

**OPERATOR TRAINING PROGRAM
JOB PERFORMANCE MEASURE**

STATION:	SALEM		
SYSTEM:	Component Cooling Water System		
TASK:	Start A CCW Pump IAW 2-EOP-APPX-1 (23 CCW Pump)		
TASK NUMBER:	N1150420501		
JPM NUMBER:	16-01 NRC JPM Sim-h		
ALTERNATE PATH:	<input checked="" type="checkbox"/>	K/A NUMBER:	008 A2.01
APPLICABILITY:		IMPORTANCE FACTOR:	<u>3.3</u> <u>3.6</u>
EO <input type="checkbox"/>	RO <input checked="" type="checkbox"/>	STA <input type="checkbox"/>	SRO <input checked="" type="checkbox"/>
EVALUATION SETTING/METHOD:	Simulator / Perform		
REFERENCES:	2-EOP-APPX-1 Rev. 25 (checked 9-29-17)		
TOOLS AND EQUIPMENT:	None		
VALIDATED JPM COMPLETION TIME:	<u>10 min</u>		
TIME PERIOD IDENTIFIED FOR TIME CRITICAL STEPS:	<u>N/A</u>		
Developed By:	R. Chan <i>Rudolph Chan</i>	Date:	9-29-17
Validated By:	<i>[Signature]</i> D. Maxey <i>Dan Maxey</i> PAT DRESLOW <i>Pat Dreslow</i> SME or Instructor	Date:	9-29-17
Approved By:	Training Department <i>[Signature]</i>	Date:	11/13/17
Approved By:	Operations Department <i>[Signature]</i>	Date:	11/13/17
ACTUAL JPM COMPLETION TIME:			
ACTUAL TIME CRITICAL COMPLETION TIME:			
PERFORMED BY:			
GRADE:	<input type="checkbox"/> SAT	<input type="checkbox"/> UNSAT	
REASON, IF UNSATISFACTORY:			
EVALUATOR'S SIGNATURE:			DATE:

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REVISION HISTORY

JPM NUMBER: 16-01 NRC Sim-h

Rev #	Date	Description	Validation Required
00	9-29-17	Added revision history and simulator setup pages. Editorial comments from IP 71111.11 FASA. Incorporated changes to 2-EOP-APPX-1 Rev. 25.	Yes

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SIMULATOR SETUP INSTRUCTIONS

SYSTEM: Component Cooling Water System

TASK: Start A CCW Pump IAW 2-EOP-APPX-1 (23 CCW Pump)

TASK NUMBER: N1150420501

SIMULATOR IC: IC-247

MALFUNCTIONS / REMOTES:

1. Reset the simulator to IC-247 (IC-239 used as baseline)
2. Ensure the following malfunction on the event summary:
 - a. **RC0001B:** RCS rupture of RC loop 22 set to TRUE
 - b. **EL0134:** Loss of 500 KV off-site power
 - c. **EL0145:** Loss of 2B Vital Bus

OVERRIDES:

- **A601 E DI:** KA601PBM 21 CC PUMP-START. Final = Override OFF.

SPECIAL INSTRUCTIONS:

- **ENSURE** sufficient copies of 2-EOP-APPX-1.
- Extra Instructor on the floor is recommended to respond to the numerous post-trip alarms that may unnecessarily distract the candidate.

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DATE: _____

SYSTEM: Component Cooling Water System

TASK: Start A CCW Pump IAW 2-EOP-APPX-1 (23 CCW Pump)

TASK NUMBER: N1150420501

INITIAL CONDITIONS:

- The Unit 2 reactor was manually tripped and a SI initiated based on indications of a large break LOCA.
- A loss of off-site power occurred when the Main Generator breakers opened.
- 2B 4KV Vital Bus is de-energized due to Bus Differential with its Diesel running.
- 2-EOP-TRIP-1 is in progress.
- NO CCW pumps are running (SEC Mode 3).
- 21 and 22 CCW pumps were in service prior to the trip and 23 CCW pump was in Auto.

INITIATING CUE:

- You are the Reactor Operator.
- The CRS directs you to **START ONE** CCW pump IAW 2-EOP-APPX-1.
- Notify the CRS when one CCW pump is running.

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. **STARTS 23 CCW pump IAW EOP-APPX-1.**

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SYSTEM: **Component Cooling Water System**

TASK: **Start A CCW Pump IAW 2-EOP-APPX-1 (23 CCW Pump)**

* #	STEP No.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT Evaluation)
		Operator obtains 2-EOP-APPX-1			
	CUE:	Fill in the JPM Start Time when the student acknowledges the Initiating Cue. START TIME: _____			
	1	CHECK 4 KV vital bus status: a. CHECK AT LEAST ONE vital bus ENERGIZED by station power transformers.	Determines that NONE of the 4 KV vital buses are energized from the station power transformers. (2A and 2C are energized from EDGs, and 2B is de-energized). RNO: GOES TO Step 2.		

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* #	STEP No.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT Evaluation)
	2	<p>CHECK ECCS pump (CVC,SI, or RHR) and AFW pump status:</p> <p>a. CHECK all ECCS pumps AND motor-driven AFW pumps running on energized vital buses.</p> <p>b. CHECK one CCW pump running.</p>	<p>Checks running pumps and determines that <u>all</u> ECCS pumps AND motor driven AFW pumps <u>running on energized vital buses (A and C).</u></p> <p>Checks CCW pump status and determines <u>NO</u> CCW Pumps are running.</p> <p>RNO: GOES TO Step 3.</p>		
	3	<p>SELECT CCW pump start strategy (choose one (a, b, c, d)):</p>	<p>Selects 'C' CCW Pump Start strategy based on:</p> <p>-De-energized 4KV Vital Bus = B. -CCW Pumps Available = 21 or 23 -GO TO Step No. 6.</p>		

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* #	STEP No.	STEP (Shaded area denotes Critical Step) (* Critical Step)	STANDARD (Bolded area identifies Task Standard)	EVAL S/U	COMMENTS (Required for UNSAT Evaluation)
* #	6	<p>[4KV Vital Bus "B" De-energized]:</p> <p>a. CHECK 21 CCW Pump AVAILABLE.</p> <p>b. *BLOCK 2A SECs</p> <p>c. *RESET 2A SECs</p> <p>d. *STOP 21 CS Pump:</p> <p>e. *START 21 CCW Pump:</p> <p>[ALTERNATE PATH STARTS HERE:]</p>	<p>Determines 21 CCW Pump is available (in service prior to Rx Trip).</p> <p>Rotates 2A SEC Block Switch to BLOCK and releases.</p> <p>Depresses Emergency Loading Reset for 2A SEC on 2CC3 and verifies bezel illuminates.</p> <p>Depresses the 21 CS STOP PB and verifies STOP bezel illuminates on 2CC1.</p> <p>Depresses the 21 CCW START PB and reports that 21 CCW Pump did <u>NOT</u> start.</p> <p>RNO [step e]:</p> <ol style="list-style-type: none"> 1. RESET Containment Spray 2. START 21 CS Pump, as necessary. 3. GO TO Step 6(h) <p><u>Note:</u> Re-starting 21 CS pump is necessary when 22 CS is stopped later.</p> <p>Cue: <u>IF</u> the operator does not re-start 21 CS pump, THEN state: CRS directs re-starting 21 CS pump.</p>		

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* #	6 Contd.	h. CHECK 23 CCW Pump AVAILABLE i. *BLOCK 2A AND 2C SECs j. *RESET 2A AND 2C SECs k. *STOP 22 CS Pump l. *START 23 CCW Pump m. *RESET Containment Spray *CLOSE Valve 22CS2 n. GO TO Step 8	Determines 23 CCW Pump is available. Rotates 2C SEC Block Switch to BLOCK and releases (2A selected to Block previously). Depresses Emergency Loading Reset PBs for 2A and 2C SEC on 2CC3 and verifies bezel illuminates. Depresses 22 CS STOP PB and verifies STOP bezel illuminates on 2CC1. Depresses 23 CCW START PB and verifies START bezel illuminates Depresses Train A and B RESET SPRAY ACTUATION PBs and verifies RESET SPRAY ACTUATION bezel illuminates Green (Note: previously reset from Step 6.e). Depresses 22CS2 CLOSE PB and verifies CLOSE bezel illuminates. GOES TO Step 8		

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	CUE:	JPM is Complete. RECORD the STOP TIME. STOP TIME: _____	Terminate JPM when operator completes GOES TO Step 8.		

JOB PERFORMANCE MEASURE

JOB PERFORMANCE MEASURE VALIDATION CHECKLIST

JPM#: 16-01 NRC Sim-h

NOTE: All steps of this checklist should be performed upon initial validation. Prior to JPM usage, revalidate JPM using steps 8 and 11 below.

- PB 1. Task description and number, JPM description and number are identified.
- PB 2. Knowledge and Abilities (K/A) references are included.
- PB 3. Performance location specified. (in-plant, control room, or simulator)
- PB 4. Initial setup conditions are identified.
- PB 5. Initiating and terminating Cues are properly identified.
- PB 6. Task standards identified and verified by SME review.
- PB 7. Critical steps meet the criteria for critical steps and are identified with an asterisk (*).
- PB 8. Verify the procedure referenced by this JPM matches the most current revision of that procedure: Procedure Rev. 25 Date 9-28-17
- PB 9. Pilot test the JPM:
 - a. verify Cues both verbal and visual are free of conflict, and
 - b. ensure performance time is accurate.
- N/A 10. If the JPM cannot be performed as written with proper responses, then revise the JPM.
- N/A 11. When JPM is revalidated, SME or Instructor sign and date JPM cover page.

SME/Instructor: AT BRESNA AT Date: 9-29-17

SME/Instructor: D. Maxey Date: 9/29/17

SME/Instructor: BR Sharov Date: 9/29/17

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