

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

CRO-008

Energize Main Feeder Busses From CT-5

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Energize Main Feeder Busses From CT-5

Alternate Path:

No

Facility JPM #:

CRO-008

K/A Rating(s):

System: 055
K/A: EA1.07
Rating: 4.3/4.5

Task Standard:

Energize Main Feeder Busses from CT-5.

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

EOP, Encl 5.38 (Restoration of Power)

Validation Time: 10 minutes

Time Critical: No

Candidate: _____
NAME

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____
NAME

SIGNATURE / DATE

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COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 218
2. Place simulator in **RUN**

Tools/Equipment/Procedures Needed:

EOP, Encl 5.38 (Restoration of Power)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

With Keowee Unit 1 out of service for maintenance, Unit 1 experienced a lockout on CT-1 followed by a unit trip.

Blackout tab of the EOP in progress

The Blackout tab directs the initiation of Encl. 5.38 (Restoration of Power).

INITIATING CUES:

The CR SRO / procedure director directs you to initiate Encl. 5.38, Restoration of Power, to regain power to the Main Feeder Buses.

START TIME: _____

<p><u>STEP 1:</u> Step 1 Verify power has been restored.</p> <p><u>STANDARD:</u> Determine power has NOT been restored by observing MFB voltage on 1AB1. Perform RNO step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 1 RNO GO TO Step 3.</p> <p><u>STANDARD:</u> GO TO Step 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 3 Place 1HP-31 in HAND and reduce demand to 0.</p> <p><u>STANDARD:</u> Place 1HP-31 in HAND and reduce demand to 0 using the toggle switch. Located on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> Step 4 Close 1HP-21.</p> <p><u>STANDARD:</u> Close 1HP-21 by depressing the closed pushbutton on the RZ module located on 1VB2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 5:</u> Step 5 Verify any of the following energized:</p> <ul style="list-style-type: none"> • MFB1 • MFB2 <p><u>STANDARD:</u> Observes that zero (0) volts are indicated on both MFBs meters located on 1AB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 5 RNO GO TO Step 8.</p> <p><u>STANDARD:</u> GO TO Step 8.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Step 8 Verify CT-1 indicates ≈ 4160 volts.</p> <p><u>STANDARD:</u> Observes that zero (0) volts is indicated on CT-1 on 1AB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 8 RNO GO TO Step 18.</p> <p><u>STANDARD:</u> GO TO Step 18.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 18 Verify both Standby Bus #1 and Standby Bus #2 are de-energized.</p> <p><u>STANDARD:</u> Observes that zero (0) volts is indicated both Standby Buses located on 2AB3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 10:</u> Step 19 Verify all Keowee units operating.</p> <p><u>STANDARD:</u> Determine that both Keowee units are Emergency Lockout by observing the Statalarms 2SA-17/A1 and 2SA-18/A1. Perform RNO step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 19 RNO</p> <p>1. Emergency start Keowee units:</p> <ul style="list-style-type: none"> • KEOWEE EMER START CHANNEL A • KEOWEE EMER START CHANNEL B <p>2. IF NO Keowee units are operating, THEN GO TO Step 35.</p> <p><u>STANDARD:</u> Place the KEOWEE EMER START CHANNEL A switch to start located on 1UB1.</p> <p>Note: KEOWEE EMER START CHANNEL B switch is not modeled.</p> <p>Note: Since both Keowee units are locked out the candidate may decide not to operate the emergency start switches.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 35</p> <p>IAAT CT-5 indicates \approx 4160 volts, THEN GO TO Step 49.</p> <p><u>STANDARD:</u> Observes that approximately 4160 volts is indicated on the CT-5 voltage meter located on 1AB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 13:</u> Step 49</p> <p>Place the following switches in MAN:</p> <ul style="list-style-type: none">• MFB₁ AUTO/MAN• MFB₂ AUTO/MAN• STANDBY 1 AUTO/MAN• STANDBY 2 AUTO/MAN <p><u>STANDARD:</u> Rotates the AUTO/MAN selector switch to the MANUAL position for each of the switches listed above.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Step 50</p> <p>Open the following breakers:</p> <ul style="list-style-type: none">• N1₁ MFB1 NORMAL FDR• N2₁ MFB2 NORMAL FDR• E1₁ MFB1 STARTUP FDR• E2₁ MFB2 STARTUP FDR <p><u>STANDARD:</u> Verify each of the above breakers is OPEN by observing the white breaker open light is LIT on 1AB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 51</p> <p>Place the following switches in MAN:</p> <ul style="list-style-type: none">• CT4 BUS 1 AUTO/MAN• CT4 BUS 2 AUTO/MAN• CT5 BUS 1 AUTO/MAN• CT5 BUS 2 AUTO/MAN <p><u>STANDARD:</u> Rotates the AUTO/MAN selector switch to the MANUAL position for each of the switches listed above located on 2AB3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 16:</u> Step 52</p> <p>Open the following breakers:</p> <ul style="list-style-type: none">• SK1 CT4 STBY BUS 1 FEEDER• SK2 CT4 STDY BUS 2 FEEDER <p><u>STANDARD:</u> Verify each of the above breakers is OPEN by observing the white breaker open light is LIT on 2AB3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u> Step 53</p> <p>Close the following breakers:</p> <ul style="list-style-type: none">• SL1 CT5 STBY BUS 1 FEEDER• SL2 CT5 STBY BUS 2 FEEDER <p><u>STANDARD:</u> Go to the CLOSED position for each of the switches listed above located on 1AB3..</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 18:</u> Step 54</p> <p>Place the following switches in AUTO:</p> <ul style="list-style-type: none">• CT5 BUS 1 AUTO/MAN• CT5 BUS 2 AUTO/MAN <p><u>STANDARD:</u> Rotates the AUTO/MAN selector switch to the AUTO position for each of the switches listed above.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 19:</u> Step 55 Verify Standby Bus #1 energized.</p> <p><u>STANDARD:</u> Observes that ≈ 4160 volts are indicated for Standby Bus #1 located on 2AB3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 20:</u> Step 56 Notify CR SRO in each unit where a blackout exists that Standby Bus #1 is energized.</p> <p><u>STANDARD:</u> Notifies CR SRO that Standby Bus #1 is energized located on 2AB3. <i>Cue: If asked, inform candidate that only Unit 1 is affected.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> Step 57 Close the following breakers:</p> <ul style="list-style-type: none"> • S1₁ STBY BUS 1 TO MFB1 • S2₁ STBY BUS 2 TO MFB2 <p><u>STANDARD:</u> Goes to the CLOSED position for each of the switches listed above.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> Step 58 Verify any of the following energized:</p> <ul style="list-style-type: none"> • 1TC • 1TD • 1TE <p><u>STANDARD:</u> Observes that ≈ 4160 volts indicated on either MFB voltmeters or OAC.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 22:</u> Step 59 Notify Unit 1 CR SRO of status of 4160V SWGR.</p> <p><u>STANDARD:</u> Notifies CR SRO of status of 4160V SWGR</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>
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STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
3	Step is required to protect the RCP seals.
17	Step is required to energize the Main Feeder Bus.
21	Step is required to energize the Main Feeder Bus.

**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

INITIAL CONDITIONS:

With Keowee Unit 1 out of service for maintenance, Unit 1 experienced a lockout on CT-1 followed by a unit trip.

Blackout tab of the EOP in progress

The Blackout tab directs the initiation of Encl. 5.38 (Restoration of Power).

INITIATING CUES:

The CR SRO / procedure director directs you to initiate Encl. 5.38, Restoration of Power, to regain power to the Main Feeder Buses.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

CRO-011

Align Intake Canal For Recirc On Dam Failure

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Align Intake Canal for Recirc on Dam Failure

Alternate Path:

Yes

Facility JPM #:

CRO-011A

K/A Rating(s):

System: 075
K/A: A2.01
Rating: 3.0/3.2

Task Standard:

Intake Canal is aligned for recirculation correctly by procedure and an NEO is dispatched to manually open CCW-9.

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

"CCW LAKE LEVEL LOW" statalarm (1SA-9, B-10)
AP/1/A/1700/13, Dam Failure

Validation Time: 15 minutes

Time Critical: No

=====

Candidate: _____
NAME

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____

NAME

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 219
2. **IMPORT** CRO-011 files
3. Place simulator in **RUN**

Tools/Equipment/Procedures Needed:

AP/13, Dam Failure

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Dam failure has occurred

Intake Canal is intact

Unit has been manually tripped

Subsequent Actions of AP/13, Dam Failure have been completed up to step 4.3.

INITIATING CUES:

Control Room Supervisor directs you to continue with AP/13 (Dam Failure) beginning at step 4.3.

START TIME: _____

<p><u>STEP 1:</u> Step 4.3: Verify CCW Intake Canal intact.</p> <p><u>STANDARD:</u> The CCW Intake Canal is verified intact by the initial conditions.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 4.4: Depress the "CCW DAM FAILURE" pushbutton.</p> <p><u>STANDARD:</u> The "CCW DAM FAILURE" pushbutton is located by the candidate on 1AB3 and depressed.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 4.5: Dispatch an individual to the area of the dam failure to report damage to the Control Rooms.</p> <p><u>STANDARD:</u> The candidate contacts the Shift Work Manager, or calls the Work Control Center kitchen directly, and dispatches an individual to the area of the dam failure to report damage to the control room.</p> <p><i>Cue: NEO dispatched to the area of the dam failure to report damage to the Control Rooms.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 4:</u> Step 4.6 GO TO Step 4.47</p> <p><u>STANDARD:</u> The candidate proceeds to Step 4.47 in AP/13.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> Step 4.47: Stop <u>all</u> RCPs.</p> <p><u>STANDARD:</u> The control switches for RCPs 1A1, 1A2, 1B1, 1B2 are located by the candidate on 1AB1 and rotated to the TRIP position. The candidate verifies by red run lights off and/or "0" amps indicated that the RCPs are tripped.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 4.48: Stop all CCW pumps.</p> <p><u>STANDARD:</u> The candidate locates the CCW pump light indications on 1AB3 and verifies by red run lights off and/or "0" amps indicated that all CCW pumps are tripped.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Step 4.49: Open 1CCW 1-6.</p> <p><u>STANDARD:</u> The candidate locates 1CCW 1-6 (WATERBOX EMER DISCH) control switch and indications located on 1AB3. The red "OPEN" indication light is verified on.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 8:</u> Step 4.50: Ensure all condenser outlet valves indicate closed (GD AP13):</p> <ul style="list-style-type: none"> • 01D0273 (1CCW-20 CONDENSER 1A OUTLET 1) • 01D0275 (1CCW-21 CONDENSER 1A OUTLET 2) • 01D0277 (1CCW-22 CONDENSER 1B OUTLET 1) • 01D0279 (1CCW-23 CONDENSER 1B OUTLET 2) • 01D0281 (1CCW-24 CONDENSER 1C OUTLET 1) • 01D0283 (1CCW-25 CONDENSER 1C OUTLET 2) <p><u>STANDARD:</u> The candidate displays OAC Graphics “GD AP13” and verifies 1CCW-20 through 1CCW-25 indicate closed. The candidate may also display individual points by Point ID or a Group Display to determine 1CCW-20 through 1CCCW-25 indicates closed.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 4.51: Verify CCW-8 is open.</p> <p><u>STANDARD:</u> CCW-8 switch and indication are located by the candidate on 2AB3 verifying red "OPEN" light illuminated and green "CLOSED" light extinguished.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 4.52: Notify Unit 2 that emergency CCW siphon flow has been established on Unit 1.</p> <p><u>STANDARD:</u> The candidate notifies Unit 2 that emergency CCW siphon flow has been established.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 11:</u> Step 4.53: Dispatch operators to perform Encl 5.2 (CCW Inventory Conservation)</p> <p><u>STANDARD:</u> The candidate contacts the Shift Work Manager, or calls the Work Control Center kitchen directly, and dispatches operators to perform Encl 5.2 (CCW Inventory Conservation).</p> <p><i>Cue: NEO dispatched to perform Encl 5.2.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="142 743 1219 852" style="border: 1px solid black; padding: 5px; text-align: center;"><p><u>NOTE</u></p><p>Unit 2 CR will decide which unit will establish CCW recirculation. Unit 1 will only supply CCW recirculation when directed by Unit 2.</p></div> <p><u>STEP 12:</u> Step 4.54: IAAT Unit 2 CR has directed Unit 1 to supply CCW recirculation, THEN perform Steps 4.55 – 4.70.</p> <p><u>STANDARD:</u> The candidate determines where or not Unit 2 has directed Unit 1 to supply CCW recirculation.</p> <p> The candidate will proceed to Step 4.55 when informed that Unit 2 directs Unit 1 to supply CCW recirculation.</p> <p><i>Cue: When the candidate reaches Step 4.54 inform the candidate that Unit 2 directs that Unit 1 will supply CCW recirculation.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 13:</u> Step 4.55: Determine which CCW pump will be started.</p> <p><u>STANDARD:</u> The candidate determines which CCW pump to be started.</p> <p><i>Cue: If asked as the SRO which CCW pump to start, inform candidate to start the 1D CCW pump.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Step 4.56: Place <u>all</u> CCW Pump switches in the trip position:</p> <ul style="list-style-type: none"> • 1A CW Pump • 1B CW Pump • 1C CW Pump • 1D CW Pump <p><u>STANDARD:</u> The candidate locates the CCW Pump controls on 1AB3 and rotates the 1A, 1B, 1C, and 1D CCW Pump control switches to the trip position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 4.57: Verify 1A or 1B CCW Pump is to be started.</p> <p><u>STANDARD:</u> The candidate may ask the Procedure Director which CCW is desired to be started.</p> <p>When instructed by the Procedure Director that 1D CCW Pump is to be started, the candidate should refer to the RNO column.</p> <p><i>Cue: Instruct the candidate that the SRO requests that 1D CCW Pump be started.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 16:</u> Step 4.57 RNO: GO TO Step 4.60</p> <p><u>STANDARD:</u> The candidate should proceed to Step 4.60.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u> Step 4.60</p> <p>Verify both of the following CCW pump discharge valves are closed:</p> <ul style="list-style-type: none">• 1CCW-12• 1CCW-13 <p><u>STANDARD:</u> The candidate verifies that 1CCW-12 indicates closed by the green closed light indication on 1AB3 or by OAC indications.</p> <p>The candidate verifies that 1CCW-13 indicates open by the red open light indication on 1AB3 or by OAC indications.</p> <p>The candidate proceeds to Step 5.60 RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 18:</u> Step 4.60 RNO</p> <p>Dispatch an operator to close the discharge valves from the breaker switch (Unit 1 Equipment rm):</p> <table border="0"> <thead> <tr> <th>Pump</th> <th>Valve</th> <th>Breaker</th> </tr> </thead> <tbody> <tr> <td>1C</td> <td>1CCW-12</td> <td>1XS3-2E</td> </tr> <tr> <td>1D</td> <td>1CCW-13</td> <td>1XS1-F3C</td> </tr> </tbody> </table> <p><u>STANDARD:</u> The candidate dispatches an operator to Unit 1 Equipment Room to close 1CCW-12.</p> <p>If the candidate directs the operator to close valves, 1CCW-12 and 1CCW-13, the operator will inform the candidate that 1CCW-13 indicated closed when he arrived to close 1CCW-12.</p> <p>Simulator operator: After the candidate has dispatched an operator to Unit 1’s Equipment Room, <u>FIRE TIMER #1 TO CLOSE 1CCW-12;</u></p> <p><i>Cue: Inform the candidate that 1CCW-12 and 1CCW-13 both indicate closed from equipment room.</i></p> <p><u>COMMENTS:</u></p>	Pump	Valve	Breaker	1C	1CCW-12	1XS3-2E	1D	1CCW-13	1XS1-F3C	<p>___ SAT</p> <p>___ UNSAT</p>
Pump	Valve	Breaker								
1C	1CCW-12	1XS3-2E								
1D	1CCW-13	1XS1-F3C								
<p><u>STEP 19:</u> Step 4.61</p> <p>Start the selected CCW Pump.</p> <p><u>STANDARD:</u> The candidate locates the control switch for 1D CCW Pump on 1AB3 and rotates the control switch to the close position.</p> <p>The 1D CCW pump starts as indicated by red run light illuminated and amps indicated.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>									

<p><u>STEP 20:</u> Step 4.62 Verify the started CCW pump discharge valve opened.</p> <p><u>STANDARD:</u> The candidate determines that 1CCW-13 does not OPEN. The candidate may verify 1CCW-13 position by OAC indications.</p> <p>The candidate proceeds to Step 5.62 RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> Step 4.62 RNO Stop the operating CCW pump. GO TO Step 4.55 to attempt to start a different CCW pump.</p> <p><u>STANDARD:</u> The candidate stops the 1D CCW pump. The candidate GOES TO Step 5.55</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> Step 4.55: Determine which CCW pump will be started.</p> <p><u>STANDARD:</u> The candidate determines which CCW pump to be started.</p> <p>Cue: If asked as the SRO which CCW pump to start, inform candidate to start the 1C CCW pump.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 23:</u> Step 4.56: Place <u>all</u> CCW Pump switches in the trip position:</p> <ul style="list-style-type: none">• 1A CW Pump• 1B CW Pump• 1C CW Pump• 1D CW Pump <p><u>STANDARD:</u> The candidate locates the CCW Pump controls on 1AB2 and rotates the 1A, 1B, 1C, and 1D CCW Pump control switches to the trip position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 24:</u> Step 4.57: Verify 1A or 1B CCW Pump is to be started.</p> <p><u>STANDARD:</u> The candidate may ask the Procedure Director which CCW is desired to be started.</p> <p>When instructed by the Procedure Director that 1C CCW Pump is to be started, the candidate should refer to the RNO column.</p> <p><i>Cue: Instruct the candidate that the SRO requests that 1C CCW Pump be started.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 25:</u> Step 4.57 RNO: GO TO Step 4.60</p> <p><u>STANDARD:</u> The candidate should proceed to Step 4.60.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 26:</u> Step 4.60</p> <p>Verify both of the following CCW pump discharge valves are closed:</p> <ul style="list-style-type: none"> • 1CCW-12 • 1CCW-13 <p><u>STANDARD:</u> The candidate verifies that 1CCW-12 indicates closed by the green closed light indication on 1AB3 or by OAC indications.</p> <p>The candidate verifies that 1CCW-13 indicates closed by the green closed light indication on 1AB3 or by OAC indications.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 27:</u> Step 4.61</p> <p>Start the selected CCW Pump.</p> <p><u>STANDARD:</u> The candidate locates the control switch for 1C CCW Pump on 1AB3 and rotates the control switch to the close position.</p> <p>The candidate observes that the 1CCW-12 starts to travel open and when approx 20% open, the 1C CCW pump starts as indicated by red run light illuminated and amps indicated.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 28:</u> Step 4.62</p> <p>Verify the started CCW pump discharge valve opened.</p> <p><u>STANDARD:</u> The candidate determines that 1CCW-12 OPENS. The candidate may verify 1CCW-12 position by OAC indications.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 29:</u> Step 4.63 Ensure CCWP LOAD SHED DEFEAT switch is positioned to a running CCWP.</p> <p><u>STANDARD:</u> Verify that CCWP LOAD SHED DEFEAT is selected to the "C" CCWP. Located on 1VB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 30:</u> Step 4.64 Verify CCW-9 (EMERGENCY CCW DISCHARGE TO INTAKE) open.</p> <p><u>STANDARD:</u> The candidate locates CCW-9 switch and indication on 2AB3 determines that CCW-9 is open by the red "OPEN" indication LIT and the green "CLOSED" indication OFF.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
2	Step stops all CCW pumps, opens 1CCW-1-6, and closes condenser outlet valves.
5	Step reduces RCS heat load and prevents RCP damage from inadequate LPSW.
27	This step is required to start a CCW pump.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Dam failure has occurred

Intake Canal is intact

Unit has been manually tripped

Subsequent Actions of AP/13, Dam Failure have been completed up to step 4.3.

INITIATING CUES:

Control Room Supervisor directs you to continue with AP/13 (Dam Failure) beginning at step 4.3.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

CRO-012

RECOVER A DROPPED CONTROL ROD

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

RECOVER A DROPPED CONTROL ROD

Alternate Path:

Yes

Facility JPM #:

CRO-012A

K/A Rating(s):

System: APE 003
K/A: AA 1.02
Rating: 3.6/3.4

Task Standard:

Recover dropped control rod by procedure

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

AP/15 (Dropped/Misaligned Control Rod)
OP/0/A/1105/019, Enclosure 4.6 (Recover of Dropped/Misaligned Or Regulating Control Rod With Diamond In Manual)

Validation Time: 20 minutes

Time Critical: NO

=====

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____

NAME

_____ / _____

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 213
2. **IMPORT** files for CRO-012
3. Go to **RUN**

Tools/Equipment/Procedures Needed:

OP/0/A/1105/019, Enclosure 4.6 (Recover of Dropped/Misaligned Or Regulating Control Rod With Diamond In Manual)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Unit #1 dropped a control rod in Group 2 approximately one hour ago and the unit is stable at 55%.

The Subsequent Actions of AP/15, DROPPED CONTROL RODS, have been completed through step 4.10.

Shutdown Margin calculation has been run to verify that an adequate SDM exists.

Systems Duty Engineer has been notified and no special maneuvering instructions are required.

ICS is required to be placed in MANUAL for the control rod recovery.

Enclosure 4.6 of OP/0/A/1105/019 has been completed up to step 2.1.

INITIATING CUE:

The Control Room SRO informs you that the problem has been corrected and that recovery of the dropped rod can now begin.

Use enclosure 4.6 of OP/0/A/1105/019 beginning at step 2.1.

START TIME: _____

<p><u>STEP 1:</u> Step 2.1 Perform the following:</p> <ul style="list-style-type: none"> • Designate individual to monitor Rx Power & FDW Flow while ICS in Manual. (not critical) • Ensure A FDW MASTER to HAND. • Ensure B FDW MASTER to HAND. • Ensure Diamond in MANUAL. <p><u>STANDARD:</u> Designate individual to monitor Rx Power & FDW Flow while ICS in Manual.</p> <p>The manual pushbutton for the A & B FDW Masters are depressed, The White Hand light comes ON and the Red Auto light Goes OFF.</p> <p>The AUTO/MANUAL pushbutton on the Diamond Control Panel is depressed; the MANUAL half of the Push Button is back lighted.</p> <p>Location 1UB1</p> <p><i>Cue: If asked, inform candidate that an additional RO will monitor Rx Power & FDW Flow while ICS in Manual.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.2 Perform the following:</p> <ul style="list-style-type: none"> • Ensure SEQ OR is ON. • Ensure ASYM FAULT BYPASS is ON. <p><u>STANDARD:</u> Select SEQ OR by depressing the SEQ OR pushbutton on the Diamond and verifying that the backlight is LIT.</p> <p>Select ASYM FAULT BYPASS by depressing the ASYM FAULT BYPASS pushbutton on the Diamond and verifying that the backlight is LIT.</p> <p>Location 1UB1</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 3:</u> Step 2.3 Perform the following:</p> <ul style="list-style-type: none"> • Ensure GROUP SELECT SWITCH to desired group. • Ensure SINGLE SELECT SWITCH to desired rod. • Ensure desired rod CONTROL ON light is ON. (PI panel) (not critical) <p><u>STANDARD:</u> Rotate the GROUP SELECT SWITCH to group 2. Rotate the SINGLE SELECT SWITCH to rod 6. Determine that Rod Group 2 Rod 6 CONTROL ON light is ON by observing light is LIT on the PI panel..</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>NOTE: When LATCH AUTO is selected, the following automatically occurs:</p> <ul style="list-style-type: none"> • Rod inserts to latch rod (CRD TRAVEL "In" light ON) • Rod withdraws to test for latching (CRD TRAVEL "Out" light ON) • Rod inserts (CRD TRAVEL "In" light ON) • RPI resets. </div> <p><u>STEP 4:</u> Step 2.4 IF affected rod is fully inserted, perform Auto Latch & PI Alignment, as follows: Select LATCH AUTO. WHEN Auto Latch is complete: (not critical)</p> <ul style="list-style-type: none"> • Verify LATCH AUTO is OFF. • Ensure desired rod CONTROL ON light is ON. (PI panel) • Ensure desired rod API/RPI indications agree. (PI Panel) <p>Select FAULT RESET.</p> <p><u>STANDARD:</u> Depress the LATCH AUTO pushbutton and verify that the backlight is LIT. Observe AUTO LATCH sequence and then depress the FAULT RESET pushbutton.</p> <ul style="list-style-type: none"> • Rod inserts to latch rod (CRD TRAVEL "In" light ON) • Rod withdraws to test for latching (CRD TRAVEL "Out" light ON) • Rod inserts (CRD TRAVEL "In" light ON) • RPI resets. <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>CAUTION:</p> <ul style="list-style-type: none"> • If rod is known to have been dropped/misaligned for less than 24 hours, rod can be withdrawn at 30 in./min. (RUN Speed). (R.M.) • If rod has been dropped/misaligned for greater than 24 hours, rod can be withdrawn in 10% withdrawal increments spaced 30 min. apart at 30 in./min. (RUN Speed). <p><u>STEP 5:</u> Step 2.5.1 Perform the following until affected rod is realigned with group: (R.M.)</p> <ul style="list-style-type: none"> • Begin withdrawal of affected rod. <p><u>STANDARD:</u> Begin control rod withdrawal of affected rod by using the “joy stick”. Verify outward motion by observing rod position on the OAC and/or the PI panel.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 2.5.2 IF Power/Tave starts increasing:</p> <ul style="list-style-type: none"> • Stop affected rod withdrawal. • Ensure SEQ is ON. • Ensure Regulating Rod Group CONTROL ON lights are ON. (PI panel) (not critical) • Insert Regulating Rods to stop Power/Tave increase. • Ensure SEQ OR is ON. • Ensure affected rod CONTROL ON light is ON. (PI panel) (not critical) <p><u>STANDARD:</u> Monitor reactor power, if Power/Tave starts increasing:</p> <ul style="list-style-type: none"> • Stop affected rod withdrawal. • Depress the SEQ pushbutton and verify light is ON. • Verify Regulating Rod Group CONTROL ON lights are ON. (PI panel) • Insert Regulating Rods to stop Power/Tave increase. • Depress the SEQ pushbutton and verify light is ON. • Ensure affected rod CONTROL ON light is ON. (PI panel) <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 7:</u> Step 2.5.3 Repeat steps 2.5.1 & 2.5.2 as required.</p> <p><u>STANDARD:</u> Steps 2.5.1 & 2.5.2 are repeated as required.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 2.5.4 IF affected rod is in Group with OUT LIMIT, continue rod withdrawal until CRD TRAVEL "Out" light OFF.</p> <p><u>STANDARD:</u> Verify CRD TRAVEL "Out" light OFF</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 2.5.5 IF affected rod is in Group NOT at OUT LIMIT, continue rod withdrawal until affected rod aligned with group.</p> <p><u>STANDARD:</u> Determine that the Group is at the OUT LIMIT observing OUT LIMIT light LIT on the Diamond panel.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 10: Step 2.6</p> <p>WHEN affected rod is aligned with group, perform the following:</p> <ul style="list-style-type: none"> • Select FAULT RESET. • Ensure ASYM FAULT BYPASS is OFF. • Ensure SEQ is ON. • Ensure GROUP SELECT SWITCH to OFF. • Ensure SINGLE SELECT SWITCH to ALL. <p>STANDARD: WHEN affected rod is aligned with group, perform the following:</p> <ul style="list-style-type: none"> • Depress the FAULT RESET pushbutton. • Depress the ASYM FAULT BYPASS pushbutton and verify light is OFF. • Depress the SEQ pushbutton and verify the light is ON. • Rotate the GROUP SELECT SWITCH to OFF. • Rotate the SINGLE SELECT SWITCH to ALL. <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>NOTE: Diamond Control station can be placed in auto anytime provided neutron error is within $\pm 1.0\%$, auto power available, and Safety Groups are at OUT LIMIT on Diamond.</p> </div> <p>STEP 11: Step 2.7</p> <p>Ensure ICS back to Automatic Control:</p> <ul style="list-style-type: none"> • Ensure Diamond in AUTO. • Ensure A FDW MASTER to AUTO. • Ensure B FDW MASTER to AUTO. <p><u>STANDARD:</u> Place the ICS back to Automatic Control:</p> <ul style="list-style-type: none"> • Depress the AUTO pushbutton on the Diamond. • Select AUTO on the A and B FDW MASTERS <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	ICS is required to be in MANUAL for this JPM.
2	Step is necessary to allow the operator to withdraw the dropped rod.
3	Step is necessary to allow the operator to withdraw the dropped rod.
4	Step is required to latch the control rod.
5	Step is necessary to allow the operator to withdraw the dropped rod.
6	Step is necessary to prevent power increase above the limit of 60%.
8	Step is necessary to ensure rod is fully withdrawn.
10	Step is necessary to reset the CRD system.

**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

INITIAL CONDITIONS:

Unit #1 dropped a control rod in Group 2 approximately one hour ago and the unit is stable at 55%.

The Subsequent Actions of AP/15, DROPPED CONTROL RODS, have been completed through step 4.10.

Shutdown Margin calculation has been run to verify that an adequate SDM exists.

Systems Duty Engineer has been notified and no special maneuvering instructions are required.

ICS is required to be placed in MANUAL for the control rod recovery.

Enclosure 4.6 of OP/0/A/1105/019 has been completed up to step 2.1.

INITIATING CUE:

The Control Room SRO informs you that the problem has been corrected and that recovery of the dropped rod can now begin.

Use enclosure 4.6 of OP/0/A/1105/019 beginning at step 2.1.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

CRO-092

**SWAPPING LPI MODES
LPI HIGH PRESSURE MODE TO LPI NORMAL MODE**

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Swapping LPI Modes - LPI High Pressure Mode to LPI Normal Mode

Alternate Path:

No

Facility JPM #:

NEW

K/A Rating(s):

System: 005
K/A: A4.01
Rating: 3.6/3.4

Task Standard:

Swap LPI from Series Mode to Normal Mode by procedure.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

OP/1/A/1104/004, Enclosure 4.15 (Swapping LPI Modes - LPI High Pressure Mode to LPI Normal Mode)
OP/1/A/1104/004, Enclosure 4.45 (Controlling LPI Cooler Outlet Temperature)

Validation Time: 20 minutes

Time Critical: NO

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____

NAME

_____/_____

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** SNAP 216
2. Place simulator to **RUN**

Tools/Equipment/Procedures Needed:

OP/1/A/1104/004, Enclosure 4.15 (Swapping LPI Modes - High Pressure Mode to LPI Normal Mode)

OP/1/A/1104/004, Enclosure 4.45 (Controlling LPI Cooler Outlet Temperature)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Unit shutdown in progress

INITIATING CUES:

The Control Room operator directs you to perform OP/1/A/1104/004, Enclosure 4.15 (Swapping LPI Modes - LPI High Pressure Mode to LPI Normal Mode) beginning at Step 2.2.

START TIME: _____

<p><u>STEP 1:</u> Step 2.2 Position:</p> <ul style="list-style-type: none"> • Open 1LP-5 (1A LPI PUMP SUCTION). • Open 1LP-6 (1C LPI PUMP SUCTION (A HDR)). • Open 1LP-7 (1C LPI PUMP SUCTION (B HDR)). • Open 1LP-8 (1B LPI PUMP SUCTION). <p><u>STANDARD:</u> Remove the cover from the switches for the following valves and OPEN them by placing their respective switches in the open position.</p> <ul style="list-style-type: none"> • 1LP-5 (1A LPI PUMP SUCTION) Verify red light illuminates and green light goes off. • 1LP-6 (1C LPI PUMP SUCTION (A HDR)) Verify red light illuminates and green light goes off. • 1LP-7 (1C LPI PUMP SUCTION (B HDR)) Verify red light illuminates and green light goes off. • 1LP-8 (1B LPI PUMP SUCTION) Verify red light illuminates and green light goes off. <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.3 Position:</p> <ul style="list-style-type: none"> • Open 1LP-4 (Return Manual Block). (A-61) <p><u>STANDARD:</u> Dispatch an NEO to open 1LP-4.</p> <p>Simulator operator: Open 1LP-4 by using the Valve program and using time compression inform the candidate that the valves are open.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 3: Step 2.4 Position:</p> <ul style="list-style-type: none"> • Close 1LP-73 (1B LPI Cooler Switchover Disch Block). (A-1-108) • Close 1LP-74 (B Clr Disch Blk To A Pmp). (A-61) • Close 1LP-75 (1B LPI Cooler Disch Block To 1C LPI Pump). (A-61) <p>STANDARD: Dispatch an NEO to CLOSE:</p> <ul style="list-style-type: none"> • 1LP-73 (1B LPI Cooler Switchover Disch Block). (A-1-108) • 1LP-74 (B Clr Disch Blk To A Pmp). (A-61) • 1LP-75 (1B LPI Cooler Disch Block To 1C LPI Pump). (A-61) <p>Simulator operator: CLOSE 1LP-73, 1LP-74, and 1LP-75 by using the Valve program and using time compression inform the candidate that the valves are CLOSED.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4: Step 2.5 Close 1LP-14 (1B LPI Cooler Outlet)</p> <p>STANDARD: Remove the cover from the switch 1LP-14 and CLOSE it by placing the switch in the close position.</p> <p>Note: Valve has a long stroke time (1:50 sec)</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 2.6 Record 1A LPI cooler outlet temperature _____°F.</p> <p>STANDARD: Located the 1A LPI cooler outlet temperature indicator located on 1UB2 and record 1A LPI cooler outlet temperature on the procedure.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 6:</u> Step 2.7 Open 1LP-10 (1C LPIP DISCH TO 1B LPI HDR).</p> <p><u>STANDARD:</u> Open 1LP-10 located on 1UB2 by taking the switch to the OPEN position and verifying the red OPEN light illuminates and the green CLOSE light goes out.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>	
<p><u>STEP 7:</u> Step 2.8 Open 1LP-14 (1B LPI COOLER OUTLET).</p> <p><u>STANDARD:</u> Open 1LP-14 located on 1UB2 by taking the switch to the OPEN position and verifying the red OPEN light illuminates and the green CLOSE light goes out.</p> <p>Note: Valve has a long stroke time (1:50 sec)</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>	
<table border="1" data-bbox="129 1207 1209 1249"> <tr> <td>NOTE: Do NOT exceed 6000 gpm LPSW flow per cooler.</td> </tr> </table> <p><u>STEP 8:</u> Step 2.9 Adjust LPSW flow to 1B LPI Coolers per Enclosure 4.45 "Controlling LPI Cooler Outlet Temperature" to match 1B DH Cooler outlet temperature to 1A DH Cooler outlet temperature.</p> <p><u>STANDARD:</u> Refer to Enclosure 4.45 "Controlling LPI Cooler Outlet Temperature" and adjust LPSW flow to 1B LPI Coolers by positioning 1LPSW-252 Controller Setpoint to match 1B DH Cooler outlet temperature to 1A DH Cooler outlet temperature.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	NOTE: Do NOT exceed 6000 gpm LPSW flow per cooler.	<p>___ SAT</p> <p>___ UNSAT</p>
NOTE: Do NOT exceed 6000 gpm LPSW flow per cooler.		

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	Step is required to complete the required valve lineup.
2	Step is required to complete the required valve lineup.
3	Step is required to complete the required valve lineup.
6	Step is required to complete the required valve lineup.
7	Step is required to complete the required valve lineup.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Unit shutdown in progress

INITIATING CUES:

The Control Room operator directs you to perform OP/1/A/1104/004, Enclosure 4.15
(Swapping LPI Modes - LPI High Pressure Mode to LPI Normal Mode) beginning at Step 2.2.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**CRO-205
Respond to a Leak On the 1A HPI Injection Header**

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Respond to a Leak on the 1A HPI Injection Header

Alternate Path:

Yes

Facility JPM #:

New

K/A Rating(s):

System: APE022
K/A: AA1.01
Rating: 3.4/3.3

Task Standard:

Secure the "A" HPI pump, determine that the "B" HPI pump has failed and place the "C" HPI pump in service supplying normal makeup and RCP seal injection.

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

AP/14 (Loss of Normal HPI Makeup or Letdown)

Validation Time: 20 minutes

Time Critical: NO

Candidate: _____
NAME

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____
NAME

SIGNATURE / DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 214
2. **IMPORT** files for CRO-205
3. Go to **RUN**

Tools/Equipment/Procedures Needed:

AP/14 (Loss of Normal HPI Makeup and/or RCP Seal Injection)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Stat Alarm 1SA8/A9 (RM AREA MONITOR RADIATION HIGH) in alarm.

SRO entered AP/18 (Abnormal Release of Radioactivity).

NEO reports to the Control Room that there is leak on the 1A HPI Injection Header.

The leak is in the Unit 1 & 2 HPI Pump room.

INITIATING CUES:

The SRO directs you to perform AP/14 (Loss of Normal HPI Makeup and/or RCP Seal Injection).

START TIME: _____

<p><u>STEP 1:</u> Step 3.1 IAAT RCP seal injection flow is lost, AND Component Cooling is lost, THEN perform the following:</p> <ul style="list-style-type: none"> • Trip the Rx. • Stop all RCPs. • Initiate AP/25 (SSF EOP). <p><u>STANDARD:</u> Candidate verifies RCP Seal Injection does exist by observing “Seal Inlet Hdr Flow” gauge on 1UB1. Step does not apply.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 3.2 IAAT loss of suction to operating HPI pumps is indicated:</p> <ul style="list-style-type: none"> • Motor amps low or cycling • Discharge pressure low or cycling • Abnormal LDST level trend <p>THEN GO TO Step 3.3.</p> <p><u>STANDARD:</u> Candidate determines a loss of suction does NOT exist and refers to the RNO column which directs to Step 4.7</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 4.7 Announce AP entry using PA System</p> <p><u>STANDARD:</u> Candidate announces AP entry using the plant phone.</p> <p><u>COMMENTS:</u></p>	

<p><u>STEP 4:</u> Step 4.8 Verify any HPI pump operating.</p> <p><u>STANDARD:</u> Candidate verifies 1A HPIP operating by observing red ON light LIT and pump amps (~ 45) on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> Step 4.9 Verify RCP seal injection or HPI makeup line leak indicated by any of the following: GO TO Step 4.133</p> <p><u>STANDARD:</u> Based on initial conditions, candidate verifies 1A HPI header leak. Proceeds to step 4.133.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 4.133 Start the standby HPI pump.</p> <p><u>STANDARD:</u> Candidate attempts to start the 1B HPIP.</p> <p>Note: 1B HPIP will not start.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p style="text-align: center;">NOTE</p> <p>When 1HP-115 is closed and 1B HPI Pump stopped, indications for HPI header pressure in the Control Room (gauge and computer) are lost.</p>	<p style="text-align: center;">CRITICAL STEP</p>
<p><u>STEP 7:</u> Step 4.134 Close 1HP-115.</p> <p><u>STANDARD:</u> Candidate removes the switch cover and closes 1HP-115 located on 1UB1.</p> <p>Note: Seal injection flow will be lost when valve is closed.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 8:</u> Step 4.135 IAAT LDST level approaches 40", THEN open 1HP-24 or 1HP-25.</p> <p><u>STANDARD:</u> Candidate monitors LDST level using level gauges located on 1UB1 or the OAC.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 9:</u> Step 4.136 Verify adequate makeup to maintain Pzr level.</p> <p><u>STANDARD:</u> Candidate checks makeup flow and determines that makeup is adequate.</p> <p>Note: Candidate may determine that makeup flow is not adequate because PZR level is decreasing and perform the RNO to close 1HP-5.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

<p><u>STEP 10:</u> Step 4.137 Verify leak is contained in RB.</p> <p><u>STANDARD:</u> Based on the initial conditions, candidate determines leak in NOT in the RB and performs RNO step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 4.137 RNO Notify RP to survey for leak outside RB</p> <p><u>STANDARD:</u> Notifies RP to survey outside the RB.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 4.138 Verify leak exists on 1A HPI injection header.</p> <p><u>STANDARD:</u> Based on initial conditions, candidate determines leak IS on the 1A HPI injection header.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Step 4.139 Stop 1A HPI PUMP.</p> <p><u>STANDARD:</u> Candidate stops the 1A HPIP</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 14:</u> Step 4.140 Start the 1B HPI PUMP. GO TO Step 4.142.</p> <p><u>STANDARD:</u> 1B HPIP will not start and the candidate performs the RNO step: GO TO Step 4.142</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 4.142 Close 1HP-27.</p> <p><u>STANDARD:</u> Candidate closes 1HP-27 located on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Step 4.143 Close 1HP-31</p> <p><u>STANDARD:</u> Candidate closes 1HP-31 by taking the H/A station to HAND and using the toggle switch. Located on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 17:</u> Step 4.144 Locally perform the following:</p> <ul style="list-style-type: none">• Open 1HP-116 (1B & 1C HPI PUMPS DISCHARGE HDR SEPARATION) (Remote operator on HPI hatch area wall at col. R-72, SE of 1B HPI Pump)• At valve, ensure 1HP-116 (1B & 1C HPI PUMPS DISCHARGE HDR SEPARATION) indicates open (2' SE 1B HPI Pump, 10' up). <p><u>STANDARD:</u> Candidate directs NEO to open 1HP-116.</p> <p>Simulator operator: When candidate notifies NEO to open 1HP-116, use time compression, open the valve using the valves program and then inform the student that 1HP-116 is open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 18:</u> Step 4.145 Start 1C HPI PUMP.</p> <p><u>STANDARD:</u> Candidate starts the 1C HPIP by taking switch to ON and verifying pump starts by observing Red ON light is LIT and pump amps increase. Located on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p style="text-align: center;">NOTE</p> <p>Continuous flow in the 1B Injection nozzles is more desirable than intermittent flow due to thermal stress. Manual operation of 1HP-409 (1B Injection Bypass) from the Penetration Room may be required.</p> <p><u>STEP 19:</u> Step 4.146 Perform the following as necessary to control Pzr level:</p> <ul style="list-style-type: none">• Adjust letdown.• Throttle 1HP-409 to makeup. <p><u>STANDARD:</u> Candidate restores Pzr level by throttling 1HP-409 and / or adjusting letdown using 1HP6 and / or 1HP7.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 20:</u> Step 4.147 Verify \approx 8 gpm/RCP seal injection flow.</p> <p><u>STANDARD:</u> Candidate determines that no Seal injection flow exists by observing seal injection flow gauge located on 1UB1. Proceeds to RNO step</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 21:</u> Step 4.147 RNO</p> <ul style="list-style-type: none">• Slowly open 1HP-31 in small increments until ≈ 8 gpm/RCP is achieved.• Open the following: (not critical)<ul style="list-style-type: none">➤ 1HP-228➤ 1HP-226➤ 1HP-232➤ 1HP-230• Open 1HP-21. (not critical)• Place 1HP-31 in AUTO. (not critical) <p><u>STANDARD:</u> Candidate opens 1HP-31 until ~ 32 gpm total seal flow. Candidate verifies 1HP-228, 226, 232, 230 are open on 1VB3. Candidate verifies 1HP-21 is open on the RZ module located on 1VB2. Places 1HP-31 in AUTO.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>
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STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
7	Step is required to isolate the leak.
13	Step is required to isolate the leak.
15	Step is required prevent injecting through "B" injection header.
16	Step is required prevent shocking the RCP seals.
18	Step is required to starts the 1C HPIP to restores makeup and seal injection.
21	Step is required to re-establishes seal injection.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Stat Alarm 1SA8/A9 (RM AREA MONITOR RADIATION HIGH) in alarm.

SRO entered AP/18 (Abnormal Release of Radioactivity).

NEO reports to the Control Room that there is leak on the 1A HPI Injection Header.

The leak is in the Unit 1 & 2 HPI Pump room.

INITIATING CUES:

The SRO directs you to perform AP/14 (Loss of Normal HPI Makeup and/or RCP Seal Injection).

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

CRO-300

Perform Required Actions for RCS Pressure \leq 550 psig

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Perform Required Actions for RCS Pressure ≤ 550 psig

Alternate Path:

Yes

Facility JPM #:

CRO-066

K/A Rating(s):

System: BWEPE14

K/A: EA1.1

Rating: 3.8/3.6

Task Standard:

Candidate performs steps in EOP enclosure 5.1 (ES Actuation) to align and start the 1C LPIP.

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

EP/1/A/1800/001 (Emergency Operating Procedure)

Validation Time: 13 minutes

Time Critical: NO

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____

NAME

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 215
2. **IMPORT** files for CRO-300
3. Go to **RUN**

Tools/Equipment/Procedures Needed:

EOP Enclosure 5.1, ES Actuation

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

LOCA in progress

ES channels 1 and 2 actuated on Low RCS Pressure and EOP Enclosure 5.1, ES Actuation, has been completed up to **WHEN** Step 121.

Additional ES channels have just actuated

RCS is saturated and RCPs are off

Rule 2 is complete

INITIATING CUES:

The SRO directs you to continue Enclosure 5.1 (ES Actuation) beginning at Step 121.

START TIME: _____

<p><u>STEP 1:</u> IAAT step 3 applies. IAAT additional ES actuation setpoints are exceeded, THEN perform Steps 1 - 2.</p> <p><u>STANDARD:</u> Candidate should recognize that additional ES channels have actuated and perform IAAT step 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> IAAT Step 3 IAAT additional ES actuation setpoints are exceeded, THEN perform Steps 1-2.</p> <p>Step 1 Determine all ES channels that should have actuated based on RCS pressure and RB pressure:</p> <p>Step 2 Verify all ES digital channels associated with actuation setpoints have actuated.</p> <p><u>STANDARD:</u> Candidate should recognize that additional ES actuation setpoints are exceeded and perform Step 1-2. Candidates verifies ES Channels 1-8 have initiated.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> IAAT Step 71 applies Candidate goes to IAAT Step 71 IAAT ES Channels 3 & 4 are actuated, THEN GO TO Step 72.</p> <p><u>STANDARD:</u> Candidate should determine that IAAT step 71 applies.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 4:</u> Step 72</p> <p>Place the following in manual control:</p> <ul style="list-style-type: none"> • 1A LPI PUMP • 1LP-17 • 1B LPI PUMP • 1LP-18 <p><u>STANDARD:</u> Place the above components in MANUAL at the RZ modules by depressing the MANUAL pushbutton. Located on 1VB2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> <p>CAUTION</p> <p>LPI pump damage may occur if operated in excess of 30 minutes against a shutoff head.</p> </div> <p><u>STEP 5:</u> Step 73</p> <p>IAAT any LPI pump is operating against a shutoff head, THEN at the CR SRO's discretion, stop affected LPI pumps.</p> <p><u>STANDARD:</u> Candidate goes to UB1 and determines that LPIPs are not operating.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 74</p> <p>IAAT RCS pressure is < LPI pump shutoff head, THEN perform Steps 75 - 76.</p> <p><u>STANDARD:</u> Candidate verifies that RCS pressure is < LPIP shutoff head. (< 200 psig)</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 7:</u> Step 75 Perform the following:</p> <ul style="list-style-type: none"> • Open 1LP-17. • Start 1A LPI PUMP. <p><u>STANDARD:</u> Candidate attempts to start the 1A LPIP and determines that it will not start, then proceeds to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 75 RNO</p> <ul style="list-style-type: none"> • Stop 1A LPI PUMP. • Close 1LP-17. <p><u>STANDARD:</u> Candidate verifies that the A LPIP is NOT operating. Closes 1LP-17 located on 1UB2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 76 Perform the following:</p> <ul style="list-style-type: none"> • Open 1LP-18. • Start 1B LPI PUMP. <p><u>STANDARD:</u> Candidate attempts to start the 1A LPIP and determines that it will not start, then proceeds to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 10:</u> Step 76 RNO</p> <ul style="list-style-type: none"> • Stop 1B LPI PUMP. • Close 1LP-18. <p><u>STANDARD:</u> Candidate verifies that the B LPIP is NOT operating. Closes 1LP-18 located on 1UB2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 77</p> <p>IAAT 1A and 1B LPI PUMPs are off / tripped, AND all the following exist:</p> <ul style="list-style-type: none"> • RCS pressure < LPI pump shutoff head • 1LP-19 closed • 1LP-20 closed <p>THEN perform Steps 78 - 79.</p> <p><u>STANDARD:</u> Candidate recognizes that conditions for IAAT step 77 are met. Then performs Steps 78 - 79.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 12:</u> Step 78 Open the following:</p> <ul style="list-style-type: none"> • 1LP-9 • 1LP-10 • 1LP-6 • 1LP-7 • 1LP-17 • 1LP-18 • 1LP-21 (already open) (not critical) • 1LP-22 (already open) (not critical) <p><u>STANDARD:</u> Candidate opens or verifies open the above valves located on 1UB2.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL TASKS</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Step 79 Start 1C LPI PUMP.</p> <p><u>STANDARD:</u> Candidate starts the 1C LPIP by rotating switch to the ON position and verify LPI flow and pump amps. Located on 1UB2.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL TASKS</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
12	This step is required to align valves for 1C LPI pump start.
13	This step is required to start the 1C LPI pump.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

LOCA in progress

ES channels 1 and 2 actuated on Low RCS Pressure and EOP Enclosure 5.1, ES Actuation, has been completed up to **WHEN** Step 121.

Additional ES channels have just actuated

RCS is saturated and RCPs are off

Rule 2 is complete

INITIATING CUES:

The SRO directs you to continue Enclosure 5.1 (ES Actuation) beginning at Step 121.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**CRO-401
FOLLOWING A LOSS OF ALL FDW, FEED A DRY SG
WITH THE TDEFDWP**

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Following a loss of all FDW, Feed a Dry SG with the TD EFDWP

Alternate Path:

Yes

Facility JPM #:

new

K/A Rating(s):

System: APE-054

K/A: AA2.04

Rating: 4.2/4.3

Task Standard:

EFDW flow is established to the both SGs

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

EOP Rule 3, (Loss of Main or Emergency FDW)

EOP Rule 7, (SG Feed Control)

EOP Enclosure 5.27, (Alternate Methods for Controlling EFDW Flow)

Validation Time: 15 minutes

Time Critical: NO

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____

NAME

_____/_____

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** Snap 217
2. **IMPORT** files for CRO-401
3. Go to **RUN**

Tools/Equipment/Procedures Needed:

EOP Rule 3, (Loss of Main or Emergency FDW)

EOP Rule 7, (SG Feed Control)

EOP Enclosure 5.27, (Alternate Methods for Controlling EFDW Flow)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Loss of Main and Emergency Feedwater has occurred

RULE 3 is in progress and complete up to Step 20

The TDEFDW pump has just been locally started.

INITIATING CUES:

The SRO directs complete RULE 3 beginning at Step 20.

START TIME: _____

<p><u>STEP 1:</u> Rule 3 Step 20 WHEN either of the following exists:</p> <ul style="list-style-type: none"> • Operator is in position at 1FDW-313 • Unit 1 TD EFDW PUMP has been manually started <p>THEN continue.</p> <p>Cue: Notify candidate that Unit 1 TD EFDWP is reset and available.</p> <p><u>STANDARD:</u> Candidate recognizes that WHEN step has been met.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Rule 3 Step 21 IAAT an operator is in position at 1FDW-313, AND Unit 1 TD EFDW PUMP is NOT operating, THEN notify the operator to open the following:</p> <ul style="list-style-type: none"> • 1FDW-313 (1A EFDW LINE DISCH TO 1A S/G X-CONN) • 1FDW-314 (1B EFDW LINE DISCH TO 1B S/G X-CONN) <p>RNO: GO TO Step 22</p> <p><u>STANDARD:</u> Candidate recognizes that an operator is in NOT in position at 1FDW-313 goes to the RNO step. GO TO Step 22.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Rule Step 22 Verify either of the following exists:</p> <ul style="list-style-type: none"> • HPI Forced Cooling is maintaining core cooling • CBP feed providing SG feed <p><u>STANDARD:</u> Candidate recognizes that neither of the above conditions are met and performs the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 4:</u> Rule 3 Step 22 RNO</p> <ol style="list-style-type: none">1. Establish 100 gpm to an available intact SG.2. WHEN heat transfer is observed, THEN feed and steam SG to stabilize Tc.3. IF second SG is intact and available to feed, THEN perform the following:<ul style="list-style-type: none">• Establish 100 gpm to second SG.• WHEN heat transfer is observed, THEN feed and steam both SGs to stabilize Tc.4. IF Tc > 550 °F, THEN initiate cool down to ≤ 550°F by feeding and steaming intact SGs at a rate that prevents RCS saturation using either of the following:<ul style="list-style-type: none">• TBVs• ADVs5. Notify CR SRO of the following:<ul style="list-style-type: none">• SG feed status.• Rule 3 actions are continuing.6. GO TO Step 24. <p><u>STANDARD:</u> Candidate recognizes 1FDW-315 will NOT control and uses 1FDW-316 to stabilize RCS Tc by adjusting FDW flow rate along with TBV position. Candidate initiates cooldown to < 550 °F by slowly increasing FDW and adjusting TBV position.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
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<p><u>STEP 5:</u> Rule 3 Step 24</p> <p>IAAT both of the following exist:</p> <ul style="list-style-type: none"> • An EFDW control valve will NOT control in AUTO • The same EFDW control valve will NOT respond in MANUAL <p>THEN perform Steps 25 and 26.</p> <p><u>STANDARD:</u> Determines that 1FDW-315 is NOT controlling properly (1A SG level is < 30" and decreasing). Attempts to take MANUAL control of 1FDW 315 (which will not work). Concludes that 1FDW-315 has failed closed</p> <p>Performs Steps 25 & 26</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Rule 3 Step 25</p> <p>Notify CR SRO that Encl 5.27 (Alternate Methods for Controlling EFDW Flow) is being initiated.</p> <p><u>STANDARD:</u> Candidate notifies SRO of Encl 5.27 initiation.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Rule 3 Step 26</p> <p>Initiates Enclosure 5.27</p> <p><u>STANDARD:</u> Removes Encl. 5.27 from EOP and initiates.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 8:</u> Encl 5.27: Step 1 Identify the failure: 1FDW-315 has Failed Closed [GO TO Step 2]</p> <p><u>STANDARD:</u> Candidate determines the next procedural step from table in Step 1. Proceeds to step 2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Encl 5.27: Step 2 Verify 1A MD EFDWP is operating</p> <p><u>STANDARD:</u> Candidate determines that 1A MD EFDWP is operating is NOT operating and performs the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Encl 5.27: Step 2 RNO</p> <ol style="list-style-type: none"> 1. IF 1 TD EFDW PUMP can be used to feed SGs, THEN dispatch an operator to locally open 1FDW-94 2. IF EFDW is being supplied from an alternate unit, THEN perform the following: <ul style="list-style-type: none"> • Notify SRO that the startup path CANNOT be used. • EXIT this enclosure. <p><u>STANDARD:</u> Candidate determines that 1 TD EFDWP can be used to feed SGs and dispatches an operator to open 1FDW-94. Determine that RNO step 2 does not apply and continue to Step 3.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 11:</u> Encl 5.27: Step 3 Stop the 1 A MD EFDWP.</p> <p><u>STANDARD:</u> Candidate determines that the 1 A MD EFDWP is NOT operating and continues to step 4.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Encl 5.27: Step 4 Place 1 TD EFDW Pump in PULL TO LOCK</p> <p><u>STANDARD:</u> Candidate places the U1 TD EFDW Pump in PULL to LOCK on 1UB1</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Encl 5.27: Step 5 Place 1FDW-35 in HAND and set demand to 0%</p> <p><u>STANDARD:</u> Candidate places 1FDW-35 in HAND and uses toggle switch to reduce demand to 0% on 1UB1</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Encl 5.27: Step 6 Close 1FDW-33</p> <p><u>STANDARD:</u> Candidate closes 1FDW-33 (SU Control Block Valve) on 1UB1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 15:</u> Encl 5.27: Step 7 Verify 1A MD EFDWP will be used.</p> <p><u>STANDARD:</u> Candidate determines that the 1A MD EFDWP will NOT be used. Perform the RNO step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Encl 5.27: Step 7 RNO GO TO Step 9</p> <p><u>STANDARD:</u> Candidate goes to step 9.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u> Encl 5.27: Step 9 Verify 1FDW-36 closed Verify 1FDW-38 open</p> <p><u>STANDARD:</u> Candidate locates valves on Control Board 1VB3 Verifies 1FDW-36 closed Verifies 1FDW-38 open</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 18:</u> Encl 5.27: Step 10 Start 1A MD EFDWP</p> <p>WHEN 1FDW-94 is locally opened, THEN start TD EFDW PUMP.</p> <p><u>STANDARD:</u> Candidate determines that the 1A MD EFDWP will NOT start and when notified that 1FDW-94 is open, starts TD EFDWP.</p> <p>Cue: Simulator Operator will notify candidate that 1FDW-94 is OPEN.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="142 688 1219 877" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">NOTE:</p> <p>Flow from the TD EFDWP through a S/U control valve should be read on the FDW SU FLOW gauge.</p> <p>Flow from MD EFDWP through a S/U control valve should be read on the MDEFWP DISCH FLOW gauge.</p> </div> <p><u>STEP 19:</u> Encl 5.27: Step 11 Verify either of the following exists:</p> <ul style="list-style-type: none"> • HPI Forced Cooling is maintaining core cooling • CBP Feed providing SG feed <p><u>STANDARD:</u> Candidate determines that neither condition is met and goes to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 20:</u> Encl 5.27: Step 11 RNO</p> <p>IF any SG is being fed, THEN perform the following:</p> <ul style="list-style-type: none">• Throttle 1FDW-35 to establish 100 gpm.• Throttle 1FDW-35 to obtain desired SG level per Rule 7 (SG Feed Control) (not critical) <p>Notify CR SRO of SG Feed Status (not critical)</p> <p><u>STANDARD:</u> Candidate throttles 1FDW-35 to attain ~ 100 gpm flow initially on MD EFWP DISCH FLOW gauge, then throttles 1FDW-35 as necessary to establish ~ 25" XSUR (per Rule 7 table 4)</p> <p>Rule 7 Table 4 specifies the level to establish when using EFDWP is 30" (use MFDW setpoint if feeding via S/U CVs). The MFDW setpoint (i.e. when using the S/U CVs) is 25".</p> <p>Note: The candidate does not need to establish this level to complete the JPM. 1FDW-315 must be open and SG level increasing.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
---	---

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
4	This step is required to initiate EFDW flow to the B SG.
10	This step is required to align the TD EFDWP to the S/U header.
12	This step is required to ensure the EFDW valves will operate.
18	This step is required to start the Unit 1 TD EFDWP.
20	This step is required to establish flow to the 1A SG.

**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

INITIAL CONDITIONS:

Loss of Main and Emergency Feedwater has occurred
RULE 3 is in progress and complete up to Step 20
The TDEFDW pump has just been locally started.

INITIATING CUES:

The SRO directs complete RULE 3 beginning at Step 20.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

CRO-900

Release GWD Tank

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Release GWD Tank

Alternate Path:

No

Facility JPM #:

NEW

K/A Rating(s):

System: 071

K/A: A4.26

Rating: 3.1/3.9

Task Standard:

Release a GWD tank correctly using OP/1&2/A/1104/018 Encl. 4.9 (GWD Tank Release).

Preferred Evaluation Location:

Simulator In-Plant

Preferred Evaluation Method:

Perform Simulate

References:

OP/1&2/A/1104/018 Encl. 4.9 (GWD Tank Release)

Validation Time: 20 minutes

Time Critical: NO

=====

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____

NAME

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

1. **RECALL** SNAP 220
2. Go to **RUN**

Tools/Equipment/Procedures Needed:

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

Release of "B" GWD tank is desired

OP/1&2/A/1104/018, Enclosure 4.9 (GWD Tank Release) is in progress and completed up to step 2.3

INITIATING CUES:

SRO directs you to complete the release of the "B" GWD tank beginning at step 2.3 of Enclosure 4.9.

START TIME: _____

<p><u>STEP 1:</u> Step 2.3 Determine any other GWR(s) are in progress at station.</p> <p><u>STANDARD:</u> Determine that no other GWR(s) are in progress at ONS. Continue to Step 2.4</p> <p><i>Cue: No other GWRs are in progress.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.4 Ensure RIA-45 setpoints adjusted for U1&2 GWD Rank release per PT/0/A/0230/001 (Radiation Monitor Check).</p> <p><u>STANDARD:</u> Refer to PT/0/A/0230/001 (Radiation Monitor Check) and verify 1RIA-45 High and Alert Alarm setpoints using the RIA View Node.</p> <ul style="list-style-type: none">• Alert - 5.88 E4• High - 1.4 E5 <p> Continue to Step 3.1</p> <p>Note: The setpoints will not be correct and will require the candidate to reset them per PT/0230/001.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 3:</u> Step 3.1 Record background readings for 1RIA-37 & 1RIA-38 on Enclosure 4.10 "GWD Tank Sample Request".</p> <p><u>STANDARD:</u> Determine background readings for 1RIA-37 & 1RIA-38 by observing the RIA readings on the RIA View Node and record on Enclosure 4.10.</p> <p>Note: The background readings should be as follows: 1RIA-37 Background reading is: ~ 1.346 E3 cps 1RIA-38 Background reading is: ~ 1.114 E3 cps Continue to Step 3.2</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="142 827 1219 894" style="border: 1px solid black; padding: 2px;"><p>NOTE: The RIA required to terminate release (RIA within range) must be operable or two independent samples must be taken (SLC 16.11.3).</p></div> <p><u>STEP 4:</u> Step 3.2 Recommended 1RIA-37 and 38 High and Alert setpoints:</p> <ul style="list-style-type: none">• 1RIA-37 2.32 E5 cpm above background• 1RIA-38 3.13 E2 cpm above background <p><u>STANDARD:</u> Obtain this information from the sample request and record on form. Continue to Step 3.3</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

NOTE: Release setpoint = background cpm + recommend cpm above background.

CRITICAL STEP

___ SAT

___ UNSAT

STEP 5: Step 3.3
Adjust 1RIA-37 setpoints for release as follows:
3.3.1 Document 1RIA-37 setpoints PT/0/A/0230/001 (Radiation Monitor Check)
3.3.2 Perform one of the following:
A. **IF** above instrument range over-ride 1RIA-37 setpoints:
• Set 1RIA-37 Alert setpoint at zero
• Set 1RIA-37 High setpoint at zero
Or
B. **IF** required to set alarms:
• Set 1RIA-37 Alert setpoint at **2.33 E5** cpm
• Set 1RIA-37 High setpoint at **2.33 E5** cpm

STANDARD: Refer to PT/0/A/0230/001 (Radiation Monitor Check) and document setpoints.
Determine setpoints for release are NOT above instrument range and N/A step 3.3.2.
Determine required setpoints by adding background to data from the sample request and enter it in PT/0/A/0230/001 and on this form.

Continue to Step 3.4

COMMENTS:

<p><u>STEP 6:</u> Step 3.4 Adjust 1RIA-38 setpoints for release as follows: 3.3.1 Document 1RIA-37 setpoints PT/0/A/0230/001 (Radiation Monitor Check) 3.3.2 Perform one of the following: A. IF above instrument range over-ride 1RIA-38 setpoints:</p> <ul style="list-style-type: none">• Set 1RIA-38 Alert setpoint at zero• Set 1RIA-38 High setpoint at zero <p> Or</p> <p> B. IF required to set alarms:</p> <ul style="list-style-type: none">• Set 1RIA-38 Alert setpoint at 324 cpm• Set 1RIA-38 High setpoint at 324 cpm <p><u>STANDARD:</u> Refer to PT/0/A/0230/001 (Radiation Monitor Check) and document setpoints. Determine setpoints for release are NOT above instrument range and N/A step 3.3.2. Determine required setpoints by adding background to data from the sample request and enter it in PT/0/A/0230/001 and on this form.</p> <p>Continue to Step 3.5</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Step 3.5 Ensure GWR DISCHARGE FLOW CONTROL in "HAND".</p> <p><u>STANDARD:</u> Ensure GWR DISCHARGE FLOW CONTROL in "HAND" located on 1AB3.</p> <p>Continue to Step 3.6</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 8:</u> Step 3.6 Verify GWR DISCHARGE FLOW CONTROL "CLOSED"</p> <p><u>STANDARD:</u> Verify GWR DISCHARGE FLOW CONTROL CLOSED located on 1AB3. Continue to Step 3.7</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 3.7 Open GWD-100 (Decay Tanks Discharge Header Block). (A-2-209/E 13' N of Door)</p> <p><u>STANDARD:</u> Dispatch NEO to Open GWD-100 (Decay Tanks Discharge Header Block). Continue to Step 3.8</p> <p><i>Cue: Inform candidate that GWD-100 is open.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 3.8 IF releasing GWD Tank B perform the following:</p> <ul style="list-style-type: none"> • Open GWD-99 (Decay Tank 1B Discharge Block) • Place GWD-5 (B GWD TANK DISCHARGE) switch to "AUTO" <p><u>STANDARD:</u> Dispatch NEO to open GWD-99 (Decay Tank 1B Discharge Block).</p> <p><i>Cue: Inform candidate that GWD-99 is open.</i></p> <p>Located GWD-5 (B GWD TANK DISCHARGE) on 1AB3 and place switch to "AUTO" Continue to Step 3.9</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 11:</u> Steps 3.9 – 3.11 IF releasing GWD Tank B perform the following...</p> <p><u>STANDARD:</u> Determine NOT releasing GWD Tank A, C, D and N/A steps 3.8, 3.10, and 3.11. Continue to Step 3.12</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="142 667 1219 793" style="border: 1px solid black; padding: 5px;"><p>NOTE: • Station Limit release rates, per SLC 16.11, will NOT be exceeded if recommended release rates per Enclosure 4.10 "GWD Tank Sample Request" are followed. • Limit and Precautions have required approval levels for release.</p></div> <p><u>STEP 12:</u> Step 3.12 Approval granted for release.</p> <p><u>STANDARD:</u> Obtain approval for release. Continue to Step 3.13</p> <p><i>Cue: Approval is granted for release by Tracy Lemons at current Date/Time.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Step 3.13 Recommended Release Rate from Enclosure 4.10 "GWD Tank Sample Request": <u>2.94 E5</u> cfm.</p> <p><u>STANDARD:</u> Record Recommended Release Rate from Enclosure 4.10 "GWD Tank Sample Request". Continue to Step 3.14</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>NOTE:</p> <ul style="list-style-type: none"> • If U1 Penetration Room Ventilation (PRV) system is shutdown, RIA-32 U1 Penetration Room sample point does NOT sample general area air properly. • With U1 PRV system shutdown, RIA-32 sample point for U1 Penetration Room is sampling air in piping between U1 Unit Vent and PRV discharge. • RIA-32 counts may increase when selected to U1 Penetration Room while making a GWD Release. <p><u>STEP 14:</u> Step 3.14 Note on Turnover sheet that just after or during a GWD release 1SA-8 B-9 "Process Monitor Radiation High" may alarm from RIA-32 sample point selected to U1 Penetration Room.</p> <p><u>STANDARD:</u> Candidate should indicate a note should be placed on the Turnover sheet indicating that RIA-32 Penetration Room sample point may alarm when selected to U1 Penetration Room during GWD release. Continue to Step 3.15</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 3.15 Adjust GWR DISCHARGE FLOW CONTROL to obtain desired release rate.</p> <p><u>STANDARD:</u> Slowly adjust the manual loading knob to obtain the desired release rate. Continue to Step 3.16</p> <p>Note: Actual release rate will be much less than the maximum flow rate allowed by the release permit.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Step 3.16 Record "Begin GWR # _____" in Unit Log.</p> <p><u>STANDARD:</u> Candidate should indicate a Unit log entry would be made.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
2	Required to set RIA to prevent station release above limits.
5	Required to set RIA to prevent station release above limits.
6	Required to set RIA to prevent station release above limits.
9	Required to align release flow path.
10	Required to align release flow path.
15	Required to align release flow path.

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

Release of “B” GWD tank is desired

OP/1&2/A/1104/018, Enclosure 4.9 (GWD Tank Release) is in progress and completed up to step 2.3

INITIATING CUES:

SRO directs you to complete the release of the “B” GWD tank beginning at step 2.3 of Enclosure 4.9.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

NLO-010

**PLACE THE REACTOR BUILDING HYDROGEN
ANALYZER IN SERVICE**

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

PLACE THE REACTOR BUILDING HYDROGEN ANALYZER IN SERVICE

Alternate Path:

No

Facility JPM #:

NLO-010

K/A Rating(s):

System: 028
K/A: A4.03
Rating: 3.1/3.3

Task Standard:

Reactor Building Hydrogen Analyzer is placed in service by procedure within 90 minutes.

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

Enclosure 5.2, "Placing RB Hydrogen Analyzers in Service" Enclosure of EOP

Validation Time: 10 minutes

Time Critical: Yes

=====

==

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Question Grade _____ Performance Time _____

Examiner: _____

NAME

_____/_____

SIGNATURE

DATE

=====

==

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

None

Tools/Equipment/Procedures Needed:

Enclosure 5.2, "Placing RB Hydrogen Analyzers in Service" Enclosure of EP/1,2,3/A/1800/001

NOTE: Student is expected to know that this procedure is pre-staged at the Hydrogen Analyzer and be able to locate the procedure. (Not Critical)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

A LOCA has occurred on Unit ____ (specify unit). Engineered Safeguards Channels #1 and #2 have actuated. Enclosure 5.1 (ES Actuation) of the EOP is being completed. The RB Hydrogen Analyzer is aligned in the standby mode.

"B" Train of RB Hydrogen Analyzer is out of service.

INITIATING CUES:

Enclosure 5.1 (ES Actuation) of EP/___/A/1800/01 directs the operator to place the RB Hydrogen Analyzer in service. The Control Room SRO directs you to place Train "A" of the RB Hydrogen Analyzer in service on Unit_____ (specify unit) per "Placing RB Hydrogen Analyzers in Service" Enclosure of EOP.

Note: Only "A" train will be placed in service.

START TIME: _____

<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">NOTE</p> <p>Hydrogen analyzer remote control panels are located in A-6-602, Vent Equipment Rm, col Q73 West.</p> </div> <p>STEP 1: Step 1 At Unit #1 RB Containment Atmosphere Hydrogen Analyzer Train "A" Remote Control Panel, perform the following:</p> <ul style="list-style-type: none"> • Ensure POWER ON light is on. • Position H2 DUAL RANGE SW to H2 0 -10% Range. • Position FUNCTION SELECTOR switch to SAMPLE. (critical) <p>Depress the OFF button for the following:</p> <ul style="list-style-type: none"> • 1PR-83 (BYP TO POST AC 1SV220) • 1PR-86 (BYP TO POST AC 1SV221) <p>STANDARD: Red "Power On" light on remote panel is verified to be ON at the Remote RB Hydrogen Analyzer Panel (Train "A").</p> <p>H2 DUAL RANGE Sw. on the Remote Panel is verified to be positioned to the "0-10%" scale.</p> <p>FUNCTION SELECTOR SWITCH on the Remote Panel is verified to be positioned in the "SAMPLE" position.</p> <p>At the remote panel, the "OFF" button is pushed for the following valves: Train A</p> <ul style="list-style-type: none"> • PR-83 (Bypass to Post Accident Sample Panel) • PR-86 (Bypass from Post Accident Sample Panel) <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: Step 3 Notify Control Room to perform the following:</p> <ul style="list-style-type: none"> • Open 1PR-81 and 1PR-84. <p>STANDARD: Control Room personnel of affected unit are notified to open PR-81 and PR-84 (Train A) to align appropriate train of Reactor Building Hydrogen Analyzer to the Reactor Building.</p> <p>Cue: After notification has been made, indicate to student that the red OPEN indication lights for the appropriate Reactor Building Hydrogen Analyzer Isolation Valves, located at the Remote Panel, are ON.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

NOTE

When ANALYZE is selected, the indication will go up scale, possibly causing a HIGH HYDROGEN ALARM in the Analyzer Panel, the Remote Panel, and the Control Room. It should return down scale to the correct reading in \approx 3 minutes.

CRITICAL STEP

___ SAT

___ UNSAT

STEP 3: Step 4

At Unit #1 RB Containment Atmosphere Hydrogen Analyzer Remote Control Panel, perform the following:

- Position SAMPLE VALVE SEL SW to PR-71 (TOP OF CONTAINMENT SAMPLE).
- Position OFF / STANDBY /ANALYZE switch to ANALYZE.
- Depress REMOTE SELECTOR pushbutton to ensure control is from the Remote Panel.

STANDARD: SAMPLE VALVE SEL. Sw. is positioned to appropriate sample valve:

- PR-71 (Top of Containment Sample) for Train 'A'
- OFF/STANDBY/ANALYZE switch is positioned to the "ANALYZE" Mode.
- REMOTE SELECTOR Pushbutton is depressed.

CUE: After student selects "ANALYZE", indicate to him/her, using a pointing device, that the Hydrogen Concentration Meter reads approximately 3% hydrogen and that the Yellow COMMON ALARM Light and Yellow HIGH HYDROGEN ALARM Light are ON.

Next, inform student that approximately three minutes has elapsed and indicate to him/her, using a pointing device, that the Hydrogen Concentration Meter has returned to 0% hydrogen.

COMMENTS:

<p><u>STEP 4:</u> Step 6</p> <p>IAAT either RB Hydrogen Analyzer Train indicates < 2.25% Hydrogen, AND the meter reading stabilizes, THEN push the ALARM RESET pushbutton to reset the COMMON ALARM on “A” RB Hydrogen Analyzer train.</p> <p>Cue: Indicate the Hydrogen reading is ≈ 0 percent.</p> <p>Cue: Indicate to student that the Yellow Alarm Lights are out.</p> <p><u>STANDARD:</u> ALARM RESET Pushbutton is depressed.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> Step 7</p> <p>WHEN HIGH HYDROGEN alarm has been reset on A Hydrogen Analyzer Train, THEN notify Unit 1 Control Room that “A” Hydrogen Analyzer Train is in service.</p> <p><u>STANDARD:</u> Phone/radio is located and control room personnel are notified that the RB Hydrogen Analyzer is in service.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 8</p> <p>EXIT this enclosure.</p> <p><u>STANDARD:</u> Procedure is exited.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	The 3-position switch must be selected to sample.
2	Open the block valves to the hydrogen analyzer.
3	Start the Analyzer pump and the sampling process

**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

INITIAL CONDITIONS:

A LOCA has occurred on Unit ____ (specify unit). Engineered Safeguards Channels #1 and #2 have actuated. Enclosure 5.1 (ES Actuation) of the EOP is being completed. The RB Hydrogen Analyzer is aligned in the standby mode.

“B” Train of RB Hydrogen Analyzer is out of service.

INITIATING CUES:

Enclosure 5.1 (ES Actuation) of EP/___/A/1800/01 directs the operator to place the RB Hydrogen Analyzer in service. The Control Room SRO directs you to place Train “A” of the RB Hydrogen Analyzer in service on Unit_____ (specify unit) per “Placing RB Hydrogen Analyzers in Service” Enclosure of EOP.

Note: Only “A” train will be placed in service.

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**NLO-032
Align Vacuum Pumps to a Unit's Vacuum System**

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Align Vacuum Pumps to a Unit's Vacuum System

Alternate Path:

Yes

Facility JPM #:

CRO-032

K/A Rating(s):

System: APE051
K/A: G2.1.20
Rating: 4.3/4.2

Task Standard:

Vacuum pumps are aligned to designated unit

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

AP/27 (Loss of Vacuum)

Validation Time: 10 minutes

Time Critical: NO

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____

NAME

_____/_____

SIGNATURE

DATE

=====

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

None

Tools/Equipment/Procedures Needed:

1AP/27 (Loss of Vacuum) Enclosure 5.1 (Main Vacuum Pump Alignment)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

All three units are operating at 100% power. Unit 2, which is operating with a steam generator tube leak, experiences a loss of vacuum, requiring that the vacuum pumps be placed in service immediately to prevent a turbine trip on low vacuum, and subsequent loss of the turbine bypass valves.

INITIATING CUES:

A, B, and C Main Vacuum Pumps are operating.

The control room BOP directs you to perform Enclosure 5.1 (Main Vacuum Pump Alignment), of 2AP/27 and align A, B, and C vacuum pumps to Unit 2.

START TIME: _____

<p><u>STEP 1:</u> Step 1 Verify any Main Vacuum Pump is operating.</p> <p><u>STANDARD:</u> A MVP is verified to be operating.</p> <p><i>Cue: Inform candidate that each Main Vacuum is operating.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>																
<p><u>STEP 2:</u> Step 2 Verify all operating Main Vacuum Pumps seal water pressure ~ 10 psig:</p> <table border="1" data-bbox="337 886 1062 1060"> <thead> <tr> <th>Pump</th> <th>√</th> <th>Gauge</th> <th>Location</th> </tr> </thead> <tbody> <tr> <td>A</td> <td></td> <td>0LPS PG 1053</td> <td>T-1/K25, SE</td> </tr> <tr> <td>B</td> <td></td> <td>0LPS PG 1054</td> <td>T-1/K26, SE</td> </tr> <tr> <td>C</td> <td></td> <td>0LPS PG 1055</td> <td>T-1/K28, SE</td> </tr> </tbody> </table> <p><u>STANDARD:</u> Seal water pressure verified ≥ 10 psig for each Main Vacuum Pump.</p> <p>Pump A GAUGE LOCATION T-1/K25, SE Pump B GAUGE LOCATION T-1/K26, SE Pump C GAUGE LOCATION T-1/K28, SE</p> <p>Determine Pump B is < 10 psig and perform the RNO step.</p> <p><i>Cue: Inform student that A and C Main Vacuum Pump INDICATES 14 psig seal water pressure.</i></p> <p><i>Indicate that B Main Vacuum Pump INDICATES 0.0 psig seal water pressure.</i></p> <p><u>COMMENTS:</u></p>	Pump	√	Gauge	Location	A		0LPS PG 1053	T-1/K25, SE	B		0LPS PG 1054	T-1/K26, SE	C		0LPS PG 1055	T-1/K28, SE	<p>___ SAT</p> <p>___ UNSAT</p>
Pump	√	Gauge	Location														
A		0LPS PG 1053	T-1/K25, SE														
B		0LPS PG 1054	T-1/K26, SE														
C		0LPS PG 1055	T-1/K28, SE														

<p><u>STEP 3:</u> Step 2 RNO</p> <p>IF Main Vacuum Pump A seal water pressure is < 10 psig, THEN throttle LPSW-269 (A MAIN VACUUM PUMP SOLENOID OUTLET) as necessary to establish ~ 10 psig (T-1/J25/K25).</p> <p>IF Main Vacuum Pump B seal water pressure is < 10 psig, THEN throttle LPSW-273 (B MAIN VACUUM PUMP SOLENOID OUTLET) as necessary to establish ~ 10 psig (T-1/J26/K26).</p> <p>IF Main Vacuum Pump C seal water pressure is < 10 psig, THEN throttle LPSW-277 (C MAIN VACUUM PUMP SOLENOID OUTLET) as necessary to establish ~ 10 psig (T-1/J28/K28).</p> <p><u>STANDARD:</u> Locate and throttle OPEN LPSW-273 (B MAIN VACUUM PUMP SOLENOID OUTLET) as necessary to establish ~ 10 psig (T-1/J26/K26).</p> <p>Cue: <i>After candidate has throttled open on LPSW-273 indicate that Main Vacuum Pump B seal water pressure is 14 psig</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> Step 3</p> <p>Close the drain valve on all operating Main Vacuum Pumps:</p> <ul style="list-style-type: none"> • V-187 (A MAIN VACUUM PUMP DRAIN) (T-1/K25 SE) • V-188 (B MAIN VACUUM PUMP DRAIN) (T-1/K26 SE) • V-189 (C MAIN VACUUM PUMP DRAIN) (T-1/K28 E) <p><u>STANDARD:</u> The candidate locates and closes the following drain valves on the operating Main Vacuum Pumps.</p> <ul style="list-style-type: none"> • V-187 (MVP 'A' Drain) • V-188 (MVP 'B' Drain) • V-189 (MVP 'C' Drain) <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

CAUTION

Valving in a Main Vacuum Pump that is **NOT** pulling ~ 24² Hg may increase the loss of vacuum.

CRITICAL STEP

___ SAT

STEP 5:

Step 4

IAAT a Main Vacuum Pump is pulling ~ 24² Hg vacuum (gauges at T-1/K26),

THEN open the associated inlet valve:

- V-26 (A MAIN VACUUM PUMP INLET) (T-1/K26 E)
- V-28 (B MAIN VACUUM PUMP INLET) (T-1/K27 NE)
- V-30 (C MAIN VACUUM PUMP INLET) (T-1/K28/K29 E)

___ UNSAT

STANDARD:

The candidate locates and opens the following inlet valves on the operating Main Vacuum Pump.

- V-26 (Main Vacuum Pump A Inlet)
- V-28 (Main Vacuum Pump B Inlet)
- V-30 (Main Vacuum Pump C Inlet)

Cue: *When candidate locates pressure gauges, indicate a pressure reading of ≈ 26" Hg.*

COMMENTS:

<p style="text-align: center;">NOTE</p> <p>This enclosure is used to support loss of condenser vacuum on any Ocone unit. Main Vacuum Pumps may already be aligned to another unit or need to be coordinated and aligned to more than one unit.</p>	<p>CRITICAL STEP</p>
<p><u>STEP 6:</u> Step 5</p> <p> IAAT any Main Vacuum Pump is pulling ~ 24² Hg vacuum,</p> <p> AND Unit 2 requires alignment,</p> <p> THEN ensure the following are open:</p> <ul style="list-style-type: none">• V-25 (VACUUM PUMP HDR TIE TO UNITS 2/3) (T-1/J29 W)• 2V-22 (UNIT 2 VACUUM HDR TIE TO VACUUM PUMP) (T-1/J29 S)• 2V-24 (UNIT 2 VACUUM HDR TIE TO VACUUM PUMP) (T-1/J29 S) <p><u>STANDARD:</u> Locate the above valves and ensure they are OPEN to align pumps to <u>Unit #2.</u></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
3	Step is required to ensure proper operation of vacuum pumps.
4	Step is required to ensure proper operation of vacuum pumps.
5	Establish proper alignment to provide adequate suction pressure to the Main Vacuum Pumps
6	Establish proper alignment to provide suction to the Main Vacuum Pumps

CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

All three units are operating at 100% power. Unit 2, which is operating with a steam generator tube leak, experiences a loss of vacuum, requiring that the vacuum pumps be placed in service immediately to prevent a turbine trip on low vacuum, and subsequent loss of the turbine bypass valves.

INITIATING CUES:

A, B, and C Main Vacuum Pumps are operating.

The control room BOP directs you to perform Enclosure 5.1 (Main Vacuum Pump Alignment), of 2AP/27 and align A, B, and C vacuum pumps to Unit 2.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

NLO-601
Shutdown of an SSF Inverter

CANDIDATE

EXAMINER

**REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task:

Shutdown Inverter KSF1

Alternate Path:

No

Facility JPM #:

New

K/A Rating(s):

System: 062
K/A: K1.03
Rating: 3.5/4.0

Task Standard:

KSF1 inverter is removed from service by procedure.

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

OP/0/A/1600/006, Enclosure 4.2 (Shutdown of Inverter KSF1)

Validation Time: 10 minutes

Time Critical: NO

Candidate: _____
NAME

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____
NAME

SIGNATURE DATE

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS:

None

Tools/Equipment/Procedures Needed:

OP/0/A/1600/006, Enclosure 4.2 (Shutdown of Inverter KSF1)

READ TO OPERATOR

DIRECTION 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, including any required communications. I will provide initiating cues and reports on other actions when directed by you. 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:

KSF1 inverter is to be shutdown.

INITIATING CUES:

The CRSRO directs you to shutdown the KSF1 inverter using Enclosure 4.2 (Shutdown of Inverter KSF1) of OP/0/A/1600/006 (Operation of SSF KSF1/KSF2 Inverters and SSF CSF/CSFS Battery Chargers).

Hanging Red Tags is NOT required.

NO CABINET DOORS ARE TO BE OPENED FOR THIS JPM

START TIME: _____

<p><u>STEP 1:</u> Step 1.1 Inverter KSF1 is inservice.</p> <p><u>STANDARD:</u> Determine that KSF1 inverter is in service by:</p> <ul style="list-style-type: none"> • Inverter Supplying Load Light LIT • Verifying normal Current, Voltage and Frequency <p><i>Cue: If required, cue the candidate that the</i></p> <ul style="list-style-type: none"> • <i>Inverter Supplying Load Light LIT</i> • <i>Current = 60 amps</i> • <i>Voltage = 120 Volts</i> • <i>Frequency = 60 HZ</i> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 1.2 Perform the following:</p> <ul style="list-style-type: none"> • Notify Security (2222) that Security alarm KSF1TRBL should return to normal. • Ensure closed XSF-F1AR (SSF Inverter KSF1 Alternate Source Xfmr KSF1 Bkr). <p><u>STANDARD:</u> Locate a phone and call Security and inform them that alarm KSF1TRBL should return to normal.</p> <p> Locate and ensure closed XSF-F1AR (SSF Inverter KSF1 Alternate Source Xfmr KSF1 Bkr). Should be in "ON" position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 3:</u> Step 1.3 Review Limits and Precautions.</p> <p><u>STANDARD:</u> Limits and Precautions are reviewed.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> Step 2.1 Notify Security (2222) of the following:</p> <ul style="list-style-type: none"> • Inverter KSF1 is being removed from service. • Security alarms KSF1TRBL, KSF1FAIL, & KSF1ASTR will alarm. • Security alarm MSF1T will alarm when KFS1 Inverter & Manual Bypass Panels are opened. <p>_____ / _____ Person Contacted Date Time</p> <p><u>STANDARD:</u> Locate a phone and call Security and inform them:</p> <ul style="list-style-type: none"> • Inverter KSF1 is being removed from service. • Security alarms KSF1TRBL, KSF1FAIL, & KSF1ASTR will alarm. • Security alarm MSF1T will alarm when KFS1 Inverter & Manual Bypass Panels are opened. <p>Record the security officer contacted and include the date/time.</p> <p><i>Cue: Simulate security officer "Fred Jones" on the phone.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 5:</u> Step 2.2 At Inverter KSF1 , ensure:</p> <ul style="list-style-type: none"> • Sync Disconnect Switch "ON". • "IN SYNC" light ON. • "LOW ALTERNATE AC SOURCE VOLTAGE" light OFF. • "ALTERNATE AC SOURCE OFF FREQUENCY" light OFF. <p><u>STANDARD:</u> Locate Inverter KSF1 and ensure:</p> <ul style="list-style-type: none"> • Sync Disconnect Switch "ON". • "IN SYNC" light ON. • "LOW ALTERNATE AC SOURCE VOLTAGE" light OFF. • "ALTERNATE AC SOURCE OFF FREQUENCY" light OFF. <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Step 2.3 At KSF1 Bypass Switch cabinet:</p> <ul style="list-style-type: none"> • Ensure Sync Switch in "SYNC". • Position S1 Transfer Switch to "ALTERNATE SOURCE". • Verify Output Voltage: 115 - 125 Volts. <p><u>STANDARD:</u> Locate the KSF1 Bypass Switch cabinet and:</p> <ul style="list-style-type: none"> • Ensure Sync Switch in "SYNC". • Position S1 Transfer Switch to "ALTERNATE SOURCE". • Verify Output Voltage: 115 - 125 Volts. <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 7:</u> Step 2.4.1 At Inverter KSF1: Verify:</p> <ul style="list-style-type: none"> • "INVERTER SUPPLYING LOAD" light OFF. • "ALTERNATE AC SOURCE SUPPLYING LOAD" light ON. <p><u>STANDARD:</u> Locate the above lights and determine that:</p> <ul style="list-style-type: none"> • "INVERTER SUPPLYING LOAD" light is OFF. • "ALTERNATE AC SOURCE SUPPLYING LOAD" light is ON. <p>Cue: Indicate that the Green "INVERTER SUPPLYING LOAD" light is OFF Indicate that the Orange "ALTERNATE AC SOURCE SUPPLYING LOAD" light is ON</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 2.4.2 Perform the following:</p> <ul style="list-style-type: none"> • Open CB-2 (Inverter Output). • IF required Red Tag Open CB-2 (Inverter Output). • Open CB-1 (DC Input). • IF required Red Tag Open CB-1 (DC Input). <p><u>STANDARD:</u> Candidate opens the following breakers by placing the switch in the OFF position</p> <ul style="list-style-type: none"> • Open CB-2 (Inverter Output). (critical) • Open CB-1 (DC Input). (critical) <p>Note: Red Tags are not required to be hung.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Step 2.5 Ensure closed & latched KSF1 Inverter panel.</p> <p><u>STANDARD:</u> Candidate ensures KSF1 Inverter panel closed & latched.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 2.6 At KSF1 Bypass Switch cabinet:</p> <ul style="list-style-type: none"> • Ensure Sync Switch in "NON-SYNC". • IF required, Red Tag Sync Switch in "NON-SYNC". <p><u>STANDARD:</u> Candidate ensures Sync Switch in "NON-SYNC".</p> <p>Note: Red Tags are not required to be hung.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 2.7 Ensure closed & latched KSF1 Bypass Switch cabinet door.</p> <p><u>STANDARD:</u> Candidate ensures KSF1 Bypass Switch cabinet door is closed & latched.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 2.8 Open DCSF-2C (15 KVA KSF1 FDR BKR).</p> <p><u>STANDARD:</u> Open DCSF-2C by taking the breaker to the OFF position.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 11:</u> Step 2.9 IF required Red Tag Open DCSF-2C (15 KVA KSF1 FDR BKR).</p> <p><u>STANDARD:</u> Determine Red Tagging not required per the initiating cue.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 2.10 Notify Security (2222) of the following:</p> <ul style="list-style-type: none"> • Inverter KSF1 has been removed from in-service. • Security alarm MSF1T should have returned to normal. <p>_____ / _____ Person Contacted Date Time</p> <p><u>STANDARD:</u> Locate a phone and call Security and inform them:</p> <ul style="list-style-type: none"> • Inverter KSF1 has been removed from in-service. • Security alarm MSF1T should have returned to normal. <p>Record the security officer contacted and include the date/time.</p> <p><i>Cue: Simulate security officer "Fred Jones" on the phone.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
6	This step is required to ensure inverter loads are not lost.
8	This step is required to isolate the inverter.
12	This step is required to isolate the inverter.

**CANDIDATE CUE SHEET
(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)**

INITIAL CONDITIONS:

KSF1 inverter is to be shutdown.

INITIATING CUES:

The CRSRO directs you to shutdown the KSF1 inverter using Enclosure 4.2 (Shutdown of Inverter KSF1) of OP/0/A/1600/006 (Operation of SSF KSF1/KSF2 Inverters and SSF CSF/CSFS Battery Chargers).

Hanging Red Tags is NOT required.

NO CABINET DOORS ARE TO BE OPENED FOR THIS JPM