

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

**CRO-310
PERFORM REQUIRED ACTIONS FOR A FAILED LPI TRAIN**

CANDIDATE _____

EXAMINER _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Perform Required Actions For A Failed LPI Train

Alternate Path:

Yes

Facility JPM #:

CRO-004

K/A Rating(s):

System: EPE 011

K/A: EA1.04

Rating: 4.4/4.4

Task Standard:

1A and 1B LPI pumps are started when RCS pressure decreases below LPI pump discharge pressure and 1LP-17 is closed after 1A LPI pump fails.

Preferred Evaluation Location:

Simulator ☒ In-Plant ☐

Preferred Evaluation Method:

Perform ☒ Simulate ☐

References:

EOP Enclosure 5.1, ES Actuation

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:

1. **RECALL** Snap 208
2. **IMPORT** files for CRO-310
3. **WHEN** directed by Lead Examiner, Go to **RUN**

45 DAY SUBMITTA

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:

- A LOCA has been in progress that initially stabilized RCS Pressure at 1000 psig.
- ES Channels 1-8 have actuated on high RB pressure, the LPI pumps were secured as directed by Enclosure 5.1 (ES Actuation) to prevent pump damage.
- Enclosure 5.1(ES Actuation) has been completed up to Step 52 with outstanding IAATs.
- The LOCA CD Tab in progress.
- Steam Generator levels are being raised to the Loss of Subcooling Margin setpoint by the OATC.
- RCS pressure is decreasing rapidly.

INITIATING CUES:

The Control Room SRO instructs you, the Balance of Plant Operator, to continue in Enclosure 5.1 (ES Actuation) and respond to plant conditions.

START TIME: _____

<p><u>STEP 1:</u> Step 52 REFER TO Enclosure 5.1 IAAT Steps prior to Step 52 (since this was the exit point earlier).</p> <p><u>STANDARD:</u> Checks IAAT steps to determine if any apply Determine that IAAT Step 19 applies once RCS pressure is < ≈200 psig Continue to Step 19.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 19 IAAT RCS Pressure is < LPI pump shutoff head, THEN perform Steps 20 - 21</p> <p><u>STANDARD:</u> Continue to Step 20.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 20 Perform the following:</p> <ul style="list-style-type: none"> • Open 1LP-17 • *Start 1A LPI Pump <p><u>STANDARD:</u> Determine that 1LP-17 is open by observing the Red open light is lit located on 1UB2. Places 1A LPI Pump switch to START and observes Red light on and white light off. Continue to Step 21.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 4: Step 21 Perform the following:</p> <ul style="list-style-type: none"> • Open 1LP-18 • *Start 1B LPI Pump <p>STANDARD: Determine that 1LP-18 is open by observing the red open light is lit located on 1UB2. Places 1B LPI pump switch to START and observes Red light on and white light off. Go back to Step 52.</p> <p>COMMENTS:</p>	<p>*CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 52 REFER TO Enclosure 5.1 IAAT Steps prior to Step 52</p> <p>STANDARD: Checks IAAT steps to determine if any apply Determines that IAAT Step 25 now applies Continue to Step 25.</p> <p>Evaluator Note: 1A LPI Pump fails while operating.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 25 IAAT 1A LPI pump fails while operating, AND 1B LPI pump is operating, THEN close 1LP-17.</p> <p>STANDARD: Determine the 1A LPI Pump is off and 1B LPI pump is operating, AND Close 1LP-17.</p> <p>Cue: Another Operator will continue with this procedure.</p> <p>COMMENTS:</p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS:

STEP #

Explanation

- 3 Student verifies 1LP-17 is open and Starts 1A LPIP
- 4 Student verifies 1LP-18 is open and Starts 1B LPIP
- 6 Student closes 1LP-17 when 1A LPIP fails

45 DAY SUBMITTAL

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

INITIAL CONDITIONS:

- A LOCA has been in progress that initially stabilized RCS Pressure at 1000 psig.
- ES Channels 1-8 have actuated on high RB pressure, the LPI pumps were secured as directed by Enclosure 5.1 (ES Actuation) to prevent pump damage.
- Enclosure 5.1(ES Actuation) has been completed up to Step 52.
- The LOCA CD Tab in progress.
- Steam Generator levels are being raised to the Loss of Subcooling Margin setpoint by the OATC.
- RCS pressure is decreasing rapidly.

INITIATING CUES:

The Control Room SRO instructs you, the Balance of Plant Operator, to continue in Enclosure 5.1 (ES Actuation) and respond to plant conditions.

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

CRO-407

Establish EFDW Flow Through Startup Valves

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Establish EFDW flow through Startup valves

Alternate Path:

Yes

Facility JPM #:

CRO-015

K/A Rating(s):

System: APE-054

K/A: AA2.04

Rating: 4.2/4.3

Task Standard:

EFDW flow is established to the affected header through the startup valve.

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: 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

1. **RECALL** Snap 209
2. **IMPORT** files for CRO-407
3. **WHEN** directed by Lead Examiner, go to **RUN**

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed

- EOP Rule 3, Loss of Main and Emergency Feedwater
- EOP Encl 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

- The reactor has just tripped from 25% power
- Immediate Manual Actions are complete

INITIATING CUES

The SRO directs you to perform a Symptoms Check

START TIME: _____

<p>STEP 1: Performs a Symptom Check</p> <p>STANDARD: Performs Symptom Check and determines that there are no symptoms to report but will perform Rule 3 due to a loss of Main Feedwater</p> <p>EXAMINER CUE: <i>CR SRO acknowledges performing Rule 3 due to a Loss of Main Feedwater.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: Rule 3: Step 1 Verify loss of Main FDW/EFDW is due to Turbine Building Flooding.</p> <p>STANDARD: Observes that TB Flooding is NOT occurring by 2SA-18/A-11 (Turbine BSMT Water Emergency High Level) NOT illuminated. (OP/2/A/6102/018)</p> <p>Candidate will perform RNO step and GO TO step 3.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 3: Rule 3: Step 3 IAAT NO SGs can be fed with FDW (Main/CBP/Emergency), AND any of the following exist:</p> <ul style="list-style-type: none"> • RCS pressure reaches 2300 psig OR NDT limit • Pzr level reaches 375" [340" acc] <p>THEN PERFORM Rule 4 (Initiation of HPI Forced Cooling).</p> <p>STANDARD: Candidate determines Rule 4 is not required.</p> <p>Continue to Step 4.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4 Rule 3: Step 4 Start operable EFDW pumps, as required, to feed all intact SGs.</p> <p>STANDARD: Observes MD EFDWP & TD EFDWP running with switch lights on and normal discharge pressure.</p> <p>Continue to Step 5.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 5:</u> Rule 3: Step 5 Verify <u>any</u> EFDW Pump is operating.</p> <p><u>STANDARD:</u> Checks MD EFDWP & TD EFDWP switch lights are on and Pumps have normal discharge pressure.</p> <p>Continue to Step 6.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Rule 3: Step 6 GO TO step 37.</p> <p><u>STANDARD:</u> GO TO step 37.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Rule 3: Step 37 IAAT an EFDW valve CANNOT control in AUTO, OR manual operation of EFDW valve is desired to control flow/level, THEN perform Steps 38 - 42.</p> <p>ALTERNATE PATH</p> <p><u>STANDARD:</u> Determines that 1FDW-315 is <u>NOT</u> controlling properly (1A SG level is < 30" and decreasing). Concludes that 1FDW-315 has failed closed.</p> <p>Continue to Step 38.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Rule 3: Step 38 Place EFDW valve in MANUAL.</p> <p><u>STANDARD:</u> Place 1FDW-315 in MANUAL by depressing the A/M pushbutton on the Moore controller.</p> <p>Continue to Step 39.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Rule 3: Step 39 Control EFDW flow with EFDW valve in MANUAL.</p> <p><u>STANDARD:</u> Determine that 1FDW-315 will NOT control in MANUAL. Perform RNO, GO TO Step 41.</p> <p>Continue to step 41</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Rule 3: Step 41 Notify CR SRO that Encl 5.27 (Alternate Methods for Controlling EFDW Flow) is being initiated.</p> <p><u>STANDARD:</u> Removes Encl. 5.27 from EOP and initiates.</p> <p>EXAMINER CUE: <i>CR SRO acknowledges entry into Enclosure 5.27.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</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.</p> <p>Continue to Step 2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Encl 5.27: Step 2 Verify 1A MD EFDWP is operating</p> <p><u>STANDARD:</u> Candidate verifies 1A MD EFDWP is operating. Verify red light on and green light off and normal discharge pressure.</p> <p>Continue to Step 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 13: Encl 5.27: Steps 3 Stop 1A MD EFDWP</p> <p>STANDARD: *Candidate places switch to OFF. Verify red light off and white light illuminated.</p> <p>Continue to Step 4.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 14: Encl 5.27: Step 4 Verify 1B MD EFDWP is operating.</p> <p>STANDARD: Candidate verifies 1B MD EFDWP is operating. Verify red light on and green light off and normal discharge pressure.</p> <p>Continue to Step 5.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 15: Encl 5.27: Step 5 Place 1 TD EFDW Pump in PULL TO LOCK</p> <p>STANDARD: *Candidate places the U1 TD EFDW Pump in PULL to LOCK. Candidate verifies red light is out and green light is lit.</p> <p>Continue to Step 6.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 16: Encl 5.27: Step 6 Place 1FDW-35 in HAND and set demand to 0%</p> <p>STANDARD: Candidate places 1FDW-35 in HAND and uses toggle switch to reduce demand to 0%.</p> <p>Continue to Step 7.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 17: Encl 5.27: Step 7 Close 1FDW-33</p> <p>STANDARD: *Candidate closes SU Control Block Valve (1FDW-33). Candidate verifies red light is out and green light is lit. Continue to Step 8.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 18: Encl 5.27: Step 8 Verify 1A MD EFDWP will be used.</p> <p>STANDARD: Candidate determines that the 1A MD EFDWP will be used. Continue to Step 9.</p> <p>EXAMINER CUE: <i>If candidate asks if 1A MD EFDWP will be used, inform him that the CR SRO directs using the 1A MD EFDWP.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 19: Encl 5.27: Step 9 Open 1FDW-374</p> <p>STANDARD: *Candidate locates and opens 1FDW-374. Candidate observes green closed light off and red open light on. Continue to Step 10.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 20: Encl 5.27: Step 10 Verify the following:</p> <ul style="list-style-type: none"> • 1FDW-36 closed • 1FDW-38 open <p>STANDARD: Candidate locates and closes 1FDW-36 and observes green closed light on and red open light off on 1VB3 or uses OAC indication. Candidate locates and opens 1FDW-38 and observes green closed light off and red open light lit on 1VB3 or uses OAC indication. Continue to Step 11.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 21: Encl 5.27: Step 11 Start 1A MD EFDWP</p> <p>STANDARD: *Candidate places 1A MD EFDWP switch to RUN. Candidate verifies pump start by observing white light is off and red light is lit and proper discharge pressure.</p> <p>Continue to Step 12.</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="147 562 1247 751" style="border: 1px solid black; padding: 5px;"> <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>STEP 22: Encl 5.27: Step 12 Verify <u>either</u> of the following exists:</p> <ul style="list-style-type: none"> • HPI Forced Cooling is maintaining core cooling • CBP Feed providing SG feed <p>STANDARD: Candidate determines that neither condition is met and goes to the RNO.</p> <p>Continue to Step 12 RNO.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 23: Encl 5.27: Step 12 RNO IF any SG is being fed, THEN perform the following:</p> <ul style="list-style-type: none"> • *Throttle 1FDW-35 to establish a maximum of 100 gpm. • *Throttle 1FDW-35 to obtain desired SG level per Rule 7 (SG Feed Control) <p>Notify CR SRO of SG Feed Status</p> <p>STANDARD: Candidate throttles 1FDW-35 to attain ~ 100 gpm flow initially on MD EFWP DISCH FLOW gauge or OAC EFW graphic, then throttles 1FDW-35 as necessary to establish ~ 25" S/U level (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" S/U level since RCS temperature is >500°F.</p> <p>EXAMINER NOTE: <i>The candidate does not need to establish this level to complete the JPM. 1FDW-35 must be open and SG level increasing.</i></p> <p>EXAMINER CUE: <i>Another operator will continue with this procedure.</i></p> <p>COMMENTS:</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
10	This step is required to ensure the correct procedure is used.
13	This step is required to ensure the valves will operate.
15	This step is required to ensure the valves will operate.
16	This step is required to align the MD EFDWP to the S/U header.
17	This step is required to align the MD EFDWP to the S/U header.
19	This step is required to align the MD EFDWP to the S/U header.
21	This step is required to start the 1A MD EFDWP and provide a SG feed source.
23	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

- The reactor has just tripped from 25% power
- Immediate Manual Actions are complete

INITIATING CUES

The SRO directs you to perform a Symptoms Check

45 DAY SUBMITTAL

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

**CRO-602
LIVE BUS TRANSFER OF MFB POWER
FROM CT 1 TO CT 4**

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Live Bus Transfer Of MFB Power From CT 4 To CT 1

Alternate Path:

No

Facility JPM #:

New

K/A Rating(s):

System: 062

K/A: A4.01

Rating: 3.3/3.1

Task Standard:

Perform a live bus transfer from CT 4 to CT 1 by procedure.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT 4 Using Live Bus Transfer)

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 212
2. Go to **RUN**
3. **SELECT** Chessell to Source Range

45 DAY SUBMITTA

Tools/Equipment/Procedures Needed:

- OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT 4 Using Live Bus Transfer)

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:

- Oconee Unit 1 is in MODE 5.
- KHU-2 has been started by the Keowee operator.
- It is desired to energize the MFB from CT 4
- OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT 4 Using Live Bus Transfer) is in progress.

INITIATING CUES:

The Control Room SRO directs you to continue with OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT 4 Using Live Bus Transfer) beginning at step 2.4.

START TIME: _____

<p><u>STEP 1:</u> Step 2.4 Energize 4160V Standby Buses:</p> <p>Step 2.4.1 Notify all three Units that the Standby Bus is about to be powered from CT 4.</p> <p><u>STANDARD:</u> Use the control room phone and notify all three ONS Units that the Standby Bus is about to be powered from CT 4.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.4.2 Place CT 4 BUS 1 AUTO/MAN switch in "MAN".</p> <p><u>STANDARD:</u> Candidate rotates CT 4 BUS 1 AUTO/MAN switch, located on 2AB3, to "MAN".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 2.4.3 Place STBY BUS 1 SYNCHRONIZING SWITCH to "ON".</p> <p><u>STANDARD:</u> Candidate rotates STBY BUS 1 SYNCHRONIZING SWITCH, located on 2AB3, to "ON".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 4: Step 2.4.4 Close SK 1 CT 4 STBY BUS 1 FEEDER breaker.</p> <p>STANDARD: Candidate rotates SK 1 CT 4 STBY BUS 1 FEEDER breaker switch, located on 2AB3, to close and verifies white open light extinguishes and the red close light illuminates.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 2.4.5 Verify $\approx 4160V$ on STANDBY BUS 1 "STANDBY BUS 1 VOLTS."</p> <p>STANDARD: Verify $\approx 4160V$ on STANDBY BUS 1 "STANDBY BUS 1 VOLTS" on gauge located on 2AB3.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 2.4.6 Place STBY BUS 1 SYNCHRONIZING SWITCH to "OFF".</p> <p>STANDARD: Candidate rotates STBY BUS 1 SYNCHRONIZING SWITCH, located on 2AB3, to "OFF".</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 7:</u> Step 2.4.7 Place CT4 BUS 1 AUTO/MAN switch in "AUTO".</p> <p><u>STANDARD:</u> Candidate rotates CT4 BUS 1 AUTO/MAN switch, located on 2AB3, to "AUTO".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 2.4.8 Place CT4 BUS 2 AUTO/MAN switch in "MAN".</p> <p><u>STANDARD:</u> Candidate rotates CT4 BUS 2 AUTO/MAN switch, located on 2AB3, to "MAN".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 2.4.9 Place STBY BUS 2 SYNCHRONIZING SWITCH to "ON".</p> <p><u>STANDARD:</u> Candidate rotates STBY BUS 2 SYNCHRONIZING SWITCH, located on 2AB3, to "ON".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 10:</u> Step 2.4.10 Close SK 2 CT 4 STBY BUS 2 FEEDER.</p> <p><u>STANDARD:</u> Candidate rotates SK 2 CT 4 STBY BUS 2 FEEDER breaker switch, located on 2AB3, to close and verifies white open light extinguishes and the red close light illuminates.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 2.4.11 Verify ≈4160V on STANDBY BUS 2 "STANDBY BUS 2 VOLTS."</p> <p><u>STANDARD:</u> Verify ≈4160V on STANDBY BUS 2 "STANDBY BUS 2 VOLTS" using gauge located on 2AB3</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 2.4.12 Place STBY BUS 2 SYNCHRONIZING SWITCH to "OFF".</p> <p><u>STANDARD:</u> Candidate rotates STBY BUS 2 SYNCHRONIZING SWITCH, located on 2AB3, to "OFF".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Step 2.4.13 Place CT 4 BUS 2 AUTO/MAN switch in "AUTO".</p> <p><u>STANDARD:</u> Candidate rotates CT 4 BUS 2 AUTO/MAN switch, located on 2AB3, to "AUTO".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>CAUTION: E1 (1,2,3) E2 (1,2,3) will NOT open automatically when the S1 (1,2,3) OR S2 (1,2,3) breakers are closed. Minimize time during which both of these sets of breakers are closed. CT 1, 2, OR 3 Transformer will be paralleled with CT4 from the time the first "S" breaker is closed until the last "E" breaker is opened.</p> <p><u>STEP 14:</u> Step 2.5 For the desired Oconee Units, perform a Live Bus transfer from the Startup Transformer (CT1,CT2, OR CT3) to the Standby Bus:</p> <p>Step 2.5.1A Unit 1 Place STANDBY 1 AUTO/MAN switch in "MAN".</p> <p><u>STANDARD:</u> Candidate rotates STANDBY 1 AUTO/MAN switch, located on 1AB1, to "MAN".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 2.5.1B Place STANDBY 2 AUTO/MAN switch in "MAN".</p> <p><u>STANDARD:</u> Candidate rotates STANDBY 2 AUTO/MAN switch, located on 1AB1, to "MAN".</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Step 2.5.1C Place MFB 1 AUTO/MAN switch in "MAN".</p> <p><u>STANDARD:</u> Candidate determines that the MFB 1 AUTO/MAN switch, located on 1AB1, is in "MAN".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 17: Step 2.5.1D Place MFB 2 AUTO/MAN switch in "MAN".</p> <p>STANDARD: Candidate determines that the MFB 2 AUTO/MAN switch, located on 1AB1, is in "MAN".</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 18: Step 2.5.1E Open E1₁ (MFB1 STARTUP FDR).</p> <p>STANDARD: Candidate rotates E1₁ (MFB1 STARTUP FDR) switch located on 1AB1 to trip and verifies that the red close lights extinguishes and the white open light illuminates.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 19: Step 2.5.1F Close S1₁ (STBY BUS1 TO MFB1).</p> <p>STANDARD: Candidate rotates S1₁ (STBY BUS1 TO MFB1) switch located on 1AB1 to close and verifies white open light extinguishes and the red close light illuminates.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 20:</u> Step 2.5.1G Open E2₁ (MFB2 STARTUP FDR).</p> <p><u>STANDARD:</u> Candidate rotates E2₁ (MFB2 STARTUP FDR) switch located on 1AB1 to open and verifies that the red close lights extinguishes and the white open light illuminates.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> Step 2.5.1H Close S2₁ (STBY BUS2 TO MFB2).</p> <p><u>STANDARD:</u> Candidate rotates S2₁ (STBY BUS2 TO MFB2) switch located on 1AB1 to close and verifies white open light extinguishes and the red close light illuminates.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> Step 2.5.1I Place STANDBY 1 AUTO/MAN switch in "AUTO".</p> <p><u>STANDARD:</u> Candidate rotates STANDBY 1 AUTO/MAN switch, located on 1AB1, to "AUTO".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 23: Step 2.5.1J Place STANDBY 2 AUTO/MAN switch in "AUTO".</p> <p>STANDARD: Candidate rotates STANDBY 2 AUTO/MAN switch, located on 1AB1, to "AUTO".</p> <p>COMMENTS: <i>Examiner Cue: Another operator will continue with this procedure.</i></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>
--	---------------------------------

STOP TIME: _____

45 DAY SUBMITTAL

CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
2	Step is required to energize the STBY Bus.
3	Step is required to energize the STBY Bus.
4	Step is required to energize the STBY Bus.
8	Step is required to energize the STBY Bus.
9	Step is required to energize the STBY Bus.
10	Step is required to energize the STBY Bus.
14	Step is required to energize the MFB from the STBY Bus.
15	Step is required to energize the MFB from the STBY Bus.
18	Step is required to energize the MFB from the STBY Bus.
19	Step is required to energize the MFB from the STBY Bus.
20	Step is required to energize the MFB from the STBY Bus.
21	Step is required to energize the MFB from the STBY Bus.

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

INITIAL CONDITIONS:

- Oconee Unit 1 is in MODE 5.
- KHU-2 has been started by the Keowee operator.
- It is desired to energize the MFB from CT 4
- OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT 4 Using Live Bus Transfer) is in progress.

INITIATING CUES:

The Control Room SRO directs you to continue with OP/0/A/1106/019 (Keowee Hydro At Oconee), Enclosure 4.11 (Energizing MFB Power From CT-4 Using Live Bus Transfer) beginning at step 2.4.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

CRO-111

Withdrawal of Safety Rod Group 1 to 50%

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Withdrawal of Safety Rod Group 1 to 50%

Alternate Path:

Yes

Facility JPM #:

CRO-111

K/A Rating(s):

System: 001
K/A: G2.2.2
Rating: 4.6/4.1

Task Standard:

Begin withdrawal Of Safety Rod Group 1 To 50% and manually trip the reactor when CRD temperature limits are exceeded per OMP 1-18.

Preferred Evaluation Location:

Simulator X In-Plant _____

Preferred Evaluation Method:

Perform X Simulate _____

References:

OP/1/A/1105/019 (Rev 023) (Control Rod Drive System) Encl. 4.3 (Withdrawal Of Safety Rod Group 1 To 50%)
OMP 1-18 (Rev 034) Implementation Standards During Abnormal and Emergency Events

Validation Time: 10 min.

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 206
2. **IMPORT** CRO-111 Simulator files
3. Go To **RUN**
4. Select SR/WR on NI recorder

45 DAY SUBMITTA

Tools/Equipment/Procedures Needed

OP/1/A/1105/019 (Control Rod Drive System) Encl. 4.3 (Withdrawal Of Safety Rod Group 1 To 50%)

READ TO OPERATOR

DIRECTIONS TO STUDENT

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 startup is in progress

RCS temperature = 339°F

RCS pressure = 530 psig

INITIATING CUE

In accordance with step 2.12.4 of OP/1/A/1102/001 (Controlling Procedure For Unit Startup) Control Room SRO directs you to:

- Perform an Automatic Latch of Group 1 Control Rods
- Withdraw CRD Group 1 to 50% per OP/1/A/1105/019 (Control Rod Drive System) Enclosure 4.3 (Withdrawal Of Safety Rod Group 1) beginning at Step 3.1.

START TIME: _____

<p><u>STEP 1:</u> Step 3.1</p> <p>Perform the following: (R.M.)</p> <ul style="list-style-type: none">• Ensure RUN is ON.• Ensure SINGLE SELECT SWITCH to ALL. <p><u>STANDARD:</u> Determine control rod speed switch is selected to RUN by observing light indication on the Diamond.</p> <p> Determine SINGLE SELECT SWITCH is selected to ALL on the Diamond.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 3.2</p> <p>WHILE CRDs are moving, monitor the following indications:</p> <ul style="list-style-type: none">• CRD position• Appropriate ranged NIs• Startup Rate <p><u>STANDARD:</u> As CRDs are withdrawn monitor the above indications.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

NOTE: When LATCH AUTO is selected, the following automatically occurs:

- Group/Rod inserts to latch rods (CRD TRAVEL "In" light ON)
- Group/Rod withdraws to test for latching (CRD TRAVEL "Out" light ON)
- Group/Rod inserts (CRD TRAVEL "In" light ON)
- RPI resets.
- Group In Limit light on Diamond will momentarily extinguish then illuminate.

***CRITICAL STEP**

STEP 3: Step 3.3

Perform Latch and PI alignment of Group 1, as follows: (R.M.)

3.3.1 Ensure GROUP SELECT SWITCH to 1.

3.3.2 Verify only Group 1 CONTROL ON lights are ON. (PI panel) {9}

3.3.4 If Manual Latch and PI Alignment is desired, perform the following:
(Per initiating cue, Manual is NOT desired)

3.3.4 If Auto Latch and PI Alignment desired, perform the following:

- A. Select LATCH AUTO
- B. WHEN Auto Latch is complete, perform the following:
 - Verify LATCH AUTO is OFF.
 - Verify Group 1 0% lights are ON. (PI Panel)
 - Verify Group 1 API/RPI indications agree. (PI Panel)

___ SAT

___ UNSAT

STANDARD: *Rotate GROUP SELECT SWITCH to 1.

Determine that only Group 1 CONTROL ON lights are "ON" on the PI panel.

*Depress the LATCH AUTO pushbutton.

WHEN Auto Latch is complete:

- Verify LATCH AUTO is OFF.
- Verify Group 1 0% lights are ON. (PI Panel)
- Verify Group 1 API/RPI indications agree using the position switch on the PI Panel.

COMMENTS:

<p>STEP 4: Step 3.4 Select FAULT RESET</p> <p>STANDARD: Depress FAULT RESET pushbutton on the diamond panel.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 3.5 Select Group 1, as follows: (R.M.)</p> <ul style="list-style-type: none"> ➤ Ensure GROUP SELECT SWITCH to 1. ➤ Ensure only Group 1 CONTROL ON lights are ON. (PI panel) ➤ Ensure Group 1 at 50%. (R.M.) ➤ Place GROUP SELECT SWITCH to OFF. <p>STANDARD: Ensure GROUP SELECT SWITCH to 1. Determine that only Group 1 CONTROL ON lights are ON on the PI panel. *Begin withdrawing Group 1 Control Rods to 50% Manually Trip the Rx when two or more CRDM stator temperatures are $\geq 180^{\circ}\text{F}$ IAW OMP 1-18 Attachment A (Licensed Operator Memory Items)</p> <p>ALTERNATE PATH: <i>As rods are withdrawn, CRD temperatures will begin to increase.</i></p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>ALTERNATE PATH: <i>As rods are withdrawn, CRD temperatures will begin to increase.</i></p> <p><u>STEP 6:</u> Manually Trip the Rx when two or more CRDM stator temperatures are \geq 180F IAW OMP 1-18 Attachment A (Licensed Operator Memory Items)</p> <p><u>STANDARD:</u> Candidate Manually Trip the Rx when two or more CRDM stator temperatures are \geq 180F IAW OMP 1-18 Attachment A (Licensed Operator Memory Items)</p> <p>EXAMINER NOTE: <i>At \approx 10% withdrawn, CRD stator temperatures will begin to increase. At \approx 18% withdrawn, CRD stator temperatures will reach the OAC alarm set point. Once any two CRD stator temperatures reach 180F, Trip the Rx.</i></p> <p><u>COMMENTS:</u></p> <p>END OF TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
--	---

TIME STOP: _____

CRITICAL STEP EXPLANATIONS

EP #

Explanation

- 3 This step is required to withdraw group 1 control rods.
- 5 This step is required to withdraw group 1 control rods.
- 6 This step is required to manually trip the reactor when CRD temperature limits are exceeded.

45 DAY SUBMITTAL

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

INITIAL CONDITIONS

Unit 1 startup is in progress

RCS temperature = 339°F

RCS pressure = 530 psig

INITIATING CUE

In accordance with step 2.12.4 of OP/1/A/1102/001 (Controlling Procedure For Unit Startup)
Control Room SRO directs you to:

- Perform an Automatic Latch of Group 1 Control Rods
- Withdraw CRD Group 1 to 50% per OP/1/A/1105/019 (Control Rod Drive System)
Enclosure 4.3 (Withdrawal Of Safety Rod Group 1) beginning at Step 3.1.

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

CRO-225

Align letdown with 1HP-14 failed in "Bleed"

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Align letdown with 1HP-14 failed in 'Bleed'

Alternate Path:

No

Facility JPM #:

CRO-225

K/A Rating(s):

System: 002
K/A: A2.01
Rating: 4.3/4.4

Task Standard:

Students align letdown with 1HP-14 failed in the 'Bleed' position IAW AP/2

Preferred Evaluation Location:

Simulator ☒ In-Plant _____

Preferred Evaluation Method:

Perform ☒ Simulate _____

References:

AP/1/A/1700/002, Excessive RCS Leakage, (Rev 14) and EP/1/A/1800/001 (Rev 039) Enclosure 5.5, PZR and LDST Level Control.

Validation Time: 14 min.

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 207
2. **IMPORT** CRO-225 Simulator files
3. **WHEN** directed by Lead Examiner, Go To **RUN**

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed

- EP/1/A/1800/001 Enclosure 5.5 (PZR and LDST Level Control)
- AP/1/A/1700/002 (Excessive RCS Leakage)

READ TO OPERATOR

DIRECTIONS TO STUDENT

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

- Reactor Power is 100%
- AP/1/A/1700/002 is in progress due to 1HP-14 failing in the BLEED position.
- Another RO is making up to the LDST per Encl 5.5 of the EOP.

INITIATING CUE

The CRSRO directs you to continue with AP/1/A/1700/002 (Excessive RCS Leakage) beginning at step 4.155.

START TIME: _____

<p><u>STEP 1:</u> Step 4.155 Verify 1A LD Filter in service.</p> <p><u>STANDARD:</u> Student observes 1B Letdown (LD) Filter is in service and the 1A LD Filter is NOT in service using either the OAC or Control Board indications and goes to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 4.155 RNO</p> <ol style="list-style-type: none"> 1. If 1A LD Filter is OOS for maintenance, THEN restore 1A LD Filter per in progress procedure. (N/A) 2. Open 1HP-17 <p><u>STANDARD:</u> Student recognizes that 1A LD Filter is Available. *Student opens 1HP-17.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 4.156 Close 1HP-6</p> <p><u>STANDARD:</u> Student closes 1HP-6</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<div data-bbox="212 201 1183 281" style="border: 1px solid black; padding: 5px; text-align: center;"> NOTE TS 3.4.9 applies when indicated PZR Level > 260" (corrected value for 285") </div> <p><u>STEP 4:</u> Step 4.157 Adjust 1HP-7, as needed, to control:</p> <ul style="list-style-type: none"> • BLEED flow out of failed 1HP-14 • Pzr level <p><u>STANDARD:</u> Student adjusts 1HP-7 as necessary to control PZR level.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 5:</u> Step 4.158 Dispatch an operator to open 1HP-196</p> <p><u>STANDARD:</u> Student dispatches an AO to open 1HP-196</p> <p>BOOTH CUE: Open 1HP-196 with Manual Valves</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">CRITICAL STEP</p> <p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

<p><u>STEP 6:</u> Step 4.159 Verify CC System in Operation.</p> <p><u>STANDARD:</u> Student observes:</p> <ul style="list-style-type: none"> • At least one CC pump in operation • CC return flow is > 575 gpm <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Step 4.160 Position the standby HPI pump switch to OFF.</p> <p><u>STANDARD:</u> Student places the standby (1B) HPIP switch to OFF</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 4.161 Initiate monitoring RCP parameters.</p> <p><u>STANDARD:</u> Student refers to OAC TOC-RCP and control board indications to monitor RCP parameters.</p> <p>Booth Cue: Notify the student that 1HP-196 is open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Step 4.162 Throttle 1HP-31 to establish 12-15 gpm SEAL INLET HEADER FLOW.</p> <p><u>STANDARD:</u> Student throttles 1HP-31 to establish 12-15 gpm.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 4.163 When 1HP-196 is open, THEN close 1CS-26.</p> <p><u>STANDARD:</u> Student closes 1CS-26.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 4.164 Close the following;</p> <ul style="list-style-type: none"> • 1CS-27 • 1CS-32 & 37 <p><u>STANDARD:</u> Student verifies closed 1CS-27, 1CS-32, and 1CS-37.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 4.165 Open 1HP-6</p> <p><u>STANDARD:</u> Student opens 1HP-6.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 13:</u> Step 4.166 Throttle 1HP-31 to establish \approx 32 gpm SEAL INLET HDR FLOW.</p> <p><u>STANDARD:</u> Student throttles open 1HP-31 to establish \approx 32 gpm SEAL INLET HDR FLOW.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Step 4.167 Adjust 1HP-7 to establish desired letdown flow.</p> <p><u>STANDARD:</u> Student throttles open 1HP-7 to establish \approx 75 gpm letdown flow.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 4.168 Position the standby HPI pump switch to AUTO</p> <p><u>STANDARD:</u> Student places the standby (1B) HPIP switch to AUTO</p> <p><i>EXAMINER CUE: Notify the candidate that another operator will continue with this procedure.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: _____

CRITICAL STEP EXPLANATIONS

EP #

Explanation

- 2 1HP-17 must be opened to align the alternate letdown flow path.
- 5 1HP-196 must be open for the alternate letdown flow path.
- 10 1CS-26 is closed to isolate the flow path going to the BHUTs.
- 15 The standby HPIP (1B) control switch is placed back in AUTO to protect RCP seals by automatically starting the standby HPIP if low seal injection flow (<22 gpm) is detected.

45 DAY SUBMIT

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

INITIAL CONDITIONS

- Reactor Power is 100%
- AP/1/A/1700/002 is in progress due to 1HP-14 failing in the BLEED position.
- Another RO is making up to the LDST per Encl 5.5 of the EOP.

INITIATING CUE

The CRSRO directs you to continue with AP/1/A/1700/002 (Excessive RCS Leakage) beginning at step 4.155.

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

CRO-408a

START FOURTH REACTOR COOLANT PUMP

CANDIDATE: _____

EXAMINER: _____

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Start the fourth RCP

Alternate Path:

Yes

Facility JPM #:

CRO-038a

K/A Rating(s):

System: 003
K/A: A4.06
Rating: 2.9*/2.9

Task Standard:

1B2 RCP is started in accordance with OP/1/A/1103/006 Encl. 4.4 (Starting 1B2 RCP) and then secured per AP/16 due to high vibration

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

OP/1/A/1102/001 (Controlling Procedure for Unit Startup)
OP/1/A/1103/006 Encl. 4.4 (Starting 1B2 RCP)
AP/1/A/1700/016 (Abnormal Reactor Coolant Pump Operation)
ARG 1SA-2 / E-2 (RC Pump Vibrations Emergency High)

Validation Time: 18 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 210
2. **Import** files for CRO-408a
3. **Ensure** all breaker flags are set to current plant conditions
4. **When** directed by lead examiner, **Go** to Run.

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed:

OP/1/A/1102/001 (Controlling Procedure for Unit Startup)
OP/1/A/1103/006 Encl. 4.4 (Starting 1B2 RCP)
ARG 1SA-2 / D-2 (RC Pump Vibration High)
ARG 1SA-2 / E-2 (RC Pump Vibration Emergency High)

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

OP/1/A/1102/001 (Controlling Procedure for Unit Startup) is in progress and completed up to steps which directs starting the fourth RCP

RCS Pressure = 1660 psig slowly increasing

RCS Temperature = 471°F slowly increasing

INITIATING CUES

The CRSRO directs you to start the 1B2 RCP per OP/1/A/1103/006 Encl. 4.4 beginning with step 2.1.

START TIME: _____

<p><u>STEP 1:</u> Step 2.1.1 Announce "Starting 1B2 RCP" via plant page.</p> <p><u>STANDARD:</u> Announces "Starting 1B2 RCP" using the plant page system.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.1.2 IF AT ANY TIME Oil Lift Pump low discharge pressure clears, Go To Step 2.1.6</p> <p><u>STANDARD:</u> Reads IAAT step and determines it does not currently apply</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="142 1121 1235 1163" style="border: 1px solid black; padding: 2px;"> <p>NOTE: AC Oil Lift Pump may take > 2 minutes to develop adequate discharge pressure.</p> </div> <p><u>STEP 3:</u> Step 2.1.3 IF available, start AC Oil Lift Pump on 1B2 RCP.</p> <p><u>STANDARD:</u> Determines AC Oil Lift Pump is available and:</p> <ul style="list-style-type: none"> • *Rotates AC Oil Lift Pump switch to start • Observes red light on and green light off • Monitors discharge pressure status on OAC • Low discharge pressure warning will clear on OAC <p>Candidate determines that IAAT Step 2.1.2 now applies and moves ahead to Step 2.1.6</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 4:</u> Step 2.1.6 WHEN Oil Lift Pump low discharge pressure clears AND > 60 seconds has elapsed since starting oil lift pumps, start 1B2 RCP.</p> <p><u>STANDARD:</u> Once the AC Oil Lift Pump low discharge pressure has cleared, start the 1B2 RCP as follows:</p> <ul style="list-style-type: none"> • *Rotate 1B2 RCP switch to START • Verify red lights on and green light off • Verify starting current • Verify OAC indications support pump start <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> Step 2.1.7 After RCP is at full speed, perform the following:</p> <p>A. Ensure the following stopped</p> <ul style="list-style-type: none"> • AC Oil Lift Pump • DC Oil Lift Pump <p>B. If AC Oil Lift Pump was operated, position AC Oil Lift Pump switch to "OFF"</p> <p>C. If DC Oil Lift Pump was operated, position AC Oil Lift Pump switch to "OFF"</p> <p><u>STANDARD:</u> Once 1B2 RCP is at rated speed,</p> <ul style="list-style-type: none"> • Rotates AC Oil Lift Pump switch to OFF <p>EXAMINER NOTE: Stat-Alarms 1SA-9 / D-2 (RC Pump Vibration High) and 1SA-2 / E-2 (RC Pump Vibration Emergency High) will alarm ~30 sec after starting 1B2 RCP.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 6: 1SA-9 / D-2 (RC Pump Vibration High) 1SA-9 / E-2 (RC Pump Vibration Emergency High) Step 3.1 Use one of the following means to verify RCP vibration conditions:</p> <ul style="list-style-type: none"> • Verify vibration readings on RCP OAC Display Group RCP. • IF the OAC is unavailable, verify the alarm by referring to RCP Vibration Monitoring Chart Recorder. <p>STANDARD: Candidate verifies vibration readings apply by referring to the OAC Display Group RCP.</p> <p>EXAMINER NOTE: <i>The Candidate may refer to either 1SA-9 / D-2 (High Vibration) or 1SA-9 / E-2 (Emergency High Vibration). ARG guidance is similar in either case.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 7: 1SA-9 / D-2 (RC Pump Vibration High) Step 3.2 IF indications of both RCPs in a loop are trending up together without any changes to RCS conditions (Temp/Pressure), swap Vibration Monitor power supplies:</p> <p>STANDARD: Candidate determines that 1B1 RCP vibrations are not increasing and Step 3.2 does not apply. Candidate continues to Step 3.3.</p> <p>EXAMINER NOTE: <i>This step does not exist if the Candidate refers to the Emergency High Vibration stat-alarm. (1SA-9 / E-2)</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 8:</u> 1SA-9 / D-2 (RC Pump Vibration High) Step 3.3 1SA-9 / E-2 (RC Pump Vibration Emergency High) Step 3.2 IF MODE 1 or 2, initiate AP/1/A/1700/016 (Abnormal Reactor Coolant Pump Operation)</p> <p><u>STANDARD:</u> Candidate initiates AP/1/A/1700/016 for High Vibration on 1B2 RCP.</p> <p>EXAMINER CUE: <i>If the candidate tells the CRSRO that the ARG directs initiating AP/16 inform the candidate that the CRSRO directs the Candidate to initiate AP/16.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 4.1 IAAT any RCP meets immediate trip criteria of Encl 5.1 (RCP Immediate Trip Criteria), THEN perform Steps 4.2 - 4.11.</p> <p><u>STANDARD:</u> Candidate refers to AP/16 Enclosure 5.1 and determines that 1B2 RCP meets Immediate Trip Criteria due to High Vibrations.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 4.2 Verify MODE 1 <u>or</u> 2</p> <p><u>STANDARD:</u> Candidate verifies that Unit 1 is in MODE 3 and moves to Step 4.2 RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 11: Step 4.2 RNO Stop the <u>affected</u> RCP.</p> <p>STANDARD: Candidate stops the 1B2 RCP.</p> <p>EXAMINER CUE: <i>Another operator will continue with this procedure.</i></p> <p>COMMENTS:</p> <p style="text-align: center;">END TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
--	---

STOP TIME: _____

45 DAY SUBMITTAL

CRITICAL STEP EXPLANATIONS

STEP #

Explanation

4 Required to start the 1B2 RCP

11 Required to stop 1B2 RCP

45 DAY SUBMITTAL

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

INITIAL CONDITIONS

OP/1/A/1102/001 (Controlling Procedure for Unit Startup) is in progress and completed up to steps which directs starting the fourth RCP

RCS Pressure = 1660 psig slowly increasing

RCS Temperature = 471°F slowly increasing

INITIATING CUES

The CRSRO directs you to start the 1B2 RCP per OP/1/A/1103/006 Encl. 4.4 beginning with step 2.1.

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

**CRO-508
PUMP THE QUENCH TANK**

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Pump the Quench Tank

Alternate Path:

No

Facility JPM #:

CRO-508

K/A Rating(s):

System: 007

K/A: A1.01

Rating: 2.9/3.1

Task Standard:

Utilize OP/1/A/1104/017 Enclosure 4.1 to lower Quench Tank level to 75 inches.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

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

1. **RECALL** Snap 211
2. Place T/O sheet tags on QT Drain Pump and Component Drain Pump.
3. Update Boron Status board to show last 1A BHUT boron sample as being > 24 hours old.
4. Provide a copy of OP/1/A/1104/017 Encl 4.1 with the following:
 - Limits & Precautions
 - Steps 1.1 through 1.4 signed off.
5. Go to **RUN**

45 DAY SUBMITTA

Tools/Equipment/Procedures Needed:

- OP/1/A/1104/017 Limits & Precautions
- OP/1/A/1104/017 Enclosure 4.1

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 is Shutdown
- Unit 1 Quench Tank level is ≈ 86 "
- Quench Tank is aligned to 1A BHUT
- Enclosure 4.1 of OP/1/A/1104/017 is complete up to Step 2.1

INITIATING CUES

The Control Room SRO directs you to use the COMPONENT DRAIN PUMP and the QUENCH TANK DRAIN PUMP to pump the Quench Tank to 1A BHUT beginning at Step 2.1 of OP/1/A/1104/017 Enclosure 4.1

Secure pumping the Quench Tank at ≈ 75 "

START TIME: _____

<p><u>STEP 1:</u> Step 2.1 Ensure open: ___ 1CS-5 (COMPONENT DRN PUMP SUCTION) ___ 1CS-6 (COMPONENT DRN PUMP SUCTION)</p> <p><u>STANDARD:</u> Candidate ensures 1CS-5 and 1CS-6 are open by taking the control switches located on 1AB1 to the open position and verifying red open light illuminated and green closed light OFF. Candidate continues to Step 2.2.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.2 IF QT level will be maintained in normal operating band: 2.2.1 IF desired, start COMPONENT DRAIN PUMP. 2.2.2 IF desired, start QUENCH TANK DRAIN PUMP.</p> <p><u>STANDARD:</u> Candidate recognizes from the Initial Conditions that this step is N/A and moves on to Step 2.3</p> <p>NOTE: The normal operating band for Quench Tank level is 80-100" when RCS pressure > 45 psig per L&P 2.4 of OP/1/A/1104/017.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 2.3 IF QT level is to be reduced below low level setpoint of 80 inches, perform the following: ___ 2.3.1 Ensure RCS pressure < 45 psig.</p> <p><u>STANDARD:</u> Candidate reads RCS pressure from the Low Range Cooldown Pressure indication and ensures that RCS pressure is <45 psig. Candidate continues to Step 2.3.2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 4: Step 2.3.2 IF desired, place COMPONENT DRAIN PUMP to BYPASS</p> <p>STANDARD: *Candidate places the COMPONENT DRAIN PUMP switch in the BYPASS position.</p> <p>EVALUATOR NOTE: <i>The low level cut-off for the Quench Tank Pump will trip the pump at ≈ 80".</i></p> <p>EVALUATOR NOTE: <i>The candidate must start <u>either</u> the COMPONENT DRAIN PUMP or the QUENCH TANK DRAIN PUMP in the bypass position to complete the task. The candidate's instructions were to use both.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 2.3.3 IF desired, place QUENCH TANK DRAIN PUMP to BYPASS</p> <p>STANDARD: *Candidate places the QUENCH TANK DRAIN PUMP switch in the BYPASS position.</p> <p>EVALUATOR NOTE: <i>The candidate must start <u>either</u> the COMPONENT DRAIN PUMP or the QUENCH TANK DRAIN PUMP to complete the task. The candidate's instructions were to use both.</i></p> <p>EXAMINER NOTE: <i>Expect 1SA-6 / A-7 (Quench Tank Level High/Low) to alarm at 80 inches in the Quench Tank.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 2.3.4 At desired level (≈75"), perform the following:</p> <ul style="list-style-type: none"> • Ensure stopped COMPONENT DRAIN PUMP • Ensure stopped QUENCH TANK DRAIN PUMP <p>STANDARD: Candidate stops the COMPONENT DRAIN PUMP and the QUENCH TANK DRAIN PUMP by rotating the switch to STOP.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 7: Step 2.4. Perform the following: ___ Close 1CS-5 (COMPONENT DRN PUMP SUCTION) ___ Close 1CS-6 (COMPONENT DRN PUMP SUCTION)</p> <p>STANDARD: Candidate closes 1CS-5 and 1CS-6 by placing each control switch in the closed position. The green closed light illuminates and the red open light extinguishes.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 8: Step 2.5. IF 1A BHUT boron sample > 24 hours old AND QT pumped to 1A BHUT, perform the following: ___ 2.5.1 Verify closed 1CS-46 (1A RC BLEED XFER PUMP DISCHARGE). ___ 2.5.2 Dispatch NEO to observe 1A Bleed Transfer Pump discharge pressure.(1CS-PG-0084) ___ 2.5.3 Start 1A BLEED TRANSFER PUMP.</p> <p>BOOTH CUE: When called report as NEO: "Using Time Compression, I am standing by to read 1A Bleed Transfer Pump discharge pressure at (1CS-PG-0084)".</p> <p>STANDARD: Candidate verifies 1CS-46 (1A RC BLEED XFER PUMP DISCHARGE) closed by observing green closed light illuminated and red open light off. Candidate dispatches NEO to observe 1A Bleed Transfer Pump discharge pressure.(1CS-PG-0084) Candidate starts 1A BLEED TRANSFER PUMP and observes red light illuminated and green light off.</p> <p>EVALUATOR CUE: When 1A BLEED TRANSFER PUMP is started inform the candidate that another operator will continue this procedure.</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

CRITICAL STEP EXPLANATIONS

STEP #

Explanation

- 1 Step required to align the flow path from the QT to 1A BHUT
- 4 This step is required to begin the level decrease in the Quench Tank.
- 5 This step is required to begin the level decrease in the Quench Tank.
- 6 This step stops the QT Drain Pump and the Component Drain Pump when the QT is \approx 75 inches
- 7 This step isolates the flow path from the QT to 1A BHUT

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

INITIAL CONDITIONS

Unit 1 is Shutdown

Unit 1 Quench Tank level is $\approx 86''$

Quench Tank is aligned to 1A BHUT

Enclosure 4.1 of OP/1/A/1104/017 is complete up to Step 2.1

INITIATING CUES

The Control Room SRO directs you to use the COMPENENT DRAIN PUMP and the QUENCH TANK DRAIN PUMP to pump the Quench Tank to 1A BHUT beginning at Step 2.1 of OP/1/A/1104/017 Enclosure 4.1

Secure pumping the Quench Tank at $\approx 75''$

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

CRO-801a

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-801

K/A Rating(s):

System: 075

K/A: A2.01

Rating: 3.0*/3.2

Task Standard:

CCW Intake Canal is aligned for recirc

Preferred Evaluation Location:

Simulator ☒ In-Plant ☐

Preferred Evaluation Method:

Perform ☒ Simulate ☐

References:

AP/1/A/1700/13 (CCW Dam Failure)

Validation Time: 15 min.

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** simulator files for CRO-801a
3. **Ensure** all breaker flags (especially CCW pumps) are set to current plant conditions.
4. **Go to RUN** as directed by examiner
5. **When** asked to dispatch an operator to close the breaker for 1CCW-12 (at step 17) **Fire Timer #1** and inform student that using time compression the breaker is closed.

Tools/Equipment/Procedures Needed:

- AP/1/A/1700/013 (Dam Failure)

READ TO OPERATOR

DIRECTIONS TO STUDENT:

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:

- Security reports that a failure of the Newry Dam has occurred.
- The CCW Intake Canal is intact
- Subsequent Actions of AP/1/A/1700/013 (Dam Failure) have been completed up to step 4.4.

INITIATING CUE:

The Control Room SRO directs you to align the CCW Intake Canal for recirc, using the 1C CCW pump, beginning at step 4.4 of AP/1/A/1700/013.

START TIME: _____

<p><u>STEP 1:</u> Step 4.4 Depress the "CCW DAM FAILURE" pushbutton.</p> <p><u>STANDARD:</u> The "CCW DAM FAILURE" pushbutton is located by the student on 1AB3 and depressed.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</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> An individual is dispatched to report damage to the Control Rooms.</p> <p>Booth Cue: When asked, report that an individual has been dispatched to the Newry dam</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Step 4.6 GO TO step 4.49</p> <p><u>STANDARD:</u> Student goes to step 4.49</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 4: Step 4.49</p> <p>*Stop <u>all</u> RCP's</p> <p>Notify the CR SRO that for EOP purposes, RCPs should be considered <u>unavailable</u> for restart until LPSW is restored</p> <p>STANDARD: *The control switches for RCPs 1A1, 1A2, 1B1 and 1B2 are located by the student on 1AB1 and rotated counter-clockwise to the TRIP position.</p> <p>CR SRO notified of RCP status</p> <p>COMMENTS:</p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 5: Step 4.50</p> <p>Stop <u>all</u> CCW pumps.</p> <p>STANDARD: 1A, 1B, 1C, and 1D CCW Pump switches are located by the student on 1AB3.</p> <p>Student ensures all CCW pump Red 'ON' lights are extinguished and White 'OFF' lights are illuminated.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 4.51</p> <p>Open 1CCW-1-6 (WATERBOX EMER DISCH VALVES).</p> <p>STANDARD: Student locates 1CCW-1-6 (WATERBOX EMER DISCH) control and indication on 1AB3 and ensures red "OPEN" indication is illuminated and green "CLOSED" indication is extinguished.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 7: Step 4.52</p> <p>Verify <u>all</u> condenser outlet valves indicate closed using the OAC (GD AP13):</p> <ul style="list-style-type: none"> 1 CCW-20 (Condenser 1A1 Outlet) (O1D0273) 1 CCW-21 (Condenser 1A2 Outlet) (O1D0275) 1 CCW-22 (Condenser 1B1 Outlet) (O1D0277) 1 CCW-23 (Condenser 1B2 Outlet) (O1D0279) 1 CCW-24 (Condenser 1C1 Outlet) (O1D0281) 1 CCW-25 (Condenser 1C2 Outlet) (O1D0283) <p>STANDARD: The student monitors the Operator Aid Computer to verify the following:</p> <ul style="list-style-type: none"> 1 CCW-20 (Condenser 1A1 Outlet) closed (O1D0273) 1 CCW-21 (Condenser 1A2 Outlet) closed (O1D0275) 1 CCW-22 (Condenser 1B1 Outlet) closed (O1D0277) 1 CCW-23 (Condenser 1B2 Outlet) closed (O1D0279) 1 CCW-24 (Condenser 1C1 Outlet) closed (O1D0281) 1 CCW-25 (Condenser 1C2 Outlet) closed (O1D0283) <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 8: Step 4.53</p> <p>Dispatch an operator to place all condenser outlet valves in HAND.</p> <ul style="list-style-type: none"> • 1CCW-20 • 1CCW-21 • 1CCW-22 • 1CCW-23 • 1CCW-24 • 1CCW-25 <p>STANDARD: An operator is dispatched to place the condenser outlet valves in HAND.</p> <p>Booth Cue: <i>When called, acknowledge that an operator has been dispatched to place the valves in HAND.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Step 4.54 Verify CCW-8 is open.</p> <p><u>STANDARD:</u> CCW-8 switch and indication is located by the student on 2AB3 verifying red "OPEN" indication illuminated and green "CLOSED" indication extinguished.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 4.55 Notify Unit 2 that emergency CCW siphon flow has been established on Unit 1.</p> <p><u>STANDARD:</u> Unit 2 Control Room is notified that siphon flow has been established on Unit 1.</p> <p><i>Examiner/Booth Cue: When candidate contacts Unit 2, acknowledge the notification that CCW siphon flow has been established on Unit 1.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 4.56 Dispatch operator(s) to perform Enclosure 5.2 (CCW Inventory Conservation).</p> <p><u>STANDARD:</u> Operator(s) are dispatched to perform Enclosure 5.2.</p> <p><i>Booth Cue: When contacted by the candidate, acknowledge that operators will perform Enclosure 5.2</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 12: Step 4.57</p> <p>IAAT Unit 2 CR has directed Unit 1 to supply CCW recirculation, THEN perform Steps 4.58-4.73 to start <u>one</u> CCW Pump and establish recirculation.</p> <p>STANDARD: Student continues to step 4.58.</p> <p>Cue: <i>Unit 2 Control Room has directed Unit 1 to supply CCW recirculation.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 13: Step 4.58</p> <p>Determine which CCW Pump will be started.</p> <p>STANDARD: The student determines from the turnover that the "1C" CCWP will be started</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 14: Step 4.59</p> <p>Place <u>all</u> CCW Pump switches in the trip position.</p> <p>STANDARD: Student places all Unit 1 CCW Pump switches in the tripped position.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 15:</u> Step 4.60 Verify the 1A or 1B CCW Pump is to be started.</p> <p><u>STANDARD:</u> Student determines from initiating cue that the 1C CCW pump will be started and goes to the RNO column and therefore goes to step 4.63.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Step 4.63 Verify both of the following CCW pump discharge valves are closed. 1CCW-12 1CCW-13</p> <p><u>STANDARD:</u> The student notes that the discharge valve for the 1C CCW pump (1CCW-12) is not closed and proceeds to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u> Step 4.63 RNO Locally close the discharge valve from the breaker switch for 1CCW-12 (Unit 1 Equipment room) (1CCW-13 is already closed)</p> <p><u>STANDARD:</u> The student dispatches an operator to locally close 1CCW-12 from the breaker switch (1XS3-2E).</p> <p>BOOTH CUE: When an operator is dispatched, fire TIMER #1, then inform candidate that 1CCW-12 is closed (use time compression)</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p>ALTERNATE PATH</p> <p><u>STEP 18:</u> Step 4.64 Start the selected CCW Pump.</p> <p><u>STANDARD:</u> *The student starts 1C CCW pump by rotating the control switch to the CLOSE position. "1C" CCW Pump will NOT start. Since there is no guidance in the RNO column, the student will continue to step 4.65</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 19:</u> Step 4.65 Verify the started CCW Pump Discharge valve opened.</p> <p><u>STANDARD:</u> The "1C" CCW Pump did not start and the discharge valve(1CCW-12) did not open. Since this step cannot be performed, the student will proceed to the RNO column</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 20:</u> Step 4.65 RNO 1. Stop the operating CCW pump 2. GO TO Step 4.58 to attempt to start a different CCW pump</p> <p><u>STANDARD:</u> The student returns to step 4.58 to start a different CCW pump</p> <p>EXAMINER CUE: Inform the student that the CR SRO directs returning to step 4.58 and proceed with starting the 1D CCW pump.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 21:</u> Step 4.58 Determine which CCW Pump will be started.</p> <p><u>STANDARD:</u> The student determines from the turnover that the "1D" CCWP will be started</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> Step 4.59 Place <u>all</u> CCW Pump switches in the trip position.</p> <p><u>STANDARD:</u> Student places all Unit 1 CCW Pump switches in the tripped position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 23:</u> Step 4.60 Verify the 1A or 1B CCW Pump is to be started.</p> <p><u>STANDARD:</u> Student determines from initiating cue that the 1C CCW pump will be started and goes to the RNO column and therefore goes to step 4.63.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 24:</u> Step 4.63 Verify both of the following CCW pump discharge valves are closed. 1CCW-12 1CCW-13</p> <p><u>STANDARD:</u> Both valves are determined to be closed. It is critical to ensure both valves are closed however they may have been closed at step 17 of this JPM and therefore already be closed at this step. IF CCW-12 or CCW-13 are open when reaching this step, closing them at this step is critical.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 25:</u> Step 4.64 Start the selected CCW Pump.</p> <p><u>STANDARD:</u> *The student starts 1D CCW pump by rotating the control switch to the CLOSE position. Student observes that the 1CCW-13 begins to open and the 1D CCW pump will start.</p> <p><u>COMMENTS:</u></p>	<p>*CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 26:</u> Step 4.65 Verify the started CCW Pump Discharge valve opened.</p> <p><u>STANDARD:</u> Determine that the "1D" CCW Pump discharge valve (1CCW-13) indicates Open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 27:</u> Step 4.66 Ensure CCWP LOAD SHED DEFEAT switch is positioned to a running CCWP.</p> <p><u>STANDARD:</u> The student ensures the CCWP LOAD SHED DEFEAT switch is in the "1D" CCW Pump position</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 28:</u> Step 4.67 Verify CCW-9 opens.</p> <p><u>STANDARD:</u> The student locates CCW-9 switch and indication on 2AB3 verifying red "OPEN" indication illuminated and green "CLOSED" indication extinguished.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 29:</u> Step 4.68 Verify CCW-8 is closed.</p> <p><u>STANDARD:</u> CCW-8 switch and indication are located by the student on 2AB3 verifying green "CLOSED" indication illuminated and red "OPEN" indication extinguished.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 30:</u> Step 4.69</p> <p>Verify an operator has been dispatched to open 1DP-F5C (CCW-8 BKR (EMERG CCW DISCH TO TAILRACE)).</p> <p><u>STANDARD:</u> An operator has not yet been dispatched so the student proceeds to the RNO.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 31:</u> Step 4.69 RNO</p> <p>Dispatch an operator to open 1DP-F5C (CCW-8 BKR (EMERG CCW DISCH TO TAILRACE)).</p> <p><u>STANDARD:</u> Operator dispatched.</p> <p>Booth Cue: When contacted, inform the student that an operator has been dispatched to open the breaker for CCW-8</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 32:</u> Step 4.70</p> <p>Ensure the discharge valves on <u>all</u> stopped CCW Pumps are closed.</p> <p>CCW-10 (1A CCW PUMP DISCHARGE VLV) CCW-11 (1B CCW PUMP DISCHARGE VLV) CCW-12 (1C CCW PUMP DISCHARGE VLV)</p> <p><u>STANDARD:</u> CCW pump discharge valve indications are located by the student on 1AB3. Valves associated with tripped CCW pumps (white lights lit) will have the green "CLOSED" indication illuminated.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 33:</u> Step 4.71</p> <p>Notify Unit 2 and 3 to ensure all Unit 2 and 3 CCW pump discharge valves are closed.</p> <p><u>STANDARD:</u> Unit 2 and 3 are notified to ensure their CCW Pump Discharge valves are closed.</p> <p><i>EXAMINER CUE: Another operator will continue with this procedure.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>
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TIME STOP: _____

45 DAY SUBMITTAL

CRITICAL STEP EXPLANATIONS

STEP #	Explanation
1	This step is critical because depressing this pushbutton trips all operating CCW Pumps and sets up system logic for CCW recirculation flow.
4	This step is critical because RCPs must be stopped to reduce primary heat load.
25	This step is critical because the pump provides the necessary recirculation flow.

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

INITIAL CONDITIONS:

Security reports that a failure of the Newry Dam has occurred.

The CCW Intake Canal is intact

Subsequent Actions of AP/1/A/1700/013 (Dam Failure) have been completed up to step 4.4.

INITIATING CUE:

The Control Room SRO directs you to align the CCW Intake Canal for recirc, using the 1C CCW pump, beginning at step 4.4 of AP/1/A/1700/013.

45 DAY SUBMITTAL

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

AO-710

**Place the Reactor Building Hydrogen Analyzer In
Service**

CANDIDATE

EXAMINER

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

Task:

Place the 1A Reactor Building Hydrogen Analyzer In Service

Alternate Path:

No

Facility JPM #:

AO-010

K/A Rating(s):

System: 028

K/A: A4.03

Rating: 3.1/3.3

Task Standard:

Reactor Building Hydrogen Analyzers are placed in service by procedure within 90 minutes.

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

EP/1/A/1800/00, (Rev 39) EOP Enclosure 5.2, "Placing RB Hydrogen Analyzers in Service"

Validation Time: 12 minutes

Time Critical: Yes

Candidate: _____

NAME

Time Start: _____

Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____

NAME

SIGNATURE

DATE

COMMENTS

SIMULATOR OPERATOR INSTRUCTIONS

None

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed

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

NOTE: Student is expected to know that this procedure is pre-staged at the Hydrogen Analyzers 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 1.

Engineered Safeguards Channels 1 and 2 have actuated.

Enclosure 5.1 (ES Actuation) of the EOP is being completed.

The 1A and 1B RB Hydrogen Analyzer Train is aligned in the standby mode.

INITIATING CUES

The Control Room SRO directs you to place both trains of the RB Hydrogen Analyzers in service on Unit 1 per EOP Enclosure 5.2 "Placing RB Hydrogen Analyzers in Service".

START TIME: _____

NOTE

Hydrogen analyzer (RP) panels are located in A-6-602, Vent Equipment Rm, col Q73 West.

STEP 1:

Step 1

At 1A H2 ANALYZER (RP), perform the following:

- Ensure POWER ON light is on.
- Position H2 DUAL RANGE SW to H2 0 -10% Range.
- Position FUNCTION SELECTOR switch to SAMPLE.
- Depress the OFF button for the following:
 - ___ 1PR-83 (BYP TO POST AC 1SV220)
 - ___ 1PR-86 (BYP TO POST AC 1SV221)

___ SAT

___ UNSAT

STANDARD: Red "Power On" light on remote panel is verified to be ON at the Remote RB Hydrogen Analyzer Panel (Train "A").

Cue: Indication is as you see it

H2 DUAL RANGE Sw. on the Remote Panel is verified to be positioned to the "0-10%" scale.

Cue: Indication is as you see it

FUNCTION SELECTOR SWITCH on the Remote Panel is verified to be positioned in the "SAMPLE" position.

Cue: Indication is as you see it

At the remote panel, the "OFF" button is pushed for the following valves:

Train A

- PR-83 (Bypass to Post Accident Sample Panel)
- PR-86 (Bypass from Post Accident Sample Panel)

Cue: Indication is as you see it

COMMENTS:

NOTE

Hydrogen analyzer (RP) panels are located in A-6-602, Vent Equipment Rm, col Q73 West.

STEP 2:

Step 2

At 1B H2 ANALYZER (RP), perform the following:

- Ensure POWER ON light is on.
- Position H2 DUAL RANGE SW to H2 0 -10% Range.
- Position FUNCTION SELECTOR switch to SAMPLE.
- Depress the OFF button for the following:
 - ___ 1PR-89 (BYP TO POST AC 1SV220)
 - ___ 1PR-92 (BYP TO POST AC 1SV221)

___ SAT

___ UNSAT

STANDARD: Red "Power On" light on remote panel is verified to be ON at the Remote RB Hydrogen Analyzer Panel (Train "B").

Cue: Indication is as you see it

H2 DUAL RANGE Sw. on the Remote Panel is verified to be positioned to the "0-10%" scale.

Cue: Indication is as you see it

FUNCTION SELECTOR SWITCH on the Remote Panel is verified to be positioned in the "SAMPLE" position.

Cue: Indication is as you see it

At the remote panel, the "OFF" button is pushed for the following valves:

Train A

- PR-89 (Bypass to Post Accident Sample Panel)
- PR-92 (Bypass from Post Accident Sample Panel)

Cue: Indication is as you see it

COMMENTS:

<p><u>STEP 3:</u> Step 3 Notify Control Room to perform the following:</p> <ul style="list-style-type: none"> • Open 1PR-81 and 1PR-84 • Open 1PR-87 and 1PR-90 <p><u>STANDARD:</u> Unit 1 Control Room personnel are notified to open 1PR-81, 1PR-84, 1PR-87, and 1PR-90 to align the Reactor Building Hydrogen Analyzer to the Reactor Building.</p> <p><i>Cue: After notification has been made, indicate to student that the red OPEN indication lights for all four valves located at the Remote Panel, are ON.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
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	CRITICAL STEP
<p style="text-align: center;"><u>NOTE</u></p> <p>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 ≈ 3 minutes.</p> <p><u>STEP 4:</u> Step 4</p> <p>At 1A H2 ANALYZER (RP), perform the following:</p> <ul style="list-style-type: none"> • 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. <p><u>STANDARD:</u> SAMPLE VALVE SEL. Sw. is positioned to appropriate sample valve:</p> <ul style="list-style-type: none"> • PR-71 (Top of Containment Sample) for Train 'A' <p><i>Cue: Point to the Sample Valve Selector Switch and state switch is in the PR-71 position and the red light is illuminated</i></p> <ul style="list-style-type: none"> • OFF/STANDBY/ANALYZE switch is positioned to the "ANALYZE" Mode. <p><i>Cue: Point to the Off/Standby/Analyze Switch is in Analyze position. The Hydrogen Concentration Meter reads approximately 3% hydrogen and the Yellow COMMON ALARM Light and Yellow HIGH HYDROGEN ALARM Lights are ON.</i></p> <ul style="list-style-type: none"> • REMOTE SELECTOR Pushbutton is depressed. <p><i>Cue: Control is from the remote panel.</i></p> <p><i>Cue: Inform candidate that <u>using time compression</u> approximately three minutes have elapsed and point to the Hydrogen Concentration Meter indicating 0% hydrogen concentration</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

	CRITICAL STEP
<p style="text-align: center;">NOTE</p> <p>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.</p> <p>STEP 5: Step 5</p> <p>At 1B H2 ANALYZER (RP), perform the following:</p> <ul style="list-style-type: none"> • Position SAMPLE VALVE SEL SW to PR-76 (TOP OF CONTAINMENT SAMPLE). • Position OFF / STANDBY / ANALYZE switch to ANALYZE. • Depress REMOTE SELECTOR pushbutton to ensure control is from the Remote Panel. <p>STANDARD: SAMPLE VALVE SEL. Sw. is positioned to appropriate sample valve:</p> <ul style="list-style-type: none"> • PR-76 (Top of Containment Sample) for Train 'B' <p>Cue: <i>Point to the Sample Valve Selector Switch and state switch is in the PR-76 position and the red light is illuminated.</i></p> <ul style="list-style-type: none"> • OFF/STANDBY/ANALYZE switch is positioned to the "ANALYZE" Mode. • <p>Cue: <i>Point to the Off/Standby/Analyze Switch is in Analyze position. The Hydrogen Concentration Meter reads approximately 3% hydrogen and the Yellow COMMON ALARM Light and Yellow HIGH HYDROGEN ALARM Lights are ON.</i></p> <ul style="list-style-type: none"> • REMOTE SELECTOR Pushbutton is depressed. <p>Cue: <i>Control is from the remote panel.</i></p> <p>Cue: <i>Inform candidate that <u>using time compression</u> approximately three minutes have elapsed and point to the Hydrogen Concentration Meter indicating 0% hydrogen concentration</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 6:</u></p> <p>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 appropriate train. ___ 1A RB Hydrogen Analyzer Train</p> <p><u>STANDARD:</u> ALARM RESET Pushbutton is depressed for both trains.</p> <p>Cue: <i>If the candidate asks, indicate that the Hydrogen reading is ≈ 0 percent on both trains.</i></p> <p>Cue: <i>Indicate to student that both yellow alarm lights are out after the ALARM RESET Pushbutton is depressed.</i></p> <p><u>COMMENTS:</u></p>		<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u></p> <p>Step 7</p> <p>WHEN HIGH HYDROGEN alarm has been reset on both 1A and 1B RB Hydrogen Analyzer Train, THEN notify Unit 1 Control Room that 1A 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 Analyzers are in service.</p> <p>Cue: <i>Control room acknowledges Hydrogen Analyzers is in service.</i></p> <p><u>COMMENTS:</u></p>		<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u></p> <p>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

- 3 Opens the block valves to the 1A and 1B H2 analyzer.
- 4 Starts the Analyzer pump and the sampling process for the 1A H2 Analyzer
- 5 Starts the Analyzer pump and the sampling process for the 1B H2 Analyzer

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

INITIAL CONDITIONS

A LOCA has occurred on Unit 1.

Engineered Safeguards Channels 1 and 2 have actuated.

Enclosure 5.1 (ES Actuation) of the EOP is being completed.

The 1A and 1B RB Hydrogen Analyzer Train is aligned in the standby mode.

INITIATING CUES

The Control Room SRO directs you to place both trains of the RB Hydrogen Analyzers in service on Unit 1 per EOP Enclosure 5.2 "Placing RB Hydrogen Analyzers in Service".

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

CRO-805

OATC Actions for Control Room Evacuation

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Remove Control Power Fuses and Open Breakers as directed by AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation)

Alternate Path:

No

Facility JPM #:

AO-805

K/A Rating(s):

System: BW/A06

K/A: AA1.10

Rating: 3.7*/3.9

Task Standard:

Control Power fuses for HPI pumps, RB Spray Pumps, and Reactor Coolant Pumps are pulled. Breakers for 3HP-939, 3HP-940, 3LP-21, and 3LP-22 are opened

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation)

Validation Time: 25 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

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed

AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation)

Breaker compartment pictures

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 plant fire is in progress that requires evacuation of Unit 3 Control Room
- AP/3/A/1700/050(Challenging Plant Fire) is in progress
- You have completed AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation) through step 9

INITIATING CUES

The Control Room SRO directs you to complete AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5. (OATC Actions for Control Room Evacuation)

<p>STEP 1: Step 10</p> <p>Remove <u>all</u> control power fuses from 3B HPI Pump at 3TE-9 (T-3/L45).</p> <p>STANDARD: Candidate locates the 4160V breaker cabinet for the 3B HPI Pump and indicates that the upper compartment door would be opened</p> <p>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: Step 11</p> <p>Remove <u>all</u> control power fuses from 3C HPI Pump at 3TD-9 (T-3/L44).</p> <p>STANDARD: Candidate locates the 4160V breaker cabinet for the 3C HPI Pump and indicates that the upper compartment door would be opened</p> <p>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 3: Step 12 Remove <u>all</u> control power fuses from 3B RBS Pump at 3TD-11 (T-3/L44).</p> <p>STANDARD: Candidate locates the 4160V breaker cabinet for the 3B RBS Pump and indicates that the upper compartment door would be opened</p> <p>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4: Step 13 Remove <u>all</u> control power fuses from 3A HPI Pump at 3TC-8 (T-3/L43).</p> <p>STANDARD: Candidate locates the 4160V breaker cabinet for the 3A HPI Pump and indicates that the upper compartment door would be opened</p> <p>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 5: Step 10</p> <p>Remove <u>all</u> control power fuses from 3A RBS Pump at 3TC-10 (T-3/L43).</p> <p>STANDARD: Candidate locates the 4160V breaker cabinet for the 3A RBS Pump and indicates that the upper compartment door would be opened</p> <p>Examiner Cue: <i>Provide picture of the inside of the upper breaker compartment to the candidate</i></p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 15</p> <p>Open the following breakers (U3 Equip Rm):</p> <ul style="list-style-type: none"> • 3XS5-F3B (3HP-940 Bkr) (LDST to RBES Train B) • 3XS2-F3D (3LP-22 Bkr) (3B LPI BWST Suction) • 3XS4-F3B (3HP-939 Bkr) (LDST to RBES Train A) • 3XS1-F5D (3LP-21 Bkr) (3A LPI BWST Suction) <p>STANDARD: Candidate locates the following breakers and positions the handles to the OPEN position:</p> <ul style="list-style-type: none"> • 3XS5-F3B (3HP-940 Bkr) (LDST to RBES Train B) • 3XS2-F3D (3LP-22 Bkr) (3B LPI BWST Suction) • 3XS4-F3B (3HP-939 Bkr) (LDST to RBES Train A) • 3XS1-F5D (3LP-21 Bkr) (3A LPI BWST Suction) <p>Examiner Cue: <i>The breaker handles that have the silver ring require the ring be removed before the breaker can be re-positioned</i></p> <p>Examiner Note: <i>The breaker for 3HP-939 is located just inside an RCA however it is visible from outside the RCA area therefore entry is into the RCA is not required for this JPM.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 7:</u> Step 16 Remove all control power fuses from 3A2 RC PUMP beaker at 3TB-8 (U#3 6900v Switchgear House)</p> <p><u>STANDARD:</u> Candidate locates the 6900V breaker cabinet for the 3A2 RC Pump and indicates that the upper compartment door would be opened</p> <p><i>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</i> Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Step 17 Remove all control power fuses from 3B2 RC PUMP beaker at 3TB-9 (U#3 6900v Switchgear House)</p> <p><u>STANDARD:</u> Candidate locates the 6900V breaker cabinet for the 3B2 RC Pump and indicates that the upper compartment door would be opened</p> <p><i>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</i> Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Step 18</p> <p>Remove all control power fuses from 3A1 RC PUMP beaker at 3TA-3 (U#3 6900v Switchgear House)</p> <p><u>STANDARD:</u> Candidate locates the 6900V breaker cabinet for the 3A1 RC Pump and indicates that the upper compartment door would be opened</p> <p><i>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</i></p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 19</p> <p>Remove all control power fuses from 3B1 RC PUMP beaker at 3TA-4 (U#3 6900v Switchgear House)</p> <p><u>STANDARD:</u> Candidate locates the 6900V breaker cabinet for the 3B1 RC Pump and indicates that the upper compartment door would be opened</p> <p><i>Examiner Cue: Provide picture of the inside of the upper breaker compartment to the candidate</i></p> <p>Candidate identifies the location of the two Control Power Fuse blocks and indicates they would be pulled out and left in the compartment</p> <p><u>COMMENTS:</u></p> <p><i>Examiner Cue: Another operator will continue with this procedure</i></p> <p>END TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

CRITICAL STEP EXPLANATIONS

STEP #

Explanation

All steps are critical since they secure components that could challenge operation of the SSF from the main control room prior to evacuation by placed them in a failsafe position to prevent the component from spuriously operating due to fire damage.

45 DAY SUBMITTAL

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

INITIAL CONDITIONS

- A plant fire is in progress that requires evacuation of Unit 3 Control Room
- AP/3/A/1700/050(Challenging Plant Fire) is in progress
- You have completed AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation) through step 9

INITIATING CUES

The Control Room SRO directs you to complete AP/3/A/1700/050(Challenging Plant Fire) Enclosure 5.5.(OATC Actions for Control Room Evacuation)

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

AO-427

Reset an Emergency Feedwater Pump Turbine

CANDIDATE

EXAMINER

REGION II
INITIAL LICENSE EXAMINATION
JOB PERFORMANCE MEASURE

Task:

Reset the TDEFWP

Alternate Path:

NO

Facility JPM #:

AO-027

K/A Rating(s):

System: 061
K/A: A2.04
Rating: 3.4/3.8

Task Standard:

Emergency Feedwater Pump Turbine is reset

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

Rule 3 (Loss of Main or Emergency FDW)
EOP Enclosure 5.26 (Manual Start of TDEFDWP)

Validation Time: 8 min.

Time Critical: No

Candidate: _____
NAME

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time: _____

Examiner: _____
NAME

SIGNATURE

DATE

Comments

SIMULATOR OPERATOR INSTRUCTIONS

NONE

45 DAY SUBMITTAL

Tools/Equipment/Procedures Needed

EOP Enclosure 5.26 (Manual Start of TDEFDWP)

READ TO OPERATOR

DIRECTIONS TO CANDIDATE

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 2 Reactor has tripped from 100% power.

A loss of all 4160V power has occurred.

Unit 2 TD EFDW Pump is tripped.

Rule 3 is in progress.

INITIATING CUE

Control Room Supervisor directs you to perform EOP Enclosure 5.26 (Manual Start of TDEFDWP) to reset the Unit 2 TDEFWP.

START TIME: _____

<p>STEP 1: Step 1</p> <p>(Procedure is pre-staged at the TDEFWP. Provide the candidate a copy once the pre-staged copy is located)</p> <p>Verify TDEFDWP trip device tripped.</p> <p>STANDARD: Candidate determines from the Initial Conditions that Unit 2 TD EFDW pump is tripped.</p> <p>Cue: <i>If the candidate asks for local indications for Unit 2 TD EFDW pump being tripped, inform him/her that "the latch block is in the down position, the spring plate is in the down position, and the hand trip lever is in the down position".</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 2: Step 2</p> <p>Notify CRO to place TDEFDWP switch in PULL TO LOCK.</p> <p>STANDARD: Candidate notifies Unit 2 control room using radio/phone to place Unit 2 TD EFDW pump in PULL TO LOCK.</p> <p>Cue: <i>Indicate to candidate that Unit 2 TD EFDW pump is in PULL TO LOCK.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 3: Step 3</p> <p>Push reset lever toward turbine shaft until engaged:</p> <p>STANDARD: Candidate pushes the reset lever towards the turbine shaft to ensure it is engaged.</p> <p>Cue: <i>Indicate to candidate that the reset lever is engaged.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4: Step 4</p> <p>Rotate spindle fully clockwise.</p> <p>STANDARD: Candidate rotates 2MS-94 spindle fully clockwise until it reaches a hard stop.</p> <p>Cue: <i>Indicate to candidate that the spindle is in its full clockwise position.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 5: Step 5</p> <p>Rotate spindle fully counter-clockwise.</p> <p>STANDARD: Candidate observes spring plate in its full up position.</p> <p>Cue: <i>Indicate to candidate that the spindle is in its full counter-clockwise position.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: Step 6</p> <p>Rotate spindle ¼ turn clockwise.</p> <p>STANDARD: Candidate rotates spindle ¼ turn clockwise.</p> <p>Cue: <i>Indicate to candidate that the spindle is ¼ turn from full counterclockwise position.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 7: Step 7</p> <p>Notify CRO to place TDEFDWP switch in RUN:</p> <p>STANDARD: Candidate notifies Unit 2 CRO by phone/radio to place Unit 2 TD EFDW pump switch in RUN:</p> <p>Cue: <i>Indicate to candidate that Unit 2 TD EFDW pump switch is in the RUN position, the TDEFWP can be seen and heard to be starting.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 8: Step 8</p> <p>Verify 2MS-93 (TD EFDWP Steam Supply Trip Valve) closed</p> <p>STANDARD: Candidate locates 2MS-93 and determines the valve is Open.</p> <p>Cue: <i>Indicate to candidate using 2MS-93 position indicator that the valve is Open and steam flow is audible.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 9:</u> Step 8 RNO</p> <p>GO TO Step 11</p> <p><u>STANDARD:</u> Candidate goes to step 11.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 11</p> <p>Verify TDEFDWP running</p> <p><u>STANDARD:</u> Candidate observes indications such as turbine shaft rotating, discharge pressure, and hydraulic oil pressure to determine that it is operating.</p> <p><i>Cue: Indicate to candidate that Unit 2 TD EFDW pump is operating.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 12</p> <p>EXIT this enclosure</p> <p><u>STANDARD:</u> Candidate exits the enclosure</p> <p><i>Cue: Indicate to candidate that this task is complete.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: _____

CRITICAL STEP EXPLANATIONS

STEP #	Explanation
3	This step is required to reset 2MS-94
4	This step is required to reset 2MS-94
5	This step is required to reset 2MS-94

45 DAY SUBMITTAL

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

INITIAL CONDITIONS

Unit 2 Reactor has tripped from 100% power.

A loss of all 4160V power has occurred.

Unit 2 TD EFDW Pump is tripped.

Rule 3 is in progress.

INITIATING CUE

Control Room Supervisor directs you to perform EOP Enclosure 5.26 (Manual Start of TDEFDWP) to reset the Unit 2 TDEFWP.