

SEQUOYAH NUCLEAR PLANT

**1305 NRC
SIMULATOR
JPM A**

RO/SRO
JOB PERFORMANCE MEASURE

Task: 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies

Task #: 0010010201

Task Standard: The examinee will perform 0-SI-OPS-085-011.0 Reactivity Control Systems Moveable Control Assemblies starting with Control Bank Bank D. Following the uncontrolled rod movement, the examinee will trip the reactor using AOP-C.01, Rod Control System Malfunctions

Alternate Path: YES: X NO:

Time Critical Task: **YES:** **NO:** **X**

K/A Reference/Ratings: 001.A2.11 (4.4/4.7)

Method of Testing:

Simulated Performance: **Actual Performance:** **X**

Evaluation Method:

Simulator	X	In-Plant	Classroom
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Main Control Room	Mock-up
	
	
	

Performer: _____

Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: **SAT:** **UNSAT:**

Validation Time: 10 min **Total Time:**

Performance Time: **Start Time:** **Finish Time:**

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 15, 96% power BOL.
3. If IC XX is not available perform the following:
 - Reset to IC 15, 96% power BOL.
 - Ensure Rod Control Mode Selector Switch in CB C position.
 - Run SCN file 1305 NRC JPM A
4. Display the following on ICS:
 - RPI for CB D
 - Computer point T0499A
 - Computer point T0496A
5. PLACE SIMULATOR IN RUN
6. An extra operator will be required to acknowledge alarms.
7. ACKNOWLEDGE ALARMS
8. FREEZE SIMULATOR.
9. Provide a copy of 0-SI-OPS-085-011.0 REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES.
10. Save as a temporary IC, if repeat runs of JPM will be desired.
11. PLACE SIMULATOR IN RUN
12. After JPM is complete, delete the temporary IC, if used. Delete the contents of the recycle bin, If a temporary IC has been deleted.
13. **When the candidate begins inserting Control Bank D, insert Malfunction RD02 (uncontrolled insertion for Bank D group 2)**

Tools/Equipment/Procedures Needed:

References:

	Reference	Title	Rev No.
1.	0-SI-OPS-085-011.0	REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES	34
2.	AOP-C.01	ROD CONTROL SYSTEM MALFUNCTIONS	22

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Unit 1 is in MODE 1, 96% power, BOL.
2. 0-SI-OPS-085-011.0 REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES is in progress at section 6.1.8.

INITIATING CUES:

1. Perform 0-SI-OPS-085-011.0 REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES to verify rod operability for Control Bank D starting at section 6.1.8 step 1.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of 0-SI-OPS-085-011.0, REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of 0-SI-OPS-085-011.0, REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES.	
<u>Cue:</u>	Provide a marked up copy of 0-SI-OPS-085-011.0, REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES.	
<u>Comment</u>		

- CAUTION 1** An RPI position exceeding 12 steps (indicated position) from its respective group step counter is **INOPERABLE**.
- CAUTION 2** When a demand signal is present the rods may drop if moving the rod control hand switch from manual or auto to bank select because a step may be in progress.
- NOTE** Appendix B may be copied and attached to this Instruction should additional performances be required.

STEP 2 :	[1] IF [HS-85-5110], Rod Control Mode Selector Switch, is to be rotated through AUTO position, THEN ENSURE computer points [T0499A] and [T0496A] are within 1.0°F of each other.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the step as N/A.	
<u>Comment</u>		

STEP 3 :	[2] PLACE [HS-85-5110] Rod Control Mode Selector Switch to Control Bank D position (CBD).	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-85-51110, Rod Control Mode Selector Switch to Control Bank D.	Critical Step
<u>Comment</u>		

CAUTION	Insertion of Control Bank D may cause a decrease in RCS Tavg on RCS pressure resulting in operation of the backup heaters.	
NOTE 1	Window A-7, ROD CONTROL BANKS LIMIT LOW will alarm if Control Bank D position is inserted within 10 steps of the Low- Low Insertion Limit. (T.S. 3.1.3.6 or ZR-85-5070 Rod Insertion Limit Recorder may be used to determine Lo-Lo insertion limit).	
NOTE 2	Group Step Counter may be required to indicate > 10 step movement to ensure each Rod Position Indicator has moved a minimum of 10 steps.	
NOTE 3	Window C-7, BANK D AUTO ROD WITHDRAWAL BLOCKED, will clear and reinitiate during testing if Bank D is above 220 steps prior to testing.	
STEP 4 :	[3] INSERT Control Bank D a minimum of 10 steps with [HS-85-5111] Rod Control Switch.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-85-51111, Rod Control to IN and obtains \geq a 10 step movement of Control Bank D Group 1 and Group 1 by 1-XI-85-5105D1 and D2.	Critical Step
<u>Comment</u>		

STEP 5 :	<p>[4] VERIFY the following:</p> <p><u>GROUP STEP COUNTER MOVEMENT \geq 10 STEPS</u> <input type="checkbox"/></p> <p><u>ALL ROD POSITION INDICATORS MOVEMENT \geq 10 STEPS</u> <input type="checkbox"/></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	The examinee verifies Control Bank D Step Counters and Individual Rod Position Indicators have moved \geq 10 steps.	
<u>Comment</u>		


CAUTION


Exercise caution when returning bank to the initial conditions so as NOT to exceed the fully withdrawn position.

STEP 6 :	<p>[5] WITHDRAW Control Bank D to INITIAL position OR to new full out position of 0-PI-NXX-085-001.0, <i>Resetting Control Rod Fully Withdrawn Position</i>, with [HS-85-5111] Rod Control Switch.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places HS-85-51111, Rod Control to OUT and observes Control Bank D Group 2 inserting continuously.	
<u>Examiner Note:</u>	The examinee may elect to trip the Reactor. If the examinee trips the reactor, go to JPM step 9.	
<u>Comment</u>		

STEP 7 :	<p>1. DIAGNOSE the failure:</p> <table border="1"> <thead> <tr> <th>IF...</th><th>GO TO SECTION</th><th>PAGE</th></tr> </thead> <tbody> <tr> <td>Uncontrolled rod bank movement (rod movement NOT due to actual T-avg/T-ref mismatch or change in reactor/turbine power)</td><td>2.1</td><td>4</td></tr> </tbody> </table>	IF...	GO TO SECTION	PAGE	Uncontrolled rod bank movement (rod movement NOT due to actual T-avg/T-ref mismatch or change in reactor/turbine power)	2.1	4	<p>___ SAT</p> <p>___ UNSAT</p>
IF...	GO TO SECTION	PAGE						
Uncontrolled rod bank movement (rod movement NOT due to actual T-avg/T-ref mismatch or change in reactor/turbine power)	2.1	4						
<u>Standard:</u>	The examinee transitions to AOP-C.01, ROD CONTROL SYSTEM MALFUNCTIONS section 2.1.							
<u>Comment</u>								

NOTE: Step 1 is an immediate action step.

STEP 8 :	ALTERNATE PATH 1. STOP uncontrolled rod motion: a. PLACE rod control in MAN. b. CHECK rod motion STOPPED. b. TRIP the reactor, and GO TO E-0, Reactor Trip or Safety Injection. 	____ SAT ____ UNSAT
<u>Standard:</u>	The examinee places HS-85-51110, Rod Control Mode Selector Switch to MANUAL, checks Control Bank D is still inserting, and transitions to the RNO.	
<u>Comment</u>		

STEP 9 :	b. TRIP the reactor, and GO TO E-0, Reactor Trip or Safety Injection. 	____ SAT ____ UNSAT
<u>Standard:</u>	The examinee places 1-RT-1 or 1-RT-2 to TRIP.	Critical Step
<u>Comment</u>		

Terminating Cue:	When the examinee trips the reactor provide the following cue, "Another operator will complete the remaining steps of this procedure.".	STOP
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Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 1, 96% power, BOL.
2. 0-SI-OPS-085-011.0 REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES is in progress at section 6.1.8.

INITIATING CUES:

1. Perform 0-SI-OPS-085-011.0 REACTIVITY CONTROL SYSTEMS MOVEABLE CONTROL ASSEMBLIES to verify rod operability for Control Bank D starting at section 6.1.8 step 1.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

SEQUOYAH NUCLEAR PLANT

**1305 NRC
SIMULATOR
JPM B**

RO/SRO
JOB PERFORMANCE MEASURE

Task: Align ECCS Pumps to the Containment Sump

Task #: 3010060601

Task Standard: The examinee will align CCP and SI pump flowpath for sump recirculation using ES-1.3 TRANSFER TO RHR CONTAINMENT.

Alternate Path: YES: X NO:

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings: 006 A4.07 (4.4/4.4)

Method of Testing:

Simulated Performance: **Actual Performance:** **X**

Evaluation Method:

Simulator	X	In-Plant	Classroom
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Main Control Room	Mock-up
	

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: **SAT:** **UNSAT:**

Validation Time: 15 min **Total Time:**

Performance Time: **Start Time:** **Finish Time:**

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 302
3. If IC 302 is not available perform the following:
 - Reset to IC 24
 - IOR ZDIHS7421A f:0
 - {global95[5670]} DOR ZDIHS7421A
4. An extra operator will be required to acknowledge alarms.
5. ACKNOWLEDGE ALARMS
6. FREEZE SIMULATOR.
7. Save as a temporary IC, if repeat runs of JPM will be desired.
8. Provide a copy of ES-1.3 TRANSFER TO RHR CONTAINMENT SUMP.
9. PLACE SIMULATOR IN RUN
10. After JPM is complete, delete the temporary IC, if used. Delete the contents of the recycle bin, If a temporary IC has been deleted.

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
2. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

References:

	Reference	Title	Rev No.
1.	ES-1.3	TRANSFER TO RHR CONTAINMENT SUMP	19
2	1-AR-M6-E	MISCELLANEOUS	23

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. A LOCA is in progress on Unit 1.
2. ECCS pumps are running taking a suction from the RWST.

INITIATING CUES:

1. When conditions permit, you are directed to perform ES-1.3, Transfer to Cold Leg Recirculation.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	<div style="border: 2px solid black; padding: 10px; text-align: center;"> MISCELLANEOUS 1-XA-55-6E </div> <div style="border: 1px solid black; padding: 10px; text-align: center; margin: 10px auto; width: 80%;"> LS-63-50A RWST LVL LO </div> <p>Corrective Actions</p> <p>[1] IF SIS has occurred with RWST level decreasing to ~ 27%, THEN PERFORM ES-1.3, <i>Transfer to RHR Containment Sump</i>, as applicable.</p>	<p>____ SAT</p> <p>____ UNSAT</p>
<u>Standard:</u>	Examinee acknowledges alarm and transitions to ES-1.3 TRANSFER TO RHR CONTAINMENT SUMP.	
<u>Comment</u>		

STEP 2 :	Obtain a copy of ES-1.3 TRANSFER TO RHR CONTAINMENT SUMP	<p>____ SAT</p> <p>____ UNSAT</p>
<u>Standard:</u>	Examinee obtains a copy of ES-1.3 TRANSFER TO RHR CONTAINMENT SUMP.	
<u>Cue:</u>	Provide a copy of ES-1.3 TRANSFER TO RHR CONTAINMENT SUMP.	
<u>Comment</u>		


STEP 3 :	1. SUSPEND FRP implementation.	___ SAT ___ UNSAT
<u>Standard:</u>	Examinee addresses procedure step.	
<u>Cue</u>	If directed, acknowledge direction.	
<u>Comment</u>		

STEP 4 :	2. DETERMINE if containment spray should be stopped: a. CHECK any containment spray pump RUNNING.	___ SAT ___ UNSAT
<u>Standard:</u>	Examinee verifies both Containment Spray pumps running by observing red indicating lights above pump handswitches ON.	
<u>Comment</u>		

STEP 5 :	<p>2. DETERMINE if containment spray should be stopped:</p> <p>b. ENSURE the following:</p> <ul style="list-style-type: none"> one Cntmt Spray pump in PULL-TO-LOCK remaining Cntmt Spray pump RUNNING. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places the A OR B Containment Spray 1-HS-72-27A or 1-HS-72-10A handswitch in PULL-TO-LOCK within 2 minutes of the RWST Level Lo Alarm.	Critical Step
<u>Comment</u>		
<u>Examiner Note:</u>	Annotate the stop time for stopping the Containment Spray pump here. ____	

STEP 6 :	<p>2. DETERMINE if containment spray should be stopped:</p> <p>c. CHECK containment pressure greater than or equal to 2.0 psig.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee verifies containment pressure by observing PDI-30-45, PDI-30-44, PDI-30-43, or PDI-30-42.	
<u>Comment</u>		

STEP 7 :	<p>2. DETERMINE if containment spray should be stopped:</p> <p>RNO</p> <p>c. PERFORM the following:</p> <p>1) RESET containment spray signal.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places both Containment Spray reset pushbuttons 1-HS-72 43 and 1-HS-72 42 to RESET.	Critical Step
<u>Comment</u>		

STEP 8 :	<p>2. DETERMINE if containment spray should be stopped:</p> <p>c. PERFORM the following:</p> <p>2) ENSURE both cntmt spray pumps STOPPED and PLACE in A-AUTO.</p> <p>3) CLOSE cntmt spray discharge valves FCV-72-39 and FCV-72-2.</p> <p>4) GO TO Step 3.</p> 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places the remaining running Containment Spray Pump handswitch to STOP, both Containment Spray Pump handswitches to A-AUTO, places Containment Spray discharge valve handswitches FCV-72-39 and FCV-72-2 to close and proceeds to step 3.	Critical Step
<u>Comment</u>		

STEP 9 :	3. MONITOR RHR automatic switchover: a. CHECK containment sump level greater than 11%.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee checks containment sump level greater than 11% by observing LI-63-176, LI-63-177, LI-63-178, or LI-63-179.	
<u>Comment</u>		

STEP 10 :	3. MONITOR RHR automatic switchover: b. CHECK containment sump valves FCV-63-72 and FCV-63-73 OPEN.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee verifies FCV-63-73 and FCV-63-73 OPEN by observing the red lights above 1-HS-63-72A and 1-HS-63-73A ON.	
<u>Comment</u>		

STEP 11 :	<p>3. MONITOR RHR automatic switchover:</p> <p>c. CHECK RHR suction valves FCV-74-3 and FCV-74-21 CLOSING.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	<p>ALTERNATE PATH</p> <p>Examinee places containment sump valve 1-HS-74-21A to OPEN</p> <p>Examinee checks RHR suction valves FCV-74-3 CLOSING by observing the red and green lights above 1-HS-74-3A ON (Not Critical).</p>	Critical Step
<u>Comment</u>		

STEP 12 :	<p>4. MONITOR RWST supply to ECCS pumps:</p> <ul style="list-style-type: none"> • RWST LVL LO-LO alarm DARK [M-6E, E4]. • RWST level greater than 8%. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee monitors RWST LVL LO-LO alarm DARK on [M-6E, E4] by observing alarm window OFF and RWST level greater than 8% by observing LI-63-50, LI-63-51, LI-63-52, or LI-63-53.	
<u>Comment</u>		

STEP 13 :	<p>5. MONITOR RHR pumps RUNNING.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee monitors RHR pumps RUNNING by observing the red lights above 1-HS-74-10A and 1-HS-74-20A ON.	
<u>Comment</u>		

<p>CAUTION Transfer to sump recirculation may cause high radiation in Aux Building.</p> <p>NOTE Step 6 should be handed off to a Unit Operator.</p>		
STEP 14 :	6. PERFORM the following:	<p>____ SAT</p> <p>____ UNSAT</p>
<u>Standard:</u>	Examinee directs another operator to perform step 6 and proceeds to step 7.	
<u>Cue</u>	Acknowledge direction from the examinee	
<u>Comment</u>		
<u>Examiner Note</u>	The station standard practice is for the BOP operator to perform manipulations outside the "At The Controls Area" during this evolution.	

STEP 15 :	7. VERIFY RHR automatic switchover:	<p>____ SAT</p> <p>____ UNSAT</p>
<u>Standard:</u>	Examinee monitors containment sump valves FCV-63-72 and FCV-63-73 OPEN by observing the red indicating lights above 1-HS-63-72A and 1-HS-63-73A ON.	
<u>Comment</u>		

STEP 16 :	7. VERIFY RHR automatic switchover:	___ SAT ___ UNSAT
	b. ENSURE RWST to RHR suction valves FCV-74-3 and FCV-74-21 CLOSED.	
<u>Standard:</u>	Examinee ensures RWST to RHR suction valves FCV-74-3 and FCV-74-21 CLOSED by observing the green indicating lights above 1-HS-74-3A and 1-HS-74-21A ON.	
<u>Comment</u>		

<p>CAUTION SI pump operation with miniflow isolated and RCS pressure above shutoff head will result in SI pump damage.</p> <p>NOTE The following continuous action applies even after this procedure is exited.</p>		
STEP 17 :	8. MONITOR RCS pressure less than 1500 psig.	___ SAT ___ UNSAT
<u>Standard:</u>	Examinee monitors RCS pressure less than 1500 psig by observing PI-68-62, PI-68-69 or other installed plant instrumentation.	
<u>Comment</u>		

STEP 18 :	<p>9. CLOSE SI pump miniflow to RWST valves:</p> <ul style="list-style-type: none"> • FCV-63-3 • FCV-63-4 • FCV-63-175 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places 1-HS-63-3A AND 1-HS-63-4A AND 1-HS-63-175A to CLOSE	Critical Step
<u>Comment</u>		

STEP 19 :	<p>10. CLOSE RHR crosstie valves:</p> <ul style="list-style-type: none"> • FCV-74-33 • FCV-74-35. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places 1-HS-74-33A AND 1-HS-74-35A to CLOSE	Critical Step
<u>Comment</u>		

STEP 20 :	<p>11. OPEN CCP and SI pump suction valves from RHR:</p> <ul style="list-style-type: none"> FCV-63-7 FCV-63-6. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places 1-HS-63-7A AND 1-HS-63-6A to OPEN	Critical Step
<u>Comment</u>		

STEP 21 :	<p>12. ALIGN RHR discharge to CCP and SI pump suction:</p> <p>a. OPEN RHR discharge to CCP suction FCV-63-8.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee places 1-HS-63-8A to OPEN.	Critical Step
<u>Comment</u>		

STEP 22 :	12. ALIGN RHR discharge to CCP and SI pump suction: b. OPEN RHR discharge to SI pump suction FCV-63-11.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-63-11A to OPEN.	Critical Step
<u>Comment</u>		

Terminating Cue:	Provide the following cue “Another operator will perform the remaining steps of this procedure.”	STOP
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Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. A LOCA is in progress on Unit 1.
2. ECCS pumps are running taking a suction from the RWST.

INITIATING CUES:

1. When conditions permit, you are directed to perform ES-1.3, Transfer to Cold Leg Recirculation.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

**SEQUOYAH NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**1305 NRC
SIMULATOR
JPM C**

RO/SRO
JOB PERFORMANCE MEASURE

Task: Terminate SI and Re-Establish Charging Flow

Task #: 0001000501

Task Standard: Safety Injection is terminated using E-0 resulting in one of the CCPs in A-Auto and the alternate charging supply valve open due to the failure of the normal charging supply valve.

Alternate Path: YES: X NO:

Time Critical Task: YES: NO: X

K/A Reference/Ratings: EPE E02 EA1.1 (4.0/3.9)

Method of Testing:

Simulated Performance: **Actual Performance:** X

Evaluation Method:

Simulator X **In-Plant** **Classroom**

Main Control Room **Mock-up**

Performer:
Trainee Name

Evaluator: /
Name / Signature DATE

Performance Rating: SAT: UNSAT:

Validation Time: 14 min **Total Time:**

Performance Time: **Start Time:** **Finish Time:**

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 309
3. If IC 309 is not available perform the following:
 - a) Reset to IC 16
 - b) Insert IMF RP04B ON [False Auto SIS, Hi Cntmt Press.]
 - c) Insert override ZDIHS6286A to CLOSE to override normal charging valve closed.
 - d) Perform E-0 (including ES-0.5) through step #14.
4. An extra operator will be required to acknowledge alarms.
5. ACKNOWLEDGE ALARMS
6. FREEZE SIMULATOR.
7. Provide a copy of E-0, REACTOR TRIP OR SAFETY INJECTION marked up through step 14.
8. Save as a temporary IC, if repeat runs of JPM will be desired.
9. PLACE SIMULATOR IN RUN
10. After JPM is complete, delete the temporary IC, if used. Delete the contents of the recycle bin, If a temporary IC has been deleted.

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
2. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

References:

	Reference	Title	Rev No.
1.	E-0	REACTOR TRIP OR SAFETY INJECTION	35
2.			

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3 following a spurious Safety Injection
2. The crew completed E-0, REACTOR TRIP OR SAFETY INJECTION through step 14.

INITIATING CUES:

1. The US has directed you to stop one charging pump, isolate the CCPIT and establish charging flow using E-0, REACTOR TRIP OR SAFETY INJECTION starting at step 15.
2. Inform the US when charging flow and seal injection flow have been established.

Start Time _____

STEP 1 :	Obtain a copy of E-0, REACTOR TRIP OR SAFETY INJECTION.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Operator obtains a copy of E-0, REACTOR TRIP OR SAFETY INJECTION.	
<u>Cue</u>	Provide a copy of E-0, REACTOR TRIP OR SAFETY INJECTION.	
<u>Comment</u>		

STEP 2 :	15. RESET SI signal.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Operator depresses SI Reset pushbuttons.	Critical Step
<u>Comment</u>		

STEP 3 :	16. MONITOR shutdown boards continuously energized.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Operator addresses the procedure step.	
<u>Cue</u>	Provide the following cue, "The CRO will monitor the shutdown boards."	
<u>Comment</u>		

STEP 5 :	<p>17. ENSURE only one CCP RUNNING:</p> <p>a. CHECK offsite power supplying shutdown boards.</p> <p>b. STOP all BUT one CCP and PLACE in A-AUTO.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Operator places ONE Charging Pump in STOP.	Critical Step
<u>Comment</u>		

STEP 6 :	<p>18. CHECK RCS pressure STABLE or RISING.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Operator verifies RCS pressure stable or rising by observing installed instrumentation.	
<u>Comment</u>		
<u>Examiner Note:</u>		

STEP 7 :	<p>19. ISOLATE CCPIT:</p> <p>a. CLOSE CCPIT inlet valves FCV-63-39 and FCV-63-40.</p> <p>b. CLOSE CCPIT outlet valves FCV-63-25 and FCV-63-26.</p> <p>c. VERIFY CCPIT flow isolated:</p> <ul style="list-style-type: none"> FCV-63-39 and 40 CLOSED OR FCV-63-25 and 26 CLOSED. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	<p>Operator places CCPIT inlet valves HS-63-39A AND HS-63-40A</p> <p>OR</p> <p>Operator places CCPIT outlet valves HS -63-25A AND HS -63-26A</p> <p>To CLOSE.</p>	Critical Step
<u>Comment</u>		

STEP 8 :	<p>20. ESTABLISH charging flow:</p> <p>a. CLOSE seal water flow control valve FCV-62-89.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	<p>Operator closes FCV-62-89 by adjusting controller FIC-62-89 CCW to CLOSE (Maximum output.).</p>	Critical Step
<u>Comment</u>		

STEP 9 :	20. ESTABLISH charging flow: b. OPEN charging isolation valves FCV-62-90 and FCV-62-91.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator places charging isolation valves HS-62-90A and HS-62-91A to OPEN	Critical Step
<u>Comment</u>		

STEP 12 :	20. ESTABLISH charging flow: c. ENSURE normal charging isolation valve FCV-62-86 OPEN.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator places FCV-62-86 to OPEN. Operator observes when 1-HS - 62-86A is turned to the right OPEN position, green light remains lit on HS and operator transitions to the RNO.	
<u>Comment</u>		

STEP 13 :	20. ESTABLISH charging flow: RNO c. ENSURE alternate charging isolation valve FCV-62-85 OPEN.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator places 1-HS-62-85 Alternate Charging Isolation to OPEN.	Critical Step
<u>Comment</u>		

STEP 14 :	20. ESTABLISH charging flow: d. ESTABLISH desired charging flow USING seal water and charging flow control valves FCV-62-89 and FCV-62-93.	____ SAT ____ UNSAT
<u>Standard:</u>	Operator addresses the procedure step.	
<u>Comment</u>		
Terminating Cue:	Provide the following cue, “ Another operator will complete the remaining steps of this procedure. ”	STOP

Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3 following a spurious Safety Injection
2. The crew completed E-0, REACTOR TRIP OR SAFETY INJECTION through step 14.

INITIATING CUES:

1. The US has directed you to stop one charging pump, isolate the CCPIT and establish charging flow using E-0, REACTOR TRIP OR SAFETY INJECTION starting at step 15.
2. Inform the US when charging flow and seal injection flow have been established.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

SEQUOYAH NUCLEAR PLANT

**1305 NRC
SIMULATOR
JPM D**

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 324.
3. If IC 324 is not available, perform the following:
 - Reset to IC 7
 - Open reactor Trip Breakers
4. Place MODE 3 sign on Panel M-4
5. Set NR-45 to display one SRM and one IRM
6. An extra operator will be required to acknowledge alarms.
7. ACKNOWLEDGE ALARMS
8. FREEZE SIMULATOR.
9. PLACE SIMULATOR IN RUN
10. Booth operator standby to insert the SCN File 1305 JPM D.scn (from exams folder) when the examinee assumes the shift.

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
2. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

1-SO-68-2 Reactor Coolant Pumps
AOP- R.04 Reactor Coolant Pump Malfunctions

References:

	Reference	Title	Rev No.
1.	1-SO-68-2	Reactor Coolant Pumps	33
2.	AOP- R.04	Reactor Coolant Pump Malfunctions	27
3	1-AR-M5-B	CVCS Seal Water and RCP	39

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3

INITIATING CUES:

1. You are the OATC.
2. Respond to plant conditions.

<p>STEP 1 :</p>	<div data-bbox="378 163 1123 254" style="border: 2px solid black; padding: 5px; text-align: center;"> CVCS SEAL WATER AND RCP 1-XA-55-5B </div> <p style="text-align: center;">29 (E-1)</p> <div data-bbox="436 327 792 575" style="border: 1px solid black; padding: 10px; text-align: center; margin: 10px auto; width: fit-content;"> REAC COOL PMPS MOTOR STATOR TEMPERATURE HIGH </div>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>Standard:</u></p>	<p>Examinee acknowledges alarm and observes rise in RCP motor stator temperatures.</p>	
<p><u>Comment</u></p>		

STEP 2 :	STOP Loop 2 RCP	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-68-31A #2 RCP handswitch to STOP.	Critical Step
<u>Comment</u>		

<u>Examiner Note</u>	The following steps are from the Annunciator Response Procedure 1-AR-M5-B.	
NOTE RCP 1-4 is known to have high winding temperature (up to approximately 303°F when running with RCS temperature below 400°F. (EWR 10-COM-068-057)) However, alarms on RCP 1-4 should NOT be dismissed as "expected".		
STEP 3 :	Corrective Actions [1] DETERMINE which pump is in alarm by monitoring computer points. Pump 1: Point T0409A, 411A or 412A (A,B, & C ∅) Pump 2: Point T0429A, 431A or 432A (A,B, & C ∅) Pump 3: Point T0449A, 451A or 452A (A,B, & C ∅) Pump 4: Point T0469A, 471A or 472A (A,B, & C ∅)	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee determines the #2 RCP in alarm by observing the ICS display.	
<u>Comment</u>		

STEP 4 :	[2] CONTACT Engineering to obtain engineering assistance in determining the validity of the alarm.	____ SAT ____ UNSAT
<u>Standard:</u>	Engineering is contacted to obtain engineering assistance in determining the validity of the alarm.	
<u>Cue</u>	If asked, provide the following cue, “Time has been compressed, Engineering has been contacted and has validated the alarm.”	
<u>Comment</u>		

STEP 5 :	[3] MONITOR the following parameters for increasing trends: a. Motor Current b. Bearing Temperatures c. Pump/Motor Vibration d. Containment Air Temperatures	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee monitors or directs monitoring parameters by observing indications on installed instrumentation and determines indications normal.	
<u>Cue</u>	If asked, provide the following cue, “The AUO is monitoring RCP Vibration.”	
<u>Comment</u>		

STEP 6 :	[4] ENSURE ERCW aligned to pump cooler.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Examinee verifies ERCW aligned to pump cooler by observing red light above 1-HS-67-102 on 0-M-27A ON.	
<u>Comment</u>		

STEP 7 :	[5] VERIFY ERCW system temperature and pressure normal.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Examinee verifies ERCW system temperature and pressure normal by observing indications 0-M-27A.	
<u>Comment</u>		

STEP 8 :	[6] VERIFY lower compartment air temperature normal.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Examinee verifies lower compartment air temperature normal by observing indications on ICS and other installed plant instrumentation.	
<u>Comment</u>		

STEP 9 :	[7] REFER TO 1-SO-68-2 for RCP operating limits.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee refers to 1-SO-68-2 Appendix D for the operating limits.	
<u>Comment</u>		

STEP 10 :	STOP Loop 2 RCP	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-68-31A #2 RCP handswitch to STOP.	Critical Step
<u>Comment</u>		

STEP 11 :	[8] IF Ops/Engineering determines alarm is valid, THEN PERFORM the following: [a] CHECK pump motor amps. (normal 415 amps with 608 amps maximum.) [b] IF RCP motor amps approach 608 amps, THEN GO TO AOP-R.04, <i>Reactor Coolant Pump Malfunctions</i> .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee verifies pump amps normal by observing EI-68-8 less than 400 amps.	
<u>Comment</u>		


STEP 12 :	[9] IF Ops/Engineering determines alarm is valid and pump motor stator temperature approaches 311°F (329°F for RCS temperature less than 540°F), THEN GO TO AOP-R.04, <i>Reactor Coolant Pump Malfunctions</i> .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee observes the motor winding temperature is greater than 311°F using the ICS and goes to AOP-R.04.	
<u>Cue</u>	Respond as Engineering “Alarm is valid.”	
<u>Comment</u>		


CAUTION 1		RCP should NOT be tripped when reactor power is greater than 5% (FR-S.1) or when RCP operation is required by FR-C.1 (Inadequate Core Cooling) or FR-C.2 (Degraded Core Cooling).			
CAUTION 2		Exceeding any of the following limits requires tripping the affected RCP, except as described in Caution 1: <ul style="list-style-type: none">• RCP #1 Seal ΔP less than 220 psid• RCP #1 Seal Temperature greater than 230°F• RCP Lower Bearing Temperature greater than 230°F• RCP Upper Motor Bearing Temperature greater than 200°F• RCP Lower Motor Bearing Temperature greater than 200°F• RCP Motor Voltage less than 5940V or greater than 7260V• RCP Motor Amps greater than 608 amps• RCP Vibration greater than 20 mils on any axis (x and/or y) [C.3]			
NOTE:		RCP trip criteria is also located in Appendix B.			
STEP 13 :	1. DIAGNOSE the failure: <table border="1"><tr><td>Motor Stator Temperature High on ANY RCP</td><td>2.6</td><td>24</td></tr></table>	Motor Stator Temperature High on ANY RCP	2.6	24	<div>____ SAT</div> <div>____ UNSAT</div>
Motor Stator Temperature High on ANY RCP	2.6	24			
<u>Standard:</u>	Examinee goes to AOP-R.04 section 2.6				
<u>Comment</u>					


CAUTION: Operating the RCP with excess winding temperature will reduce the expected life of the motor insulation.


NOTE: RCP motor winding temperature limits are as follows:

- 329°F if RCS temperature is less than 540°F.
- 311°F if RCS temperature is greater than or equal to 540°F.

STEP 14 :	<p>Alternate Path</p> <p>1. MONITOR RCP Motor Stator temperature less than applicable limit by monitoring the following computer points:</p> <ul style="list-style-type: none"> • Pump 1: T0409A, 411A or 412A • Pump 2: T0429A, 431A or 432A • Pump 3: T0449A, 451A or 452A • Pump 4: T0469A, 471A or 472A <p>a. IF RCP Motor Stator temperature reaches applicable limit AND indication is verified valid, THEN PERFORM the following:</p> <p>1) IF reactor power less than 20%, THEN GO TO Section 2.1, ANY RCP Tripped or RCP Shutdown Required. [C.1]</p> 	<p>____ SAT</p> <p>____ UNSAT</p>
<u>Standard:</u>	Examinee determines the motor winding temperature is greater than 311°F by observing the ICS and goes to the RNO column and ultimately to Section 2.1.	
<u>Comment</u>		

CAUTION: A rapid drop in level and steam flow on the affected loop S/G may occur when RCP is stopped.			
STEP 15 :	1. CHECK unit in Mode 1 or 2.	STOP affected RCP(s). Time: _____ GO TO Caution prior to Step 3. 	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee determines the Unit is in MODE 3 and proceeds to RNO		
<u>Comment</u>			

CAUTION: If #1 seal leakoff flow is HIGH on any RCP, Step 3 requires closing seal return valve <u>within 5 minutes</u> after stopping affected RCP(s). Step 3 should be continued after E-0 immediate actions. [C.2]			
STEP 16 :	1. CHECK unit in Mode 1 or 2.	STOP affected RCP(s). Time: _____ GO TO Caution prior to Step 3. 	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places handswitch 1-HS-68-31A #2 RCP to STOP.		Critical Step
<u>Comment</u>			

CAUTION: If RCP seal leakoff is HIGH , seal return valve must be closed <u>within 5 minutes</u> after stopping the affected RCP(s). [C.2]		
STEP 17 :	3. MONITOR #1 seal leakoff on affected RCP: a. CHECK for any of the following: • RCP Seal Leakoff greater than 8 gpm OR • RCP Seal leakoff greater than 6 gpm AND Lower bearing or seal temperature rising uncontrolled.	a. GO TO Step 4. 
		____ SAT ____ UNSAT
<u>Standard:</u>	Examinee determines that seal leakoff within normal values and continues to step 4.	
<u>Comment</u>		

STEP 18 :	4. PULL TO DEFEAT affected loop ΔT and T-avg: • XS-68-2D (ΔT) • XS-68-2M (T-avg)	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places XS-68-2D (ΔT) and XS-68-2M (T-avg) in PULL TO DEFEAT	Critical Step
<u>Comment</u>		

STEP 19 :	5. CHECK RCPs 1 and 2 RUNNING.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee identifies #2 RCP as effected pump and proceeds to RNO column.	
<u>Comment</u>		

STEP 20 :	CLOSE affected loop's pressurizer spray valve.	____ SAT ____ UNSAT
<u>Standard:</u>	Operator closes the Loop 2 Pressurizer Spray Valve by placing controller 1-PIC-68-340B to CLOSE (minimum output).	Critical Step
<u>Comment</u>		

Terminating Cue:	Provide the following cue "Another operator will perform the remaining steps of this procedure."	STOP
-------------------------	---------------------------------------------------------------------------------------------------------	-------------

Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3

INITIATING CUES:

1. You are the OATC.
2. Respond to plant conditions.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

SEQUOYAH NUCLEAR PLANT

**1305 NRC
SIMULATOR
JPM E**

**RO/SRO
JOB PERFORMANCE MEASURE**

Task: Operate the Motor Driven AFW pump.

Task #: 0610050101

Task Standard: The examinee will align Essential Raw Cooling Water (Service Water) to the motor driven Auxiliary Feed Pumps (AFW) suction using EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW

Alternate Path: YES: _____ NO: X

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings: EPE E05 EA 1.1 (4.1/4.0)

Method of Testing:

Simulated Performance: _____ **Actual Performance:** X

Evaluation Method:

Simulator X **In-Plant** _____ **Classroom** _____

Main Control Room _____ **Mock-up** _____

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: SAT: _____ UNSAT: _____

Validation Time: 5 min **Total Time:** _____

Performance Time: **Start Time:** _____ **Finish Time:** _____

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 331
3. If IC 331 is not available perform the following:
 - Reset to IC 17
 - IMF ED01 f:1
 - IMF FW23C f:40
 - IMF CN05 f:100
 - IMF FW07C f:1
 - IOR ZDIHS3116AA f:0
 - IOR ZLOHS3116AA_GREEN1 f:1
 - IOR ZLOHS3116AA_GREEN2 f:1
 - IOR ZDIHS3126AA f:0
 - IOR ZLOHS3126AA_GREEN1 f:1
 - IOR ZLOHS3126AA_GREEN2 f:1
 - {global95[4811]} DOR ZDIHS3116AA
 - {global95[4811]} DOR ZLOHS3116AA_GREEN1
 - {global95[4811]} DOR ZLOHS3116AA_GREEN2
 - {global95[4822]} DOR ZDIHS3126AA
 - {global95[4822]} DOR ZLOHS3126AA_GREEN1
 - {global95[4822]} DOR ZLOHS3126AA_GREEN2
4. PLACE SIMULATOR IN RUN
5. An extra operator will be required to acknowledge alarms.
6. ACKNOWLEDGE ALARMS
7. FREEZE SIMULATOR.
8. Save as a temporary IC, if repeat runs of JPM will be desired.

9. Place pink tags on the following:
 - HS-3-148A AFP 1B-B LCV to S/G #3.
 - HS-3-172 S/G #3 Turbine AFP LCV.
10. PLACE SIMULATOR IN RUN

Tools/Equipment/Procedures Needed:

EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW

References:

	Reference	Title	Rev No.
1.	EA-3-10	ESTABLISHING MOTOR DRIVEN AFW FLOW	2
2.			

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3.
2. A Loss of offsite power is in progress.
3. #3 Steam Generator in faulted.
4. The Turbine Driven AFW pump has tripped.
5. Unit 1 Condensate Storage tank is 5% and lowering rapidly.

INITIATING CUES:

1. The SRO has directed you to align ERCW to the motor Driven AFW pumps using EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW	
<u>Cue:</u>	Provide a copy of EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW.	
<u>Comment</u>		

STEP 2 :	1. SELECT applicable unit: • Unit 1 _____ • Unit 2 _____.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee selects Unit 1 as the affected unit.	
<u>Cue:</u>	When alarm 2C D6 CONDENSATE STORAGE TANK B LEVEL LO LO annunciates provide the following cue, “Another operator will address 2C D6 CONDENSATE STORAGE TANK B LEVEL LO LO.”	
<u>Comment</u>		

STEP 3 :	2. IF starting MD AFW pump locally at 6900 V shutdown boards, THEN GO TO applicable section:	___ SAT									
	<table border="1" data-bbox="448 273 1273 411"> <thead> <tr> <th>UNIT</th><th>SECTION</th><th>√</th></tr> </thead> <tbody> <tr> <td>1</td><td>4.2</td><td><input type="checkbox"/></td></tr> <tr> <td>2</td><td>4.3</td><td><input type="checkbox"/></td></tr> </tbody> </table>	UNIT	SECTION	√	1	4.2	<input type="checkbox"/>	2	4.3	<input type="checkbox"/>	___ UNSAT
UNIT	SECTION	√									
1	4.2	<input type="checkbox"/>									
2	4.3	<input type="checkbox"/>									
<u>Standard:</u>	The examinee addresses the step as N/A.										
<u>Comment</u>											

STEP 4 :	3. IF MD AFW LCV valve or controller failure has occurred, THEN GO TO applicable section:	___ SAT									
	<table border="1" data-bbox="420 865 1276 1005"> <thead> <tr> <th>UNIT</th><th>SECTION</th><th>√</th></tr> </thead> <tbody> <tr> <td>1</td><td>4.4</td><td><input type="checkbox"/></td></tr> <tr> <td>2</td><td>4.5</td><td><input type="checkbox"/></td></tr> </tbody> </table>	UNIT	SECTION	√	1	4.4	<input type="checkbox"/>	2	4.5	<input type="checkbox"/>	___ UNSAT
UNIT	SECTION	√									
1	4.4	<input type="checkbox"/>									
2	4.5	<input type="checkbox"/>									
<u>Standard:</u>	The examinee addresses the step as N/A.										
<u>Comment</u>											

STEP 5 :	4. IF verifying MD AFW valve alignment, THEN GO TO applicable section:	____ SAT ____ UNSAT									
	<table border="1"> <thead> <tr> <th>UNIT</th> <th>SECTION</th> <th>√</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4.6</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2</td> <td>4.7</td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	UNIT	SECTION	√	1	4.6	<input type="checkbox"/>	2	4.7	<input type="checkbox"/>	
UNIT	SECTION	√									
1	4.6	<input type="checkbox"/>									
2	4.7	<input type="checkbox"/>									
<u>Standard:</u>	The examinee addresses the step as N/A.										
<u>Comment</u>											

STEP 6 :	5. IF isolating MD AFW pump recirculation line, THEN GO TO applicable section:	____ SAT ____ UNSAT									
	<table border="1"> <thead> <tr> <th>UNIT</th> <th>SECTION</th> <th>√</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4.8</td> <td><input type="checkbox"/></td> </tr> <tr> <td>2</td> <td>4.9</td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	UNIT	SECTION	√	1	4.8	<input type="checkbox"/>	2	4.9	<input type="checkbox"/>	
UNIT	SECTION	√									
1	4.8	<input type="checkbox"/>									
2	4.9	<input type="checkbox"/>									
<u>Standard:</u>	The examinee addresses the step as N/A.										
<u>Comment</u>											

STEP 7 :	6. IF aligning MD AFW pump suction to ERCW, THEN GO TO applicable section:	____ SAT ____ UNSAT									
	<table border="1"> <thead> <tr> <th>UNIT</th><th>SECTION</th><th>✓</th></tr> </thead> <tbody> <tr> <td>1</td><td>4.10</td><td><input type="checkbox"/></td></tr> <tr> <td>2</td><td>4.11</td><td><input type="checkbox"/></td></tr> </tbody> </table>	UNIT	SECTION	✓	1	4.10	<input type="checkbox"/>	2	4.11	<input type="checkbox"/>	
UNIT	SECTION	✓									
1	4.10	<input type="checkbox"/>									
2	4.11	<input type="checkbox"/>									
<u>Standard:</u>	The examinee selects section 4.10 as the applicable section.										
<u>Comment</u>											

STEP 8 :	1. IF aligning MD AFW Pump 1A-A suction to ERCW, THEN PERFORM the following:	____ SAT ____ UNSAT									
	a. ENSURE the following valves are OPEN: <table border="1"> <thead> <tr> <th>VALVE</th><th>DESCRIPTION</th><th>OPEN ✓</th></tr> </thead> <tbody> <tr> <td>1-FCV-3-116A</td><td>ERCW supply to MD AFW Pump 1A-A suction</td><td><input type="checkbox"/></td></tr> <tr> <td>1-FCV-3-116B</td><td>ERCW supply to MD AFW Pump 1B-B suction</td><td><input type="checkbox"/></td></tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	1-FCV-3-116A	ERCW supply to MD AFW Pump 1A-A suction	<input type="checkbox"/>	1-FCV-3-116B	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>	
VALVE	DESCRIPTION	OPEN ✓									
1-FCV-3-116A	ERCW supply to MD AFW Pump 1A-A suction	<input type="checkbox"/>									
1-FCV-3-116B	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>									
<u>Standard:</u>	The examinee places HS-3-116-A/A ERCW Header A AFW Supply to OPEN.	Critical Step									
<u>Comment</u>											

STEP 9 :	b. CLOSE ERCW tell tale drain valve [1-3-807] . [Aux Bldg, elev 690, by MD AFW pump] <input type="checkbox"/>	____ SAT ____ UNSAT
<u>Standard:</u>	The examinee addresses the procedure step.	
<u>Cue</u>	Provide the following cue, " AUO Acknowledges close ERCW tell tale drain valve 1-3-807. "	
<u>Comment</u>		

STEP 10 :	<p>2. IF aligning MD AFW Pump 1B-B suction to ERCW, THEN PERFORM the following:</p> <p>a. ENSURE the following valves are OPEN:</p> <table border="1"> <thead> <tr> <th>VALVE</th><th>DESCRIPTION</th><th>OPEN ✓</th></tr> </thead> <tbody> <tr> <td>1-FCV-3-126A</td><td>ERCW supply to MD AFW Pump 1B-B suction</td><td><input type="checkbox"/></td></tr> <tr> <td>1-FCV-3-126B</td><td>ERCW supply to MD AFW Pump 1B-B suction</td><td><input type="checkbox"/></td></tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	1-FCV-3-126A	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>	1-FCV-3-126B	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>	____ SAT ____ UNSAT
VALVE	DESCRIPTION	OPEN ✓									
1-FCV-3-126A	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>									
1-FCV-3-126B	ERCW supply to MD AFW Pump 1B-B suction	<input type="checkbox"/>									
<u>Standard:</u>	The examinee places HS-3-126-A/A ERCW Header B AFW Supply to OPEN.	Critical Step									
<u>Comment</u>											

STEP 9 :	b. CLOSE ERCW tell tale drain valve [1-3-808] . [Aux Bldg, elev 690, by MD AFW pump] <input type="checkbox"/>	____ SAT ____ UNSAT
<u>Standard:</u>	The examinee addresses the procedure step.	
<u>Cue</u>	Provide the following cue, " AUO Acknowledges close ERCW tell tale drain valve 1-3-808. "	
<u>Comment</u>		

Terminating Cue:	Provide the following cue, "Another operator will complete the remaining steps of this procedure."	STOP
-------------------------	-----------------------------------------------------------------------------------------------------------	-------------

Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 3.
2. A Loss of offsite power is in progress.
3. #3 Steam Generator in faulted.
4. The Turbine Driven AFW pump has tripped.
5. Unit 1 Condensate Storage tank is 5% and lowering rapidly.

INITIATING CUES:

1. The SRO has directed you to align ERCW to the motor Driven AFW pumps using EA-3-10 ESTABLISHING MOTOR DRIVEN AFW FLOW.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

**SEQUOYAH NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**1305 NRC
SIMULATOR
JPM F**

**RO/SRO
JOB PERFORMANCE MEASURE**

Task: Start Up A-A Hydrogen Recombiner

Task #: 0881010401

Task Standard: "A-A" Hydrogen Recombiner is placed in service using EA-268-1, Placing Hydrogen Recombiner in Service.

Alternate Path: YES: _____ NO: X

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings: 028 A4.01 (4.0/4.0)

Method of Testing:

Simulated Performance: _____ **Actual Performance:** X

Evaluation Method:

Simulator X **In-Plant** _____ **Classroom** _____

Main Control Room _____ **Mock-up** _____

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: SAT: _____ UNSAT: _____

Validation Time: 5 min **Total Time:** _____

Performance Time: **Start Time:** _____ **Finish Time:** _____

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 312, (Post LOCA.)
3. If IC 312 is not available, perform the following:
 - a) Reset to IC 24.
 - b) ENSURE the controllers for both Hydrogen Recombiners are set to Zero (0) after simulator initialization.
 - c) Insert malfunctions to establish 5 psig on Containment Pressure Indicators:
 - IMF CH01A f:37.5
 - IMF CH01B f:37.5
 - IMF CH01C f:37.5
 - IMF CH01D f:37.5
 - d) Put Containment Hydrogen Analyzer Fans A and B in service by placing 1-HS- 43-200A and -210A in ANALYZE.
4. ENSURE white lights (1-XI-43-200 and 210 located on M-10) are NOT LIT indicating normal flow through the Hydrogen Analyzers.
5. Ensure Train A Recombiner Power Adjust potentiometer set at 100
6. The reference power value used in JPM step 9 (46.98 kw) must be verified correct prior to JPM performance.
7. An extra operator will be required to acknowledge alarms.
8. ACKNOWLEDGE ALARMS
9. FREEZE SIMULATOR.
10. Provide a copy of EA-268-1, Placing Hydrogen Recombiner in Service
11. Save as a temporary IC, if repeat runs of JPM will be desired.
12. PLACE SIMULATOR IN RUN
13. After JPM is complete, delete the temporary IC, if used. Delete the contents of the recycle bin, if a temporary IC has been deleted.

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
2. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

1. EA-268-1, Placing Hydrogen Recombiner in Service
2. Calculator

References:

	Reference	Title	Rev No.
1.	EA-268-1	Placing Hydrogen Recombiner in Service	4
2.			

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:


1. Unit 1 has had an event.
2. Containment pressure indicators 1-PDI-30-45, 44, 43 and 42 are indicating 5 psig.
3. The Hydrogen Analyzers have been in service for > 30 minutes.
4. Containment Hydrogen concentration is 2.2%

INITIATING CUES:

1. The US has directed you to place "A-A" Hydrogen Recombiner in service using EA-268-1, Placing Hydrogen Recombiner in Service.
2. Inform the US when complete.

Start Time _____

STEP 1 :	Obtain a copy of EA-268-1, Placing Hydrogen Recombiner in Service.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Operator obtains EA-268-1, Placing Hydrogen Recombiner in Service.	
<u>Cue</u>	Provide a copy of EA-268-1, Placing Hydrogen Recombiner in Service.	
<u>Comment</u>		

STEP 2 :	4.1 Section Applicability 1. IF hydrogen recombinder to be placed in service, THEN GO TO Section 4.2. 	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Operator determines that section 4.2 is the appropriate section.	
<u>Comment</u>		

STEP 3 :	<p>1. SELECT applicable unit:</p> <ul style="list-style-type: none"> Unit 1 _____ Unit 2 _____. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Operator determines that Unit 1 is the appropriate unit.	
<u>Comment</u>		

STEP 4 :	<p>2. SELECT recombiner to be placed in service:</p> <ul style="list-style-type: none"> Train A _____ Train B _____. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Operator determines that the A Train Recombiner will be started from the initiating cue.	
<u>Comment</u>		

STEP 5 :	<p>3. RECORD containment pressure from one of the following instruments: [M-6]</p> <table border="1"> <thead> <tr> <th>INSTRUMENT</th><th>PAM</th><th>PRESSURE</th><th>√</th></tr> </thead> <tbody> <tr> <td>PDI-30-45</td><td>YES</td><td></td><td><input type="checkbox"/></td></tr> <tr> <td>PDI-30-44</td><td>YES</td><td></td><td><input type="checkbox"/></td></tr> <tr> <td>PDI-30-43</td><td>NO</td><td></td><td><input type="checkbox"/></td></tr> <tr> <td>PDI-30-42</td><td>NO</td><td></td><td><input type="checkbox"/></td></tr> </tbody> </table>	INSTRUMENT	PAM	PRESSURE	√	PDI-30-45	YES		<input type="checkbox"/>	PDI-30-44	YES		<input type="checkbox"/>	PDI-30-43	NO		<input type="checkbox"/>	PDI-30-42	NO		<input type="checkbox"/>	<p>___ SAT</p> <p>___ UNSAT</p>
INSTRUMENT	PAM	PRESSURE	√																			
PDI-30-45	YES		<input type="checkbox"/>																			
PDI-30-44	YES		<input type="checkbox"/>																			
PDI-30-43	NO		<input type="checkbox"/>																			
PDI-30-42	NO		<input type="checkbox"/>																			
<u>Standard:</u>	Operator records Containment press from at least one of the PAM instruments.																					
<u>Comment</u>																						

STEP 6 :	4. IF LOSS OF OFFSITE POWER has occurred, THEN PERFORM the following:	___ SAT ___ UNSAT
<u>Standard:</u>	Operator addresses the step as N/A	
<u>Comment</u>		

STEP 7 :	5. CHECK POWER AVAILABLE light LIT [M-10].	___ SAT ___ UNSAT
<u>Standard:</u>	Operator verifies "PWR AVAILABLE" white light is ON for "A-A" Recombiner on M-10.	
<u>Comment</u>		

STEP 8 :	6. ENSURE POWER ADJUST potentiometer set at 000:	___ SAT ___ UNSAT												
	<table border="1"> <thead> <tr> <th>TRAIN</th> <th>POTENTIOMETER</th> <th>POSITION</th> <th>✓</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>XS-83-5003</td> <td>000</td> <td><input type="checkbox"/></td> </tr> <tr> <td>B</td> <td>XS-83-5004</td> <td>000</td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	TRAIN	POTENTIOMETER	POSITION	✓	A	XS-83-5003	000	<input type="checkbox"/>	B	XS-83-5004	000	<input type="checkbox"/>	
TRAIN	POTENTIOMETER	POSITION	✓											
A	XS-83-5003	000	<input type="checkbox"/>											
B	XS-83-5004	000	<input type="checkbox"/>											
<u>Standard:</u>	Operator places "A-A" Hydrogen power adjust potentiometer CCW to 000. Operator addresses Train B as N/A (not critical).	Critical Step												
<u>Comment</u>														

STEP 9 :	7. PLACE POWER OUT SWITCH in "up" position (on) and CHECK red light on switch plate LIT.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator places "A-A" Recombiner "PWR OUT SW" in 'UP' (ON) position.	Critical Step
<u>Comment</u>		

STEP 10 :	8. DETERMINE Pressure Factor USING Appendix A, Ice Condenser Containment's Recombiner Power Correction Factor vs. Containment Pressure, and RECORD below: Pressure Factor _____.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator determines the correction factor (Pressure Factor) to be ~ 1.41 (1.4 – 1.45), by using the 5 psig Containment Pressure line and intersection on curve.	Critical Step
<u>Comment</u>		

STEP 11 :	9. RECORD reference power from Hydrogen Recombiner Data Plate (Ref. Power): [M-10] Reference Power _____ KW.	___ SAT ___ UNSAT
<u>Standard:</u>	Operator enters the reference power obtained from the Reference Power Data Plate or from Cue. (46.98 kW)	
<u>Cue</u>	Provide the following cue, " Reference power is 46.98 kW. "	
<u>Comment</u>		

STEP 12 :	<p>10. CALCULATE required hydrogen recombiner power setting:</p> <p>a. CALCULATE power setting in KW:</p> $\frac{\text{Pressure Factor}}{\text{(4.2. 8.)}} \times \frac{\text{Reference Power}}{\text{(4.2. 9.)}} = \frac{\text{Setting}}{\text{KW.}}$	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	<p>Operator calculates the hydrogen recombiner power setting by performing the following calculation:</p> <p>Pressure Factor X Reference Power= Setting KW</p> <p>1.41 (1.4 to 1.45%) X 46.98 KW = 66.24 KW</p> <p>(Acceptable Range 65.77 to 68.12 KW)</p>	Critical Step
<u>Comment</u>		

STEP 13 :	<p>10. CALCULATE required hydrogen recombiner power setting:</p> <p>b. RECORD above calculated power setting in the 25 Minute Table, KW Reading column in Step 11.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Operator records power setting, 66.24KW (65.77 to 68.12) in the Train A 25 Minute Table, KW reading column, and checks the box.	
<u>Comment</u>		

STEP 14 :	11. ADJUST selected POWER ADJUST potentiometer to obtain KW reading, as indicated on POWER OUT meter, according to the time schedule in the following tables:	____ SAT																								
	<table border="1" data-bbox="406 273 1266 462"> <thead> <tr> <th colspan="6">TIME ZERO TABLE</th> </tr> <tr> <th>TIME</th><th>TRAIN</th><th>POTENTIOMETER</th><th>POWER OUT METER</th><th>KW READING</th><th>✓</th> </tr> </thead> <tbody> <tr> <td>00:00</td><td>A</td><td>XS-83-5003</td><td>XI-83-5003</td><td>5</td><td><input type="checkbox"/></td> </tr> <tr> <td>00:00</td><td>B</td><td>XS-83-5004</td><td>XI-83-5004</td><td>5</td><td><input type="checkbox"/></td> </tr> </tbody> </table>	TIME ZERO TABLE						TIME	TRAIN	POTENTIOMETER	POWER OUT METER	KW READING	✓	00:00	A	XS-83-5003	XI-83-5003	5	<input type="checkbox"/>	00:00	B	XS-83-5004	XI-83-5004	5	<input type="checkbox"/>	____ UNSAT
TIME ZERO TABLE																										
TIME	TRAIN	POTENTIOMETER	POWER OUT METER	KW READING	✓																					
00:00	A	XS-83-5003	XI-83-5003	5	<input type="checkbox"/>																					
00:00	B	XS-83-5004	XI-83-5004	5	<input type="checkbox"/>																					
<u>Standard:</u>	Operator places XS-83-5003 Power Adjust potentiometer CW until 5 ± 0.5 KW is obtained.	Critical Step																								
<u>Comment</u>																										
Terminating Cue:	Provide the following cue, “ Another operator will complete the remaining steps of this procedure. ”	STOP																								

Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 has had an event.
2. Containment pressure indicators 1-PDI-30-45, 44, 43 and 42 are indicating 5 psig.
3. The Hydrogen Analyzers have been in service for > 30 minutes.
4. Containment Hydrogen concentration is 2.2%

INITIATING CUES:

1. The US has directed you to place "A-A" Hydrogen Recombiner in service using EA-268-1, Placing Hydrogen Recombiner in Service.
2. Inform the US when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

**SEQUOYAH NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**1305 NRC
SIMULATOR
JPM G**

RO/SRO
JOB PERFORMANCE MEASURE

Task: Transfer 1A-A 6.9 KV SD Bd from Alternate to Normal Supply

Task #: 0620520201

Task Standard: 1A-A 6.9 kv Shutdown Board is energized by manually starting the 1A-A EDG.

Alternate Path: YES: X NO:

Time Critical Task: YES: NO: X

K/A Reference/Ratings: EPE E02 EA1.1 (4.0/3.9)

Method of Testing:

Simulated Performance: **Actual Performance:** X

Evaluation Method:

Simulator X **In-Plant** **Classroom**

Main Control Room **Mock-up**

Performer:
Trainee Name

Evaluator: /
Name / Signature DATE

Performance Rating: SAT: UNSAT:

Validation Time: 7 min **Total Time:**

Performance Time: **Start Time:** **Finish Time:**

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 313.
3. If IC 313 is not available perform the following.
 - a) Reset to IC 14
 - b) Transfer 1A-A 6.9 Kv Shutdown Board to the alternate feeder.
 - c) Insert IMF EG08A – D/G 1A-A Fails to Auto Start.
 - d) Insert Override ZDIHS5744A – Trip 6.9 KV SD Bd 1A-A Alt. Fdr. Bkr. 1716.
4. An extra operator will be required to acknowledge alarms.
5. ACKNOWLEDGE ALARMS
6. FREEZE SIMULATOR.
7. Provide a copy of 0-SO-202-4, 6900V Shutdown Boards completed through 8.1.5 step 2.
8. PLACE SIMULATOR IN RUN

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
2. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

0-SO-202-4, 6900V Shutdown Boards

References:

	Reference	Title	Rev No.
1.	0-SO-202-4	6900V Shutdown Boards	35

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Units 1 and 2 are in MODE 1.
2. Relay testing has been completed on normal feeder to 1A-A 6.9 Kv Shutdown Board.
3. 1B-B, 2A-A, and 2B-B 6.9kV Shutdown Boards are aligned to Normal Power supply.

INITIATING CUES:

1. You have been directed to transfer 1A-A 6.9kV Shutdown Board to Normal Feeder at 1-M-1 using 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.5, starting at step 3.
2. 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.1 has been completed.
3. Another operator has been assigned and will provide concurrent verification.
4. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of 0-SO-202-4 6900V Shutdown Boards, Section 8.1.5	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of 0-SO-202-4 6900V Shutdown Boards, Section 8.1.5	
<u>Cue</u>	Provide a marked up copy of 0-SO-202-4 6900V Shutdown Boards, Section 8.1.5 completed through step 2	
<u>Comment</u>		

<u>Procedure Note:</u>	NOTE Steps [3] through [9] are performed from the Unit 1 main control board panel 1-M-1 and are to be reviewed immediately prior to performance.	
STEP 2 :	[3] ENSURE [1-XS-57-39], 6.9kV Shutdown Board 1A-A voltmeter selector switch is in Sd Bd. 1A position.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee observes 1-XS-57-39 6.9kV Shutdown Board 1A-A voltmeter selector switch in the SDBD 1A position.	
<u>Comment</u>		

<u>Examiner Note</u>	Start of Critical Step(s)	
STEP 3 :	[4] PLACE [1-HS-57-44A], control switch for [1718], in CLOSE position, AND HOLD.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-57-44A control switch for [1718] to CLOSE.	Critical Step
<u>Comment</u>		
<u>Cue</u>	Respond to the examinee when asked to provide a concurrent verification, "Operator concurs."	

STEP 4 :	[5] PLACE [1-HS-57-41A], control switch for [1716] in TRIP position MOMENTARILY.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-57-41A control switch for [1716] to TRIP.	Critical Step
<u>Comment</u>		
<u>Cue</u>	Respond to the examinee when asked to provide a concurrent verification, "Operator concurs."	

NOTE:	<div>NOTE</div> <div>Steps 8.1.5[6] & 8.1.5[7] may be N/A'd if breaker does not close.</div>	
STEP 5 :	[6] VERIFY breaker [1716] OPEN and breaker [1718] CLOSED.	<div>___ SAT</div> <div>___ UNSAT</div>
<u>Standard:</u>	Examinee observes ACB 1718 fails to close resulting in a loss of 6.9 KV SD Bd. 1A-A.	
<u>Comment</u>		
<u>Examiner Note</u>	ACB 1718 fails to close resulting in a loss of 6.9 KV SD Bd. 1A-A followed by failure of D/G's to auto start and re-energize SD Bd. 1A-A.	

STEP 6 :	[7] VERIFY [1-EI-57-39], 1A-A 6.9kV Shutdown Board Bus voltmeter INDICATES normal voltage (6560-7260).	<div>___ SAT</div> <div>___ UNSAT</div>
<u>Standard:</u>	Examinee observes no bus voltage indicated on 6.9 kv SD Bus 1A-A voltmeter 1-EI-57-39.	
<u>Comment</u>		

STEP 7 :	[8] RELEASE [1-HS-57-44A] to MID position.	<div>___ SAT</div> <div>___ UNSAT</div>
<u>Standard:</u>	Examinee releases 1-HS-57-44A control switch for [1718] to MID position	
<u>Comment</u>		

<u>Examiner Note</u>	End of Critical Step(s)	
STEP 8 :	[9] IF transfer does <u>NOT</u> occur, THEN PERFORM the following: [a] ENSURE all four diesel Generators have started	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee observes diesel generators did not start, recognizes DG RUN green light ON. [M-1]	
<u>Comment</u>		

STEP 9 :	Alternate Path [9] IF transfer does <u>NOT</u> occur, THEN PERFORM the following: [9.1] ENSURE all four diesel Generators have started.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places 1-HS-82-15, D/G EMERG START 1A-A, 2A-A, 1B-B, 1B-B to EMERG START position OR Examinee places 0-HS-82-16A, DG 1A-A Emergency Start, to EMERG START position.	Critical Step
<u>Comment</u>		

STEP 10 :	<p>[9] IF transfer does <u>NOT</u> occur, THEN</p> <p>PERFORM the following:</p> <p>[9.2] ENSURE DG emergency breaker closes on the blacked out shutdown board.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee verifies DG emergency breaker 1912 closed, by observing red light above 1-HS-57-46A ON [M-26] or Breaker 1912 indicating light ON [M-1]	
<u>Comment</u>		
<u>Cue</u>	Respond to the examinee when asked to provide a concurrent verification, "Operator concurs."	
Terminating Cue:	Provide the following cue "Another operator will perform the remaining steps of this procedure."	STOP

Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Units 1 and 2 are in MODE 1.
2. Relay testing has been completed on normal feeder to 1A-A 6.9 Kv Shutdown Board.
3. 1B-B, 2A-A, and 2B-B 6.9kV Shutdown Boards are aligned to Normal Power supply.

INITIATING CUE:

1. You have been directed to transfer 1A-A 6.9kV Shutdown Board to Normal Feeder at 1-M-1 using 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.5, starting at step 3.
2. 0-SO-202-4, 6900V Shutdown Boards, Section 8.1.1 has been completed.
3. Another operator has been assigned and will provide concurrent verification.
4. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

SEQUOYAH NUCLEAR PLANT

**1305 NRC
SIMULATOR
JPM H**

RO/SRO
JOB PERFORMANCE MEASURE

Task: Shut down the Containment Purge System.

Task #: 0290030101

Task Standard: The examinee will shut down the Containment Purge System using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.

Alternate Path: YES: _____ NO: X

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings: 029 A1.03 (3.0 / 3.3)

Method of Testing:

Simulated Performance: _____ **Actual Performance:** X

Evaluation Method:

Simulator X **In-Plant** _____ **Classroom** _____

Main Control Room _____ **Mock-up** _____

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: SAT: _____ UNSAT: _____

Validation Time: 5 min **Total Time:** _____

Performance Time: **Start Time:** _____ **Finish Time:** _____

COMMENTS

SPECIAL INSTRUCTIONS:

1. Ensure Simulator Operator Checklist is complete
2. Reset to IC 329
 - If IC 329 is not available perform the following
 - Reset to IC 182.
 - Ensure Lower Containment Purge “A” Train is in service using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.
3. Place MODE 5 sign on panel M-4
4. PLACE SIMULATOR IN RUN
5. An extra operator will be required to acknowledge alarms.
6. ACKNOWLEDGE ALARMS
7. FREEZE SIMULATOR.
8. Save as a temporary IC, if repeat runs of JPM will be desired.
9. PLACE SIMULATOR IN RUN
10. After JPM is complete, delete the temporary IC, if used. Delete the contents of the recycle bin, If a temporary IC has been deleted.

Tools/Equipment/Procedures Needed:

0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.

References:

	Reference	Title	Rev No.
1.	0-SO-30-3	CONTAINMENT PURGE SYSTEM OPERATION.	46
2.			

DIRECTIONS TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

INITIAL CONDITIONS:

1. Unit 1 is in MODE 5.
2. Lower Containment Purge "A" Train is in service.

INITIATING CUES:

1. You have been directed to shutdown the Lower Containment Purge System using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION section 7.3.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION.	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Examinee obtains a copy of 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION section 7.1.	
<u>Cue:</u>	Provide a marked up copy of 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION section 7.1..	
<u>Comment</u>		

CAUTION

During MODE 6 operation with the wafer valve open and the equipment hatch closed, containment purge shutdown may result in over flow of the SFP or reactor cavity due to pressure changes in the containment building. [C.2]

STEP 2 :	7.1 Shutdown of Upper Containment Purge "A" Train [1] IF in MODE 6 with the wafer valve open AND the equipment hatch closed, THEN	<input type="checkbox"/> SAT <input type="checkbox"/> UNSAT
<u>Standard:</u>	Examinee addresses the step as N/A.	
<u>Comment</u>		

NOTE

Closing FCV-30-2 first ensures the lower ice doors will remain closed.

STEP 3 :	[2] CLOSE the supply fan discharge damper [FCV-30-2] with [HS-30-2] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-2 Purge Air Supply Fan 1A Discharge damper to CLOSE.	Critical Step
<u>Comment</u>		

STEP 4 :	[3] CLOSE containment dampers [FCV-30-14] and [FCV-30-56] with [HS-30-14] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-14, Lower Containment Purge Isolation dampers FCV-30-14 and 56 to CLOSE.	Critical Step
<u>Comment</u>		

STEP 5 :	[4] CLOSE containment dampers [FCV-30-15] and [FCV-30-57] with [HS-30-15] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-15, Lower Containment Purge Isolation dampers FCV-30-15 and 57 to CLOSE.	Critical Step
<u>Comment</u>		

STEP 6 :	[5] RECORD time dampers CLOSED TIME_____	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Comment</u>		

STEP 7 :	[6] IF additional purge flow in modes 5, 6, or defueled was required OR if an additional exhaust path was opened, THEN ENSURE the following are CLOSED : [6.1] [FCV-30-16] with [HS-30-16] [6.2] [FCV-30-17] with [HS-30-17] [6.3] [FCV-30-37] with [HS-30-37] [6.4] [FCV-30-40] with [HS-30-40]	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Comment</u>		

STEP 8 :	[7] CLOSE the exhaust fan suction damper [FCV-30-61] with [HS-30-61] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-61 Purge Air Exhaust Fan 1A Suction Damper to CLOSE.	Critical Step
<u>Comment</u>		

STEP 9 :	[8] STOP the “A” Train supply and exhaust fan with [HS-30-1A] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-1A Air Purge Supply and Exhaust fan 1A to STOP.	CRITICAL
<u>Comment</u>		

STEP 10 :	[9] PLACE [HS-30-1A] in PULL TO LOCK position.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-1A Air Purge Supply and Exhaust fan 1A in the PULL TO LOCK position.	CRITICAL
<u>Comment</u>		

STEP 11 :	<div>[10] VERIFY the following dampers CLOSED.</div> <div><table><tr><th></th><th>Initials</th></tr><tr><td>FCO-30-1A</td><td>_____</td></tr><tr><td>FCO-30-1B</td><td>_____</td></tr><tr><td>FCO-30-294</td><td>_____</td></tr><tr><td>FCO-30-295</td><td>_____</td></tr></table></div>		Initials	FCO-30-1A	_____	FCO-30-1B	_____	FCO-30-294	_____	FCO-30-295	_____	<div>____ SAT</div> <div>____ UNSAT</div>
	Initials											
FCO-30-1A	_____											
FCO-30-1B	_____											
FCO-30-294	_____											
FCO-30-295	_____											
<u>Standard:</u>	Examinee verifies all dampers CLOSED by observing green lights ON for XI-30-1A, XI-30-1B, XI-30-294, and XI-30-295.											
<u>Comment</u>												

STEP 12 :	[11] CLOSE the exhaust fan discharge damper [FCV-30-213] with [HS-30-213] .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee places HS-30-213 Purge Air Exhaust Fan 1A Discharge Isolation to CLOSE.	CRITICAL
<u>Comment</u>		

Terminating Cue:	Provide the following cue, “Another operator will complete the remaining steps of this procedure.”	STOP
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Stop Time _____

JPM BRIEFING SHEET

The examiner will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 5.
2. Lower Containment Purge "A" Train is in service.

INITIATING CUES:

1. You have been directed to shutdown the Lower Containment Purge System using 0-SO-30-3 CONTAINMENT PURGE SYSTEM OPERATION section 7.3.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

**HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE
SATISFACTORILY COMPLETED THE ASSIGNED TASK.**

SEQUOYAH NUCLEAR PLANT JOB PERFORMANCE MEASURE

**1305 NRC
PLANT
JPM I**

**RO/SRO
JOB PERFORMANCE MEASURE**

Task: Local Operation of 1A-A D/G (Idle Start & Stop)

Task #: 0640020104

Task Standard: D/G 1A-A is successfully started using local controls and cooling is established by local operation of the ERCW FCV using 0-SO-82-1 Diesel Generator 1A-A.

Alternate Path: YES: X NO:

Time Critical Task: YES: NO: X

K/A Reference/Ratings: 064A4.01 (4.0/4.3)

Method of Testing:

Simulated Performance: X **Actual Performance:**

Evaluation Method:

Simulator **In-Plant** X **Classroom**

Main Control Room **Mock-up**

Performer:
Trainee Name

Evaluator: /
Name / Signature DATE

Performance Rating: SAT: UNSAT:

Validation Time: 12 min **Total Time:**

Performance Time: **Start Time:** **Finish Time:**

COMMENTS

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. SM approval will be required to enter the "Trip Hazard Zone" in backup control room.
2. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
3. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

0-SO-82-1 section 8.2 and Appendices B and C.

References:

	Reference	Title	Rev No.
	0-SO-82-1	Diesel Generator 1A-A	37

READ TO OPERATOR

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

DIRECTIONS TO EXAMINEE:

I will explain the initial conditions, and state the task to be performed. All steps **shall be simulated** for this JPM. **WHEN ENTERING A UNIT TRIP HAZARD ZONE ENSURE YOU DO NOT TOUCH ANY SWITCHES WITHIN THAT ZONE.** I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 1.
2. 1A-A D/G has now been declared INOPERABLE for scheduled maintenance.
3. 0-SO-82-1 Diesel Generator 1A-A section 8.2 is in progress and has been completed through step 4.
4. Both of the Unit SROs have given approval to perform this procedure.
5. All prerequisites of 0-SO-82-1 Diesel Generator 1A-A are complete.

INITIATING CUES:

1. You have been directed to perform 0-SO-82-1 Diesel Generator 1A-A section 8.2 starting at step 5.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of 0-SO-82-1 Diesel Generator 1A-A section 8.2 and Appendices B and C.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of 0-SO-82-1 Diesel Generator 1A-A section 8.2 and Appendices B and C.	
<u>Cue</u>	Provide a marked up copy of 0-SO-82-1 Diesel Generator 1A-A section 8.2 and Appendices B and C.	
<u>Comment</u>		

STEP 2 :	<div style="border: 1px solid black; padding: 5px; text-align: center;"> NOTE Pressing 0-HS-82-22 places diesel controls in local. </div> <p>[5] PRESS [0-HS-82-22] Trip to Local Gen 1A-A pushbutton. _____</p>	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates depressing 0-HS-82-22	Critical Step
<u>Cue:</u>	Provide the following cue, “ 0-HS-82-22 went in and returned to out. ”	
<u>Comment</u>		

STEP 3 :	[6] CHECK [LRX1A] tripped (red target).	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee verifies LRX1A TRIPPED to local.	
<u>Cue:</u>	Provide the following cue, " LRX1A relay switch is 45 degrees clockwise from 12 o'clock position AND red flag above handswitch is present. "	
<u>Comment</u>		

STEP 4 :	<p>Local D/G Control Panel</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>Placing 0-HS-82-23 to MAINT makes the DG inoperable and unavailable.</p> </div> <p>[7] IF idle start is required with D/G in MAINT, THEN</p> <p>[7.1] OBTAIN approval of both the Unit 1 and Unit 2 US or SM prior to making Diesel Generator 1A-A inoperable.</p> <div style="text-align: right; margin-right: 100px;"> <p>_____ UNIT 1 US or SM</p> <p>_____ UNIT 2 US or SM</p> </div>	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Examiner Note:</u>	The step was addressed in the initial conditions.	
<u>Comment</u>		

STEP 5 :	[7.2] PLACE [0-HS-82-23] Maint-Auto Switch Gen 1A-A to MAINT.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing HS-82-23 in the MAINTENANCE (clockwise) position.	Critical Step
<u>Cue:</u>	Provide the following cue, “ Red light above HS-82-23 is ON green light is OFF. ”	
<u>Comment</u>		

STEP 6 :	[7.3] RECORD Diesel Generator 1A-A out-of-service time in 0-SI-OPS-082-007.M (current copy).	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Cue:</u>	Provide the following cue, “ The UO will place out-of-service time in SI. ”	
<u>Comment</u>		

STEP 7 :	[8] PRESS [0-HS-82-25] Idle Start Gen 1A-A pushbutton.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates depressing HS-82-23.	Critical Step
<u>Cue:</u>	Provide the following cue, “ You hear a rumbling rotational sound from the diesel engines. ”	
<u>Comment</u>		

STEP 8 :	[9] RECORD D/G 1A-A start time _____ Time	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Cue:</u>	Provide the following cue, “The UO will log the time.”	
<u>Comment</u>		

STEP 9 :	<p>Local Exciter Panel</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">NOTE</p> <p>Diesel Generator 1A-A should come to a speed of approximately 400 rpm and hold.</p> </div> <p>[10] VERIFY engine stabilizes at approximately 400 rpm. _____</p>	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee addresses the procedure step.	
<u>Cue:</u>	Provide the following cue, “Engine speed is ~ 400 rpm.”	
<u>Comment</u>		

STEP 10 :	[11] ENSURE [1-HS-67-66D] Emerg Dsl Htxs A1 & A2 Sup Vlv from Hdr A indicates OPEN .	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee recognizes FCV-67-66 closed by use of position indicator on the valve motor OR recognizes no flow indicated on FI-67-69, & 277.	
<u>Cue:</u>	Provide the following cue, “Both lights above HS-67-66 are OFF.”	
<u>Cue:</u>	Provide the following cue, “When Examinee looks at position indicator (or flow indicator), state valve indicates closed (or flow is 0 gpm).”	
<u>Comment</u>		

STEP 11 :	[12] IF [1-HS-67-66D] cannot be opened, THEN OPEN [1-HS-67-68D] Emerg Dsl Htxs A1 & A2 Sup Vlv From Hdr B.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates opening FCV-67-68 Emerg Dsl Htxs A1 & A2 Sup Vlv From Hdr B by placing HS-67-68 clockwise or manually operates FCV-67-68 CCW.	Critical Step
<u>Cue:</u>	Before FCV-67-68 operation provide the following cue, “Green light above HS-67-68 is ON, red light is OFF.”	
<u>Cue:</u>	After FCV-67-68 operation provide the following cue, “Green light above HS-67-68 is OFF, red light is ON.”	
<u>Comment</u>		

Terminating Cue:	Provide the following cue; “Another operator will complete the remaining steps of this procedure.”	STOP
-------------------------	-----------------------------------------------------------------------------------------------------------	-------------

Stop Time _____

JPM BRIEFING SHEET

DIRECTIONS TO EXAMINEE:

All steps **shall be simulated** for this JPM. **WHEN ENTERING A UNIT TRIP HAZARD ZONE ENSURE YOU DO NOT TOUCH ANY SWITCHES WITHIN THAT ZONE.** You will be provided initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is in MODE 1.
2. 1A-A D/G has now been declared INOPERABLE for scheduled maintenance.
3. 0-SO-82-1 Diesel Generator 1A-A section 8.2 is in progress and has been completed through step 4.
4. Both of the Unit SROs have given approval to perform this procedure.
5. All prerequisites of 0-SO-82-1 Diesel Generator 1A-A are complete.

INITIATING CUES:

1. You have been directed to perform 0-SO-82-1 Diesel Generator 1A-A section 8.2 starting at step 5.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

SEQUOYAH NUCLEAR PLANT

**1305 NRC
PLANT
JPM J**

**RO/SRO
JOB PERFORMANCE MEASURE**

Task: Locally align U2 TDAFW LCV Back-up Air Supply

Task #: 0000140504

Task Standard: The examinee will align back-up air to the Unit 2 TDAFW LCV using EA-3-4 Local Alignment TD AFW LCV Back-Up Air Supply.

Alternate Path: YES: _____ NO: X

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings:

Method of Testing:

Simulated Performance: X **Actual Performance:** _____

Evaluation Method:

Simulator _____ **In-Plant** X **Classroom** _____

Main Control Room _____ **Mock-up** _____

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: SAT: _____ UNSAT: _____

Validation Time: 8 min **Total Time:** _____

Performance Time: **Start Time:** _____ **Finish Time:** _____

COMMENTS

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. SM approval will be required to enter the "Trip Hazard Zone" in backup control room.
2. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
3. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

1. EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply

References:

	Reference	Title	Rev No.
1	EA-3-4	Local Alignment of TD AFW LCV Back-Up Air Supply	4

=====

READ TO EXAMINEE

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

DIRECTIONS TO EXAMINEE:

I will explain the initial conditions, and state the task to be performed. All steps **shall be simulated** for this JPM. **WHEN ENTERING A UNIT TRIP HAZARD ZONE ENSURE YOU DO NOT TOUCH ANY SWITCHES WITHIN THAT ZONE.** I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:


1. Unit 1 and Unit 2 have experienced a Loss of ERCW.
2. AOP-M.01 LOSS OF ESSENTIAL RAW COOLING WATER is in progress.

INITIATING CUES:

1. You have been directed to locally align the back-up air supply to the Unit 2 TDAFW LCVs using EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply.	
<u>Cue</u>	Provide a copy of EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply.	
<u>Comment</u>		

STEP 2 :	<p>4.1 Section Applicability</p> <p>1. IF placing backup air supply in service, THEN GO TO Section 4.2. <input type="checkbox"/></p> 	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee selects section 4.2 as the applicable section.	
<u>Comment</u>		

NOTE The high pressure air bottle can provide sufficient air volume and pressure to close the associated TD AFW LCV at least four times.		
STEP 3 :	1. SELECT the unit for local alignment of TD AFW LCVs. <ul style="list-style-type: none"> Unit 1 _____ Unit 2 _____ 	_____ SAT _____ UNSAT
<u>Standard:</u>	The examinee selects Unit 2 as the applicable Unit.	
<u>Comment</u>		

STEP 4 :	2. OBTAIN hand held lighting and radio.	_____ SAT _____ UNSAT
<u>Standard:</u>	The examinee simulates obtaining hand held lighting and a radio.	
<u>Comment</u>		

STEP 5 :	<p>3. IF performing this procedure during loss of all AC power (ECA-0.0), THEN OBTAIN the following keys: [glass-faced box in Shift Manager's Office]</p> <ul style="list-style-type: none"> • Vital Area key • Protected Area key. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	The examinee addresses the step as N/A.	
<u>Comment</u>		

STEP 6 :	<p>4. OPEN the following backup air supply isolation valves: [Aux Bldg, elev 714, Auxiliary Building General Supply Fan Room]</p> <table border="1"> <thead> <tr> <th>VALVE</th><th>DESCRIPTION</th><th>OPEN ✓</th></tr> </thead> <tbody> <tr> <td>ISV-32-1950E</td><td>Isolation valve for LCV-3-172</td><td><input type="checkbox"/></td></tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	ISV-32-1950E	Isolation valve for LCV-3-172	<input type="checkbox"/>	<p>___ SAT</p> <p>___ UNSAT</p>
VALVE	DESCRIPTION	OPEN ✓						
ISV-32-1950E	Isolation valve for LCV-3-172	<input type="checkbox"/>						
<u>Standard:</u>	The examinee simulates turning the handwheel for U-2 ISV-32-1950E, Isolation valve for Unit 2 LCV-3-172 in the counter clockwise direction.	Critical Step						
<u>Cue:</u>	After the examinee simulates opening ISV-32-1950E, provide the following cue, " Handwheel turns several turns in the CCW direction and movement stops ".							
<u>Comment</u>								

<p>STEP 7 :</p>	<p>4. OPEN the following backup air supply isolation valves: [Aux Bldg, elev 714, Auxiliary Building General Supply Fan Room]</p> <table border="1" data-bbox="423 258 1263 384"> <thead> <tr> <th>VALVE</th> <th>DESCRIPTION</th> <th>OPEN ✓</th> </tr> </thead> <tbody> <tr> <td>ISV-32-1969E</td> <td>Isolation valve for LCV-3-173</td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	ISV-32-1969E	Isolation valve for LCV-3-173	<input type="checkbox"/>	<p>____ SAT ____ UNSAT</p>
VALVE	DESCRIPTION	OPEN ✓						
ISV-32-1969E	Isolation valve for LCV-3-173	<input type="checkbox"/>						
<p><u>Standard:</u></p>	<p>The examinee simulates turning the handwheel for U-2 ISV-32-1969E, Isolation valve for Unit 2 LCV-3-173 in the counter clockwise direction.</p>	<p>Critical Step</p>						
<p><u>Cue:</u></p>	<p>After the examinee simulates opening ISV-32-1969E, provide the following cue, "Handwheel turns several turns in the CCW direction and movement stops".</p>							
<p><u>Comment</u></p>								

<p>STEP 8 :</p>	<p>4. OPEN the following backup air supply isolation valves: [Aux Bldg, elev 714, Auxiliary Building General Supply Fan Room]</p> <table border="1" data-bbox="423 970 1263 1096"> <thead> <tr> <th>VALVE</th> <th>DESCRIPTION</th> <th>OPEN ✓</th> </tr> </thead> <tbody> <tr> <td>ISV-32-1866E</td> <td>Isolation valve for LCV-3-175</td> <td><input type="checkbox"/></td> </tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	ISV-32-1866E	Isolation valve for LCV-3-175	<input type="checkbox"/>	<p>____ SAT ____ UNSAT</p>
VALVE	DESCRIPTION	OPEN ✓						
ISV-32-1866E	Isolation valve for LCV-3-175	<input type="checkbox"/>						
<p><u>Standard:</u></p>	<p>The examinee simulates turning the handwheel for U-2 ISV-32-1866E, Isolation valve for Unit 2 LCV-3-175 in the counter clockwise direction.</p>	<p>Critical Step</p>						
<p><u>Cue:</u></p>	<p>After the examinee simulates opening ISV-32-1866E, provide the following cue, "Handwheel turns several turns in the CCW direction and movement stops".</p>							
<p><u>Comment</u></p>								

<p>STEP 9 :</p>	<p>4. OPEN the following backup air supply isolation valves: [Aux Bldg, elev 714, Auxiliary Building General Supply Fan Room]</p> <table border="1" data-bbox="423 260 1263 392"> <thead> <tr> <th data-bbox="423 260 699 338">VALVE</th> <th data-bbox="699 260 1105 338">DESCRIPTION</th> <th data-bbox="1105 260 1263 338">OPEN ✓</th> </tr> </thead> <tbody> <tr> <td data-bbox="423 338 699 392">ISV-32-1974E</td> <td data-bbox="699 338 1105 392">Isolation valve for LCV-3-174</td> <td data-bbox="1105 338 1263 392"><input type="checkbox"/></td> </tr> </tbody> </table>	VALVE	DESCRIPTION	OPEN ✓	ISV-32-1974E	Isolation valve for LCV-3-174	<input type="checkbox"/>	<p>____ SAT ____ UNSAT</p>
VALVE	DESCRIPTION	OPEN ✓						
ISV-32-1974E	Isolation valve for LCV-3-174	<input type="checkbox"/>						
<p><u>Standard:</u></p>	<p>The examinee simulates turning the handwheel for U-2 ISV-32-1974E, Isolation valve for Unit 2 LCV-3-174 in the counter clockwise direction.</p>	<p>Critical Step</p>						
<p><u>Cue:</u></p>	<p>After the examinee simulates opening ISV-32-1974E, provide the following cue, "Handwheel turns several turns in the CCW direction and movement stops".</p>							
<p><u>Comment</u></p>								

<p>Terminating Cue:</p>	<p>Provide the following cue, another Operator will complete the remaining steps of this procedure.</p>	<p>STOP</p>
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Stop Time _____

JPM BRIEFING SHEET

DIRECTIONS TO EXAMINEE:

All steps **shall be simulated** for this JPM. **WHEN ENTERING A UNIT TRIP HAZARD ZONE ENSURE YOU DO NOT TOUCH ANY SWITCHES WITHIN THAT ZONE.** You will be provided initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 and Unit 2 have experienced a Loss of ERCW.
2. AOP-M.01 LOSS OF ESSENTIAL RAW COOLING WATER is in progress.

INITIATING CUES:

1. You have been directed to locally align the back-up air supply to the Unit 2 TDAFW LCVs using EA-3-4 Local Alignment of TD AFW LCV Back-Up Air Supply.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.

**SEQUOYAH NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**1305 NRC
PLANT
JPM K**

**RO/SRO
JOB PERFORMANCE MEASURE**

Task: Respond to Loss of Control Air System

Task #: 0000900501

Task Standard: The examinee will reset and start Control & Service Air Compressor(s). using EA-32-2, Establishing Control and Service Air.

Alternate Path: YES: _____ NO: X

Time Critical Task: YES: _____ NO: X

K/A Reference/Ratings: APE 065 AA1.04 (3.5/3.4)

Method of Testing:

Simulated Performance: X **Actual Performance:** _____

Evaluation Method:

Simulator _____ **In-Plant** X **Classroom** _____

Main Control Room _____ **Mock-up** _____

Performer: _____
Trainee Name

Evaluator: _____ / _____
Name / Signature DATE

Performance Rating: SAT: _____ UNSAT: _____

Validation Time: 10 min **Total Time:** _____

Performance Time: **Start Time:** _____ **Finish Time:** _____

COMMENTS

SPECIAL INSTRUCTIONS TO EVALUATOR:

1. SM approval will be required to enter the "Trip Hazard Zone" in backup control room.
2. Critical steps are identified in step SAT/UNSAT column by bold print 'Critical Step.'
3. Any UNSAT requires comments.

Tools/Equipment/Procedures Needed:

1. EA-32-2, Establishing Control and Service Air

References:

	Reference	Title	Rev No.
	EA-32-2	Establishing Control and Service Air	3

READ TO OPERATOR

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

DIRECTIONS TO EXAMINEE:

I will explain the initial conditions, and state the task to be performed. All steps **shall be simulated** for this JPM. **WHEN ENTERING A UNIT TRIP HAZARD ZONE ENSURE YOU DO NOT TOUCH ANY SWITCHES WITHIN THAT ZONE.** I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Units 1 and 2 are in MODE 3 following a Loss of Offsite Power.
2. The Aux. Air Compressors are not in service.
3. EA-32-2, Establishing Control and Service Air is in progress, completed through section 4.2 step 3.

INITIATING CUES:

1. You have been directed to start and manually load the Station Air Compressors using EA-32-2, Establishing Control and Service Air section 4.2 starting at step 4.
2. Inform the SRO when complete.

Start Time _____

STEP 1 :	Obtain a copy of EA-32-2, Establishing Control and Service Air.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee obtains a copy of EA-32-2, Establishing Control and Service Air.	
<u>Cue</u>	Provide a marked up copy of EA-32-2, Establishing Control and Service Air, completed through section 4.2 step 3.	
<u>Comment</u>		

STEP 2 :	4. ENSURE compressor trip signals RESET as follows: a. DEPRESS [0-HS-32-25B] to reset air compressor trip signals.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates depressing 0-HS-32-25B to reset air comp trip signals.	Critical Step
<u>Cue</u>	Following simulated operation provide the following cue, " 0-HS-32 25B went in and returned to out. ".	
<u>Comment</u>		

STEP 3 :	<p>4. ENSURE compressor trip signals RESET as follows:</p> <p>b. CHECK Air Compressor A trip lights DARK:</p> <ul style="list-style-type: none"> • Low OIL PRESSURE • High OIL TEMPERATURE • High DISCHARGE AIR PRESSURE. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee observes Compressor A Trip lights DARK.	
<u>Cue</u>	When asked provide the following cue, " All Compressor A trip lights are DARK. "	
<u>Comment</u>		

STEP 4 :	<p>4. ENSURE compressor trip signals RESET as follows:</p> <p>c. CHECK Air Compressor B trip lights DARK:</p> <ul style="list-style-type: none"> • Low OIL PRESSURE • High OIL TEMPERATURE • High DISCHARGE AIR PRESSURE. 	<p>___ SAT</p> <p>___ UNSAT</p>
<u>Standard:</u>	Examinee observes Compressor A Trip lights DARK.	
<u>Cue</u>	When asked provide the following cue, " All Compressor B trip lights are DARK. "	
<u>Comment</u>		

STEP 5 :	5. PLACE Air Compressor A AUTO/HAND switch [0-HS-32-25D] in HAND.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-25D to HAND.	Critical Step
<u>Cue</u>	When asked provide the following cue, “ 0-HS-32-25D is positioned counter-clockwise to “HAND.” ”	
<u>Comment</u>		

STEP 6 :	6. PLACE Air Compressor B AUTO/HAND switch [0-HS-32-26A] in HAND.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-26A to HAND.	Critical Step
<u>Cue</u>	When asked provide the following cue, “ 0-HS-32-26A is positioned counter-clockwise to “HAND.” ”	
<u>Comment</u>		

STEP 7 :	7. PLACE [HS-32-25A] in Position 1 (AB).	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing HS-32-25A in Position 1.	
<u>Cue</u>	When asked provide the following cue, " HS-32-25A is positioned counter-clockwise to Position 1. "	
<u>Comment</u>		

STEP 8 :	8. ENSURE [0-HS-32-25F] for Air Compressor A in PULL TO START.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-25F for comp A in PULL TO START position.	Critical Step
<u>Cue</u>	When asked provide the following cue, " HS-32-25F is in maintained in the pull out position. "	
<u>Comment</u>		

STEP 9 :	9. DEPRESS [0-HS-32-25E] to start Air Compressor A.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates depressing 0-HS-32-25E.	Critical Step
<u>Cue</u>	When asked provide the following cue, “You hear a mechanical rotational noise from Compressor A.”	
<u>Comment</u>		

STEP 10 :	10. PLACE [0-HS-32-43A] and [0-HS-32-43B] in ON to fully load Air Compressor A.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-43A and 0-HS-32-43B in ON (clockwise) position to fully load comp A.	Critical Step
<u>Cue</u>	When asked provide the following cue, “You hear the rotational sound lowering then recovering from Compressor A.”	
<u>Comment</u>		

STEP 11 :	11. ENSURE [0-HS-32-26D] for Air Compressor B in PULL TO START.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-26D for comp A in PULL TO START position.	Critical Step
<u>Cue</u>	When asked provide the following cue, " HS-32-26D is maintained in the pull out position. "	
<u>Comment</u>		

STEP 12 :	12. DEPRESS [0-HS-32-26B] to start Air Compressor B.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates depressing 0-HS-32-26B.	Critical Step
<u>Cue</u>	When asked provide the following cue, " You hear a mechanical rotational noise from Compressor B. "	
<u>Comment</u>		

STEP 13 :	13. PLACE <u>[0-HS-32-38A]</u> and <u>[0-HS-32-38B]</u> in ON to fully load Air Compressor B.	____ SAT ____ UNSAT
<u>Standard:</u>	Examinee simulates placing 0-HS-32-38A and 0-HS-32-38B in ON (clockwise) position to fully load Air Compressor B.	Critical Step
<u>Cue</u>	When asked provide the following cue, “You hear the rotational sound lowering then recovering from Compressor B.”	
<u>Comment</u>		
Terminating Cue:	Provide the following cue, “Another operator will perform the remaining steps of this procedure.	STOP

Stop Time _____

JPM BRIEFING SHEET

DIRECTIONS TO EXAMINEE:

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INITIAL CONDITIONS:

1. Units 1 and 2 are in MODE 3 following a Loss of Offsite Power.
2. The Aux. Air Compressors are not in service.
3. EA-32-2, Establishing Control and Service Air is in progress, completed through section 4.2 step 3.

INITIATING CUES:

1. You have been directed to start and manually load the Station Air Compressors using EA-32-2, Establishing Control and Service Air section 4.2 starting at step 4.
2. Inform the SRO when complete.

Acknowledge to the examiner when you are ready to begin.

HAND THIS PAPER BACK TO YOUR EVALUATOR WHEN YOU HAVE SATISFACTORILY COMPLETED THE ASSIGNED TASK.