor Core (SF 4) – Reactor Coolant System

TASK: Initiate Feed and Bleed using Reactor Head Vents IAW EOP-FRHS-1

TASK NUMBER: N1150290501

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 21** IAW 2-EOP-FRHS-1, Response to Loss of Secondary Heat Sink.
- 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. **Initiates Safety Injection (SI)**
2. **Opens one PZR PORV**
3. **Opens 2RC40 thru 2RC43 Reactor Head Vents IAW 2-EOP-FRHS-1.**

OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE

SYSTEM: **Heat Removal From Reactor Core (SF 4) – Reactor Coolant System**

TASK: **Initiate Feed and Bleed using Reactor Head Vents IAW EOP-FRHS-1**

* #	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	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. **START TIME:**_____			
	CUE	The following are Steps from 2-EOP-FRHS-1, Response to Loss of Secondary Heat Sink.			
	Step 21	CAUTION To establish RCS Het Sink Removal by RCS Bleed and Feed , Steps 24 thru 29 Must Be Performed Quickly and Without Interruption.	Operator reads the Caution and continues on.		
	Step 21 Contd.	STOP ALL RCPs	Operator verifies that all RCPs are already Stopped. (Step 7 of FRHS-1 stopped RCPs)		
*	Step 22	Initiate 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.** Note: Operator only needs to initiate SI on one Train.		
	Step 23	Are SI Valves in Safeguards Position	YES. Operator checks that all SI valve bezels on 2RP4 are illuminated.		
	Step 23.1	Is 21 or 22 Charging Pump Running	YES. Operator reports that both Charging pumps are running as indicated by START bezels illuminated Red.		
	Step 23.1 Contd.	Is BIT Flow Established	YES. Operator reports BIT flow is established by indication of flow on Charging flowmeter. (During validations flow was about 235 gpm)		

SYSTEM: Heat Removal From Reactor Core (SF 4) – Reactor Coolant System

TASK: Initiate Feed and Bleed using Reactor Head Vents IAW EOP-FRHS-1

* #	STEP NO.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT evaluation)
	Step 23.2	Is any SI Running	YES. Operator reports that both SI pumps are running by START PBs illuminated Red.		
	Step 23.2 Contd.	Are Valves in Table C Open for At Least One Running SI Pump	YES. Operator verifies that all valves are OPEN in Table C for both running SI pumps as indicated by valve OPEN bezels illuminated.		
	Step 23.2 Contd.	Are All Charging and SI Pumps Running And Aligned to Deliver Flow	YES. Operator identifies that all Charging and SI Pumps are running and the valves are in the safeguards positions.		
	Step 24	Open Both PZR PORV Stop Valves	Operator reports that both PZR PORV Stop Valves are OPEN as indicated by 2PR6 and 2PR7 OPEN bezels illuminated.		
		[ALTERNATE PATH STARTS HERE:]	**2PR2 Fails to Open**		
*	Step 24 Contd.	Open Both PZR PORVs	**Operator places both PZR PORVs in Manual and depresses OPEN PBs for 2PR1 and 2PR2.** Operator reports that 2PR2 will NOT OPEN. <u>Note</u>: 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 24.1	Are Both PZR PORV Stop Valves Open	YES. Operator reports both 2PR6 and 2PR7 are open as indicated by OPEN bezels illuminated.		

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	Step 24.1 Contd.	Are Both PZR PORVs Open	NO. Operator reports that 2PR2 will NOT OPEN.		
*	Step 24.1 Contd.	Open 2RC40 Thru 2RC43 (Reactor Head Vents)	**CUE:** Lead Evaluator needs to provide the four (4) keys to the Operator. **At the 2RP2 backpanel, Operator obtains keys and inserts key into each keyswitch one at a time and turns clockwise until the OPEN bezel illuminates.** **Terminate JPM when 2RC40 Thru 2RC43 are open.**		
	CUE:	**JPM is Complete** **RECORD** the STOP TIME. **STOP TIME:**_____	**Terminate the JPM when the operator Opens 2RC40 Thru 2RC43.**		

JPM: 17-01 NRC Sim-d

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 12-5-18

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

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

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

4. Initial setup conditions are identified.

5. Initiating and terminating Cues are properly identified.

6. Task standards identified and verified by SME review.

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

8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. _____ Date _____

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

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.

NA R 12-5-18

SME/Instructor:_____ Date: _____

SME/Instructor:_____ Date: _____

SME/Instructor:_____ Date: _____

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