

## Final Submittal

### **OCONEE JUNE 2004 EXAM 50-26912004-301, 50-27012004-301, & 50-28712004-301 JUNE 14 - 18 & 25,2004**

1. Administrative Questions/JPMs
2. In-plant JPMs
3. Control Room JPMs (simulator JPMs)

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

**Admin-100**

**DETERMINE SDM  
WITH A DROPPED CONTROL ROD**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

DETERMINE SDM WITH A DROPPED CONTROL ROD

**Alternate Path:**

Yes, determine that 1% SDM does not exist and boratlon is required within 15 minutes.

**Facility JPM #:**

Admin-100

**K/A Rating(s):**

Gen 2.1.23 3.9/4.0

**Task Standard:**

PT/1/A/1103/15, Reactivity Balance Procedure is used to verify > 1% SDM with one inoperable (dropped) CR within 1 hour. Determine that 1% SDM does not exist and boratlon is required within 15 minutes.

**Preferred Evaluation Location:**

Simulator  In-Plant

**Preferred Evaluation Method:**

Perform  Simulate

**References:**

PT/1/A/1103/15, Reactivity Balance Procedure  
AP/1/A/1700/15, Dropped Control Rods  
Technical Specifications:  
3.1.4, Control Rod Group Alignment Limits  
3.2.1, Regulating Rod Position Limits

**Validation Time:** 10 min.

**Time Critical:** YES

**Candidate:**

\_\_\_\_\_  
NAME

Time Start:  
Time Finish:

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:**

\_\_\_\_\_  
NAME

\_\_\_\_\_  
SIGNATURE

\_\_\_\_\_  
DATE

COMMENTS

**SIMULATOR OPERATOR INSTRUCTIONS:**

1. Recall Snap 205
2. Import Admin-100 Simulator files

**Tools/Equipment/Procedures Needed:**

PT/1/A/1103/015, Reactivity Balance Procedure

OP/0/A/1105/009, Control Rod Drive System

Technical Specifications:

3.1.4, Control Rod Group Alignment Limits

3.2.1, Regulating Rod Position Limits

**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:**

You are the Unit 1 OAYC and Group 6 Rod 3 has dropped into the core. Reactor power is stable at  $\approx$  55%. AP/1/A/1700/15, Dropped Control Rods, has been completed up to step 4.5.

**INITIATING CUES:**

The SRO in the Control Room directs you to continue with AP/1/A/1700/15, Dropped Control Rods.

**TIME CRITICAL**

START TIME: \_\_\_\_\_

<p><b>STEQ:</b> Within one hour verify &gt; 1% SDM with allowance to the inoperable control rod. Perform PT/1/A/1103/15, Reactivity Balance Procedure.</p> <p><b>STANDARD:</b> Obtain copy of PT/1/A/1103/15, Reactivity Balance Procedure.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Determine proper enclosure to use.</p> <p><b>STANDARD:</b> Enclosure 13.19, Shutdown Margin at Power, Is chosen.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b> Refer to the COLR. Use the "Control Rod Position Setpoints 1 inoperable Rod, 4 Pump Flow" curve. Verify SDM is <math>\geq 1\%</math> AWK by verifying that the control rod position and power level are within the acceptable region of the curve.</p> <p><b>STANDARD:</b> SDM is determined to be <math>\leq 1\% \Delta K/K</math>.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 4:</b> Appropriate actions are taken per ITS 3.1.4, 3.1.5 and 3.2.1.</p> <p><b>STANDARD:</b> Refer to ITS 3.1.4, 3.1.5 and 3.2.1 and determine that initiation of boration to restore SDM to within limits is required within 15 minutes.</p> <p><b>CUE:</b> Inform student that an RO is commencing boration.</p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END OF TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: \_\_\_\_\_

**STEP**                      **ONS:**

<b>STEP #</b>	<b>Explanation</b>
3	Step is necessary, the operator must interpret the <b>4 RCP curve</b> to ensure adequate SDM.
4	Step <del>is</del> necessary; initiation of boration must occur within 15 minutes <i>to</i> restore SDM.

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

**INITIAL CONDITIONS:**

You are the Unit 1 OATC and Group 6 Rod 3 has dropped into the core. Reactor power is stable at  $\approx 55\%$ . AP/1/A/1700/15, Dropped Control Rods, is complete up to step 4.5.

**INITIATING CUES:**

The SRO in the Control Room directs you to continue with AP/1/A/1700/15, Dropped Control Rods.

**TIME CRITICAL**

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

**Admin- D3**

**PERFORM MANUAL RCS LEAKAGE CALCULATION**

**CANDIDATE**

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**EXAMINER**

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

Task:

**PERFORM MANUAL RCS LEAKAGE CALCULATION**

**Alternate Path:**

No

**Facility JPM #:**

CRO-43

**K/A Rating(s):**

Gen 2.1.7 3.7/4.4

**Task Standard:**

RCS Leakage is correctly calculated within .01 gpm of attached key.

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ In-Plant X \_\_\_\_\_

**Preferred Evaluation Method:**

Perform X Simulate \_\_\_\_\_

**References:**

PT/O/A/0600/001A, Loss Of Computer  
PT/1/A/600/10, Reactor Coolant Leakage

**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:**

NONE

**Tools/Equipment/Procedures Needed:**

Enclosure 43.3 of PT/1/A/600/10

**READ PO 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 computer repairs are expected to be extended through turnover for hardware replacement. The boss of Computer procedure PT/O/A/0600/001A, boss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

**INITIATING CUES:**

The Control Room SRO directs you to perform a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Enclosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2.

START TIME: \_\_\_\_\_

**Note: Data cues are only applicable if JPM is performed in *the* control room.**

**STEP 1:** Step 2.2  
After 1 hour, Record final set of data in "Table #1"

**STANDARD:** Student enters final set of data into "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).

**CUE: Present student with attachment of final data readings.**

**OR**

Student locates Prr level gauge on UB1 and enters value on data sheet.

**CUE: Prr Level 269.0 inches**

Student locates Quench Tank level on AB1 and enters value on data sheet.

**CUE: Quench Tank Level 84.9 inches**

Student locates LDST level gauge on UBI and enters value on data sheet.

**CUE: LDST Level 73.4 inches**

Student locates Tave meter on UB1 and enters value on data sheet.

**CUE: Tave Indication 579.0°F**

Student locates Power meters on UBI and enters value on data sheet

**CUE: Power Range NI indicates 100.1%**

Student locates RCS NR Pressure chart on UBI and enters value on data sheet.

**CUE: RCS NR Pressure chart 2450 psig**

Student locates Group 7 Control Rod Position on the Computer and enters value on data sheet.

**CUE: Group 7 Control Rod Position is 93.6%**

**COMMENTS:**

\_\_\_ SAT

\_\_\_ UNSAT

<p><b><u>STEP 2:</u></b> Step 2.3 Calculate and record Change values in "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).</p> <p><b><u>STANDARD</u></b> Student performs calculation and records Change values in "Table #1" of Enclosure 13.3 (Manual Leakage Calculation Data Sheet).</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 3:</u></b> Step 2.4 Calculated Corrected PZW Level Change:</p> <p><b><u>STANDARD:</u></b> <math>(- 6.831 \text{ inches/}^\circ \text{ F} \times \underline{0.1}^\circ \text{ F}) + \underline{1.0} \text{ inches} = \underline{0.3169} \text{ inches}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 4:</u></b> Step 2.5 Convert Corrected PZR Level Change to gallons:</p> <p><b><u>STANDARD:</u></b> <math>\underline{0.3269} \text{ inches} \times 14.364 \text{ gallons/inch} = \underline{4.552} \text{ gallons}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 5:</u></b> Step 2.6 Convert QT Level Change to gallons:</p> <p><b><u>STANDARD:</u></b> <math>\underline{-0.3} \text{ inches} \times 34.94 \text{ gallons/inch} = \underline{-10.482} \text{ gallons}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 6:</b> Step 4.7 Convert LDST Level Change to gallons:</p> <p><b>STANDARD:</b> <u>-0.3</u> inches X 30.956 gallons/inch = <u>-9.287</u> gallons</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 7:</b> Step 2.8 Calculated Total Volume Change:</p> <p><b>STANDARD:</b> <u>4.552</u> gallons + <u>-10.482</u> gallons + <u>(-9.287 gallons)</u> = <u>-25.247</u> gallons</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b> Step 2.9 Calculate RCS Leakage Rate:</p> <p><b>STANDARD:</b> <u>-45.217</u> gallons ÷ <u>60</u> minutes = <u>-0.254</u> gpm (± .01 gpm)</p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END TASK</b></p>	<p><b>CRITICAL TAS</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

**CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
8	Necessary data calculation to properly determine manual RCS leakage rate.

**Note: If complementary errors occur while performing calculations in steps 3 – 7 they will become critical. Credit will not be given for obtaining the correct answer for the wrong reason.**

### Manual RCS Leakage Final Data

Parameter	Final
Time	0115
Pzr level	219.8 inches
Quench Tank Level	84.9 inches
LDST Level	73.4 inches
Tave Indication	579.0°F
Power Range NI	100.1%
RCS NR Pressure	2150 psig
G 7 Control Rod Position	93.6%

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

**INITIAL CONDITIONS:**

Unit 1 computer repairs are expected to be extended through turnover for hardware replacement. The Loss of Computer procedure PT/O/A/0600/001A, Loss Of Computer, is in progress, however an RCS Leakage Calculation has not been performed during this shift.

**INITIATING CUES:**

The Control Room SRO directs you to perform a manual RCS leakage per PT/1/A/600/10 (Reactor Coolant Leakage). The initial data given was collected one hour previously. Use the final set of leakage data and manually calculate the RCS leakage rate. Endosure 13.3 of PT/1/A/600/10 (Reactor Coolant Leakage) is complete up to step 2.2.

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

**Admin-110**

**Determine Minimum Shift Staffing**

**CANDIDATE**

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**EXAMINER**

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

**Task:**

Determine MINIMUM staffing requirements for the shift for NEO's, RO's and SRO's

**Alternate Path:**

NO

**Facility JPM #:**

Admin-110

**K/A Rating(s):**

Gen 2.1.4      2.3/3.4

**Task Standard:**

SLC 16.13.1-1 (Minimum Station Staffing Requirements) is used to correctly determine MINIMUM staffing requirements for the shift.

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ in-Plant X

**Preferred Evaluation Method:**

Perform \_\_\_\_\_ Simulate X

**References:**

SLC 16.13.1-1 (Minimum Station Staffing Requirements)

**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:**

NONE

**Tools/Equipment/Procedures Needed:**

SLC 16.13.1-1

**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:**

Plant conditions are as following:

- Unit 1 is in MODE 5 with fuel handling in the SFP in progress
- Unit 2 is in MODE 1 at 73% with 2A HPIP OOS for the last 85 hours
- Unit 3 is in MODE 1 at 700% power
  
- 2 on-shift NEO's are qualified as fire brigade leader
- 1 RP Tech is fire brigade qualified

**INITIATING CUE:**

What are the **MINIMUM** staffing requirements for the shift?

<b>Position</b>	<b>Minimum Number</b>
OSM	
STA	
SRO	
RO	
NLO	
SPOC	N/A
Chemistry Technician	N/A
RP Technician	N/A

START TIME: \_\_\_\_\_

<p><u>STEP 1:</u> Reference SLC 16.13.1</p> <p><u>STANDARD:</u> Reference SLC 16.13.1-1 table</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Reference SLC 16.13.1-1 for plant conditions</p> <p><u>STANDARD:</u> Determine correct table to be used: Column for 2 units in MODE 1-4 from two control rooms based on: Unit 1 is in MODE 5 with fuel handling in the SFP in progress</p> <ul style="list-style-type: none"> <li>• Unit 2 is in MODE █ at 73% with 2A HPIP OOS for the last 85 hours</li> <li>• Unit 3 is in MODE 1 at 100% power</li> </ul> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> Determine correct number from column for 2 units in MODE 1-4 from two control rooms</p> <p><u>STANDARD:</u> 1 OSM, 1 STA, 5 SRO, 5 RO, and 8 NEO</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> Determine that available NEO is fire brigade leader qualified</p> <p><u>STANDARD:</u> 2 on-shif NEO's are qualified as fire brigade leader 1 RP Tech is fire brigade qualified</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 5:</u> Adjust total staffing numbers per Step 4</p> <p><u>STANDARD:</u> Subtract 1 SRO based on NEO qualified as fire brigade leader: 1 OSM, 1 STA, <u>4</u> SRO, 5 RO, and 8 NEO</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> Reference TS 3.5.2.B</p> <p><u>STANDARD:</u> Determine that TS 3.5.2.B is applicable: 2A HPIP OOS for &gt; 72 hours</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> Adjust total staffing numbers per Step 6</p> <p><u>STANDARD:</u> Add 1 RO based on TS 3.5.2.B applying 1 OSM, 1 STA, 4 SRO, <u>6</u> RO, and 8 NEO</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> Adjust total staffing numbers per Step 7</p> <p><u>STANDARD:</u> Add 2 NEOs based on TS 3.5.2.B applying 1 OSM, 1 STA, 4 SRO, 6 RO, and <u>10</u> NEO</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 9:</b> Determine total staffing requirements</p> <p><b>STANDARD:</b> 1 OSM, 1 STA, 4 SRO, 6 RO, and 10 NEO</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 30%; padding: 5px;">Position</th> <th style="width: 70%; padding: 5px;">Minimum Number</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">OSM</td> <td style="padding: 5px;">1</td> </tr> <tr> <td style="padding: 5px;">STA</td> <td style="padding: 5px;">1</td> </tr> <tr> <td style="padding: 5px;">SRO</td> <td style="padding: 5px;">4</td> </tr> <tr> <td style="padding: 5px;">RO</td> <td style="padding: 5px;">6 <del>10</del></td> </tr> <tr> <td style="padding: 5px;">NLO</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">SPOC</td> <td style="padding: 5px;">NIA</td> </tr> <tr> <td style="padding: 5px;">Chemistry Technician</td> <td style="padding: 5px;">NIA</td> </tr> <tr> <td style="padding: 5px;">RP Technician</td> <td style="padding: 5px;">NIA</td> </tr> </tbody> </table> <p style="margin-top: 10px;"><b>COMMENTS:</b></p>	Position	Minimum Number	OSM	1	STA	1	SRO	4	RO	6 <del>10</del>	NLO		SPOC	NIA	Chemistry Technician	NIA	RP Technician	NIA	<p><b>CRITICAL STEP</b></p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
Position	Minimum Number																		
OSM	1																		
STA	1																		
SRO	4																		
RO	6 <del>10</del>																		
NLO																			
SPOC	NIA																		
Chemistry Technician	NIA																		
RP Technician	NIA																		

**TIME STOP:** \_\_\_\_\_

**CRITICAL STEP EXPLANATIONS:**

STEP #	Explanation
10	Determine staffing requirements

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

**INITIAL CONDITIONS:**

Plant conditions are as following:

- Unit 1 is in MODE 5 with fuel handling in the SFP in progress
- Unit 2 is in MODE 1 at 73% with 2A HPIP OOS for the last 85 hours
- Unit 3 is in MODE 1 at 100% power
  
- 2 on-shift NEO's are qualified as fire brigade leader
- 1 RP Tech is fire brigade qualified

**INITIATING CUE:**

What are the MINIMUM staffing requirements for the shift?

<b>Position</b>	<b>Minimum Number</b>
OSM	
STA	
SRO	
RO	
NLO	
SPOC	NIA
Chemistry Technician	N/A
RP Technician	NIA



REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

Task:

Perform surveillance to verify SSF RCMUP Operability

Alternate Path:

No

Facility JPM #:

NEW

K/A Rating(s):

System: GEN

K/A: 2.2.12

Rating: 3.0/3.4

Task Standard:

Verify SSF RCMUP Operability using PT/1/A/0600/001 (Periodic Instrument Surveillance), Encl. 13.1 (Mode 1 & 2)

Preferred Evaluation Method:

Preferred Evaluation Location:

Perform  Simulate

Simulator  In-Plant

References:

PT/1/A/0600/001 (Periodic Instrument Surveillance), Encl. 13.1 (Mode 1 & 2) Page 35 of 36

Validation Time: 15 minutes

Time Critical: NO

Candidate:

NAME

Time Finish: \_\_\_\_\_

Time Start: \_\_\_\_\_

Performance Rating: SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

Examiner:

NAME

SIGNATURE

DATE

COMMENTS

**SIMULATOR OPERATOR INSTRUCTIONS:**

NONE

**Tools/Equipment/Procedures Needed:**

- PT/1/A/0600/001 (Periodic Instrument Surveillance), Encl. 13.1 (Mode 1 & 2) Page 35 of 36
- Enclosure "Unit 1&2 Spent Fuel Pool Level Vs Temperature Curve" of OP/0/A/1108/001 (Curves And General Information)

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and slate 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:**

- U2EOC20 outage in progress
- Unit 2 was shutdown (subcritical) on 3120104 at 0100
- Unit 2 core is defueled
- Spent Fuel Pool Level = +0.1 feet
- Spent Fuel Pool Temperature = 91°F
- Current date and time: 3/26/04 at 1100
- PT/600/001, Enclosure 13.1 in progress

**INITIATING CUES:**

The SRO instructs you to continue with PT/600/001, Enclosure 13.1 starting at the top of page 35.

START TIME: \_\_\_\_\_

<p><u>STEP 1:</u> Determine if all fuel in SFP subcritical &gt; maximum days specified on Enclosure "Unit 1&amp;2 Spent Fuel Pool Level Vs Temperature Curve"</p> <p><u>STANDARD:</u> Refer to Enclosure "Unit 1&amp;2 Spent Fuel Pool Level Vs Temperature Curve" of OP/1108/001. Determine that Unit 2's fuel has been subcritical for 6 days and 10 hours. This is &lt; than the maximum days specified on Enclosure "Unit 1&amp;2 Spent Fuel Pool Level Vs Temperature Curve".</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Verify SFP level &gt; specified on appropriate curve of Enclosure "Unit 1&amp;2 Spent Fuel Pool Level Vs Temperature Curve".</p> <p><u>STANDARD:</u> Determine that the correct curve is " Day &gt; 6 &amp; ≤ 7".  <del>Determine</del> Spent Fuel Pool water temperature is 98°F by looking on SFP temperature gauge on 2AB3 or on the OAC  <i>NC</i>  <del>Determine</del> Spent Fuel Pool water level is + 0.10 feet by looking on SFP Level gauge on 2AB3.  <i>NC</i></p> <p><b>Cue: When a SFP temperature indication is located indicate to the candidate that SFP temperature = 98°F</b></p> <p>Determine Spent Fuel Pool water level is + 0.10 feet by looking on SFP Level gauge on 2AB3.</p> <p><b>Cue: When the Unit 1 &amp; 2 SFP level indication is located indicate to the candidate that SFP Level = + 0.1 feet.</b></p> <p>Determine that SFP level is <b>NOT</b> &gt; than the appropriate curve.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> If limit exceeded, SSF RCMUP is inoperable.</p> <p><u>STANDARD:</u> Declare the <b>SSF RCMUQ</b> inoperable.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

TOP TIME: \_\_\_\_\_

**CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
<b>1</b>	Must determine that some fuel has been subcritical < than the maximum days specified on Enclosure "Unit 1&2 Spent Fuel Pool Level Vs Temperature Curve"
<b>2</b>	Required to determine is SFP level is adequate.
<b>3</b>	SSF RCMUP is declared inoperable.

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

**INITIAL CONDITIONS:**

- U2EOC20 outage in progress
- Unit 2 was shutdown (subcritical) on 3/20/04 at 0100
- Unit 2 core is defueled
- Spent Fuel Pool Level = +0.1 feet
- Spent Fuel Pool Temperature = 91°F
- Current date and time: 3/26/04 at 1100
- PT/600/001, Enclosure 13.1 in progress

**INITIATING CUES:**

The SRO instructs you to continue with PT/600/001, Enclosure 13.1 starting at the top of page 35.

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

**Admin-300**

**Calculate the Maximum Permissible Stay Time  
Within Emergency Dose Limits (EDL)**

**CANDIDATE**

---

**EXAMINER**

---

REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

Task:

Calculate the Maximum Permissible Stay Time Within Emergency Dose Limits

Alternate Path:

NIA

Facility JPM #:

NIA

KIA Rating(s):

Gen 2.3.4      2.5/3.1

Task Standard:

Calculate the Maximum Permissible Stay Time Within Emergency **Dose** Limits ( $\pm$  5 minutes).

Preferred Evaluation Location:

Simulator \_\_\_\_\_ In-Plant   X  

Preferred Evaluation Method:

Perform   X   Simulate \_\_\_\_\_

References:

NSD-507, Radiation Protection

OMP 1-18, Implementation Standard During Abnormal And Emergency Events

Validation Time: 20 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**

**Tools/Equipment/Procedures Needed:**

None

**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:**

1. Steam Generator Tube Rupture has occurred on Unit 3
2. Emergency Dose Limits are in effect
3. NEO "A" has received 2.26 R TEDE this year
4. The following tasks are required to be performed:

#	TASK	TIME REQUIRED	DOSE RATE
1	Closing 3C-573	12 min	5.31 Whr
2	Open 3FDW-313	4 min	19.75 R/hr
3	Open all Unit 3's ADVs		3.65 Whr

Note: **Assume no** dose received **while** travelling between tasks.

**INITIATING CUE:**

Refer to the above information. NEO "A" has completed tasks 1 and 2 in the time required. How long does he have to complete task 3 without exceeding his Emergency Dose Limits?

START TIME: \_\_\_\_\_

Note: Candidate may perform these steps in a different order however the calculated stay time should be correct.

Note: Candidate should understand the following:

1. EDL is 5 R per event (**LOCA** or SGTR).
2. Current exposure for the year is not counted toward the Emergency Dose Limit (**EDL**).

<p><b><u>STEP 1:</u></b> Determine dose received while performing task 1.</p> <p><b><u>STANDARD:</u></b> Determine dose received while performing task 1.</p> <p><math>5.31 \text{ Whr} \times 1\text{hr}/60 \text{ min} \times 12 \text{ min} = 1.06 \text{ R}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>UNSAT</p>
<p><b><u>STEP 2:</u></b> Determine dose received while performing task 2.</p> <p><b><u>STANDARD:</u></b> Determine dose received while performing task 2.</p> <p><math>19.75 \text{ Whr} \times 1\text{hr}/60 \text{ min} \times 4 \text{ min} = 1.32 \text{ R}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 3:</u></b> Determine dose remaining from EDLs.</p> <p><b><u>STANDARD:</u></b> Determine dose remaining from EDLs.</p> <p><math>5\text{R} - 1.06\text{R} - 1.32\text{R} = 2.62 \text{ R}</math></p> <p><b><u>COMMENTS:</u></b></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>UNSAT</p>

<p><b>STEP 4:</b> Determine time available for the NEO to complete <b>task 3</b> without exceeding EDL.</p> <p><b>STANDARD:</b> Stay time is calculated to be:</p> $\frac{\text{Available Dose}}{\text{Dose Rate}} = \frac{2.62 \text{ R}}{3.65 \text{ R/hr}} = .718 \text{ hr} \times \frac{60 \text{ min}}{1 \text{ hr}} = 43.1 \text{ min}$ <p style="text-align: right;"><b>(± 5 minutes)</b></p> <p><b>COMMENTS:</b></p> <p style="text-align: right;"><b>END OF TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
--	---

**TIME STOP:** \_\_\_\_\_

**CRIT STEP. EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
1	Required to calculate stay time.
2	Required to calculate stay time.
3	Required to calculate stay time.
4	Required to calculate stay time.

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

**INITIAL CONDITIONS:**

1. Steam Generator Tube Rupture has occurred on Unit 3
2. Emergency Dose Limits are in effect
3. NEO "A" has received 2.26 R TEDE this year
4. The following tasks are required to be performed:

#	TASK	TIME REQUIRED	DOSE RATE
1	Closing 3C-573	12 min	5.31 R/hr
2	Open 3FDW-313	4 min	19.75 R/hr
3	Open all Unit 3's ADVs		3.65 R/hr

**Note: Assume no dose received while traveling between tasks.**

**INITIATING CUE:**

Refer to the above information. NEO "A" has completed tasks 1 and 2 in the time required. How long does he have to complete task 3 without exceeding his Emergency Dose Limits?

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

**Admin-402**

**Perform Actions for Medical Emergency**

**CANDIDATE**

---

**EXAMINER**

---

REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Perform Actions for Medical Emergency

**Alternate Path:**

No

**Facility JPM #**

NEW

**K/A Rating(s):**

System: GEN  
K/A: 2.4.39  
Rating: 3.3/3.1

**Task Standard:**

Complete RP/1000/016, Encl. 4.1 (Medical Response) as required

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ In-Plant X

**Preferred Evaluation Method:**

Perform \_\_\_\_\_ Simulate X

**References:**

RP/1000/016, Encl. 4.4 (Medical Response)

**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:**

NONE

**Tools/Equipment/Procedures Needed:**

RP/1000/016, Encl. 4.1 (Medical Emergency Action – Routine Operations)

**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:**

1. You have answered a call on 4911 (emergency line) reporting a medical emergency.
2. The caller is still on the line.

**INITIATING CUES:**

The SRQ in the control room instructs you perform the required actions for a medical emergency.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Determine the appropriate procedure to use.</p> <p><b>STANDARD:</b> RP/O/B/1000/016 (Medical Response) is referenced and Enclosure 4.1 (Medical Emergency Actions - Routine Operations) is determined to be the appropriate procedure to use. Enclosure 4.1 is obtained from notebook located in the front of the control room desk or from the cart in the TSC.</p> <p><b>Cue:</b> When procedure is located give candidate a copy of Enclosure 4.1.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Step 1.2 Complete the following accident information:</p> <p style="padding-left: 40px;">Name of person reporting injury</p> <p style="padding-left: 40px;">Call back number</p> <ul style="list-style-type: none"> <li>• Name of person injured</li> <li>• Supervisor of injured person</li> <li>• Location injury occurred</li> <li>• Brief description of injury</li> <li>• Time</li> </ul> <p><b>Note:</b> The evaluator will play the role of the person reporting the injury. Answer questions by referring to the "Medical Emergency Phone Call Information Sheet".</p> <p><b>STANDARD:</b> The candidate obtains the above information from the evaluator by asking the appropriate questions and completes step 1.2 correctly.</p> <p><b>Note:</b> Refer to the completed procedure as an answer key.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>SEQ :</b> Step 1.3 <b>IF</b> There is a Security Event in progress, <b>THEN</b> Continue with ...</p> <p><b>STANDARD:</b> Determine a Security Event is not in progress and N/A step 1.3.</p> <p><b>Cue: If asked, inform candidate a Security Event is not in progress.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>UNSAT</p>
<p><b>STEP 4:</b> Step 1.4.1 Use Plant Page to request all MERT members to respond to the incident.</p> <p><b>STANDARD:</b> The phone is used to access the Plant Page and request all MERT members to respond to the incident.</p> <p><b>Cue: inform candidate to simulate only.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 5:</b> Step 1.4.2 Use the radio paging system to request MERT members to respond to the incident.</p> <ul style="list-style-type: none"> <li>• Transmit "Standby for Emergency Message"</li> <li>• Press the "instant Call" button labeled "MERT"</li> <li>• Wait for the red "Transmit" light on the radio to turn off</li> <li>• Transmit message</li> </ul> <p><b>STANDARD:</b> The radio paging system is used to request MERT members to respond to the incident by:</p> <ul style="list-style-type: none"> <li>• Transmit "Standby for Emergency Message"</li> <li>• Press the "instant Call" button labeled "MERT"</li> <li>• Wait for the red "Transmit" light on the radio to turn off</li> <li>• Transmit message "MERT members respond to a medical emergency in the Unit 3 clean side of the change room."</li> </ul> <p><b>Note: The red "Transmit" light is normally green and is located next to the "MERT" button on the radio.</b></p> <p><b>Cue: inform candidate to simulate only.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 6:</b> Step 1.4.3 Repeat steps 1.4.1 and 1.4.2</p> <p><b>STANDARD:</b> The Plant Page and the radio paging system are used a second time to request MERT members to respond to the incident.</p> <p><b>Cue: Inform candidate to simulate only.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 7:</b> Step 1.4.4 Call Security at one of the following extensions and request they have security MERT members respond to the emergency</p> <ul style="list-style-type: none"> <li>• SAS (Secondary Alarm Station) 2205 or 2767</li> <li>• CAS (Central Alarm Station) 2222 or 2958</li> </ul> <p><b>STANDARD:</b> Security is notified at one of the above extensions and are requested to have security MERT members respond to the emergency.</p> <p><b>Cue: Inform candidate to simulate only.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b> Step 1.4.5 <b>IF</b> The incident location is away from the main plant (WOE, Complex, Keowee Hydro, etc.) and incident occurs during normal working hours, <b>THEN</b> Notify shuttle Bus...</p> <p><b>STANDARD:</b> Determine that this step does not apply and N/A step 1.4.5</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 9:</b> Step 1.5 <b>IF</b> A mass casualty event has occurred or is suspected, and a centralized treatment area <b>is</b> needed. and plant conditions allow, <b>THEN</b> Make a PA Announcement...</p> <p><b>STANDARD:</b> Determine that this step does not apply and N/A step 1.5</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 10:</b> Step 1.6  <b>IF</b> Hospital evacuation is needed as determined by MERT Command or as indicated by Step 1.6.1,  <b>THEN</b> Arrange transport of patient to the hospital by one of the following means:</p> <ul style="list-style-type: none"> <li>• EMS (ambulance)  Dial 9-911 from the Operations Shift Manager's phone or Unit 1 Control Room SRO's phone or dial 911 from the bell South line - Unit 1, 2, and 3 Control Rooms. Refer to Step 1.6.2, prior to requesting EMS.</li> <li>• Company vehicle (less serious injury)</li> <li>• Personal vehicle (less serious injury)</li> </ul> <p><b>STANDARD:</b> Ambulance is requested by calling 9-911. Ambulance is requested to come to Oconee Nuclear Station.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 11:</b> Step 1.6.1  <b>IF</b> Any of the following illnesses or injuries are reported on the emergency line (491 I )  <b>THEN</b> Immediately request EMS (ambulance) to respond to the site:</p> <ul style="list-style-type: none"> <li>• Unconsciousness</li> </ul> <p><b>STANDARD:</b> Determine that the injured is unconscious and perform step 1.6.1. (Step 10 above)</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 12:</b> step 1.6.2  <b>IF</b> The patient is known or suspected to be radiologically contaminated,  <b>THEN</b> Have <b>the</b> EMS dispatcher inform the EMS personnel to expect a contaminated person.</p> <p><b>STANDARD:</b> Determine that this step does not apply and N/A step 1.6.2</p> <p><b>Cue: If asked, inform candidate that the patient is NOT contaminated.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 13:</u> Step 1.6.3 Notify Security at 2222 that the ambulance is enroute</p> <p><u>STANDARD:</u> Security is notified that the ambulance is enroute</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Step 1.6.4 Notify MERT Command that the ambulance is enroute.</p> <p><u>STANDARD:</u> MERT Command is notified via radio that the ambulance is enroute.</p> <p><b><i>Cue: Inform candidate to simulate only.</i></b></p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 1.6.5 Notify World of Energy Duty Person (Ext. 4602 or Pager #777-9414).</p> <p><u>STANDARD:</u> World of Energy Duty Person is notified by phone.</p> <p><b><i>Cue: Inform candidate to simulate only.</i></b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u> Step 1.7 Notify the Occupational Health Unit at ONS during normal working hours (4652).</p> <p><u>STANDARD:</u> Occupational Health Unit at ONS is notified by phone.</p> <p><b><i>Cue: Inform candidate to simulate only.</i></b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u> Step 1.8 <b>IF</b> Radiological contamination is involved and the person is being sent to a hospital. <b>THEN</b> Complete...</p> <p><u>STANDARD:</u> Determine that this step does not apply and N/A step 1.8.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 18:</b> Step 1.9 Remind MERT Command that a Patient Treatment Form needs to be completed for all patients and that the completed form is to be sent to the Medical Unit for inclusion in the patients medical file.</p> <p><b>STANDARD:</b> MERT Command is informed that a Patient Treatment Form needs to be completed and sent to the Medical Unit.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 19:</b> Step 1.10 After normal working hours the Operations Shift Manager or designee shall report the following incidents to ONS Safety Duty Person who will determine if additional people need to be notified.</p> <p><b>STANDARD:</b> Determine that this step does not apply and N/A step 1.10.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 20:</b> Step 1.11 Verify the following notification in the event of a fatality or injuries to 3 or more people:</p> <p><b>STANDARD:</b> Determine that this step does not apply and N/A step 1.11.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 21:</b> Step 1.12 Notify STA to make appropriate notifications of the transport of an employee to an off site medical facility.</p> <p><b>STANDARD:</b> Notify the STA by phone or in person to make appropriate notifications of the transport of an employee to an off site medical facility.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 22:</u> Step 1.13 IF A death, near death, or major traumatic injury...</p> <p><u>STANBARD:</u> Determine step <b>does</b> not apply and N/A Step 1.13</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 23:</u> Step 1.14 The Operations Shift Manager (OSM) or designee shall ensure notification of next of kin, if applicable.</p> <ul style="list-style-type: none"> <li>• Fatality – Appropriate Division Manager performs notifications</li> <li>• Injury requiring hospitalization– Employee's Supervisor or Manager perform notification</li> </ul> <p><u>STANBARD:</u> Inform the OSM to perform this step as required.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 24:</u> Step 2.15 Submit completed Enclosure 4.1, (Medical Emergency Action –Routine Operations) to the Emergency Planning Section</p> <p><u>STANDARD:</u> Indicate that form would be submitted to the Emergency Planning Section.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

## Medical Emergency Phone Call Information Sheet

1. Name person calling  
John Adams
2. Call back number  
2322
3. Name of injured person  
David Smith
4. Supervisor of injured person  
Allan Jones
5. Location injury occurred  
Unit 3 HPI Pump Room  
The injured is currently located in the clean side of Unit 3's change room (3<sup>rd</sup> floor Aux Building).  
Injured is NOT contaminated
6. Description of injury  
The injured stood up to put on his hard hat and hit his head on a cable tray resulting in a laceration to top of head. The wound is continuing to bleed. The injured is unconscious.
7. Time  
Current time

## CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	Need to select <b>the</b> correct procedure.
2	Need the <b>correct</b> information to ensure proper actions are taken.
3	<b>Need</b> to determine a security event is not in progress <b>so</b> that MERT can be called.
4	Need to activate MERT.
10	Ambulance has to be requested.
14	MERT command should be notified so that the injured can be taken to the pickup point.

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

**INITIAL CONDITIONS:**

1. You have answered a call on **491 1** (emergency line) reporting a medical emergency.
2. The caller is still on the line.

**INITIATING CUES:**

The **SRO** in the control room instructs you perform the required actions for a medical emergency.

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

**Admin-403**

**Determine Emergency Classification and Protective  
Action Recommendations**

**CANDIDATE**

---

**EXAMINER**

---

REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Determine Emergency Classification and Protective Action Recommendations

**Alternate Path:**

NO

**Facility JPM #:**

SRO-007A

**K/A Rating(s):**

Gen 2.4.38 2.2/4.0

**Task Standard:**

Appropriate classification is determined and associated Protective Action Recommendations are made

**Preferred Evaluation Location:**

Simulator  X  In-Plant  X

**Preferred Evaluation Method:**

Perform   Simulate  X

**References:**

RP/O/B/1000/01  
RP/O/B/1000/02  
BASIS Document (Volume "A". Section "D" of the Emergency Plan)

**Validation Time: 20 min.**

**Time Critical: NO**

**Candidate:** \_\_\_\_\_

NAME

Time Start: \_\_\_\_\_

Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_ Question Grade \_\_\_\_\_ Performance Time \_\_\_\_\_

Examiner: \_\_\_\_\_

NAME

SIGNATURE

DATE

**Comments**

**SIMULATOR OPERATOR INSTRUCTIONS:**

NONE

**Tools/Equipment/Procedures Needed:**

RP/0/B/1000/01

RP/0/B/1000/02

BASIS Document (Volume "A", Section "D" of the Emergency Plan)

**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:**

0800: Civil demonstration occurring at the World of Energy by anti-nuke activists.

0900: Security reports to the OSM that, one or more persons has been observed cutting their way through the double security fences. RP/0/B/1000/007 (Security Event) is being used in conjunction with the Emergency Plan.

0905: intruders have been seen entering the SSF. Security has isolated the area around the SSF.

0910: Security reports that an explosion has occurred on the Keowee Dam and that water is beginning to leak through the dam in several places.

0930: Security reports that no additional bombs were found and that no additional intruders have been located.

**NOTE: All three Oconee Units remain in MODE 1 at 100% power during this event.**

**INITIATING CUE:**

You are to perform the required actions of the Emergency Coordinator by referring to RP/0/B/1000/01, Emergency Classification and determining the emergency classification and any Protective Action Recommendations.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Classify the Event</p> <p><b>STANDARD:</b> Refer to RP/0/B/1000/01 (Emergency Classification) Enclosure 4.6 (Fires/Explosions and Security Actions). Classify the event <b>as</b> a "Site Area <b>Emergency</b>" due to following:</p> <p>Bomb detonated in Keowee Dam</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Determine Protective Action Recommendations</p> <p><b>STANDARD:</b> Refer to RP/0/B/1000/002 (Control Room Emergency Coordinator Procedure) and GO TO Enclosure 4.2 (Site Emergency)</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b> <b>IF</b> it has been determined that an Emergency Action level for an Initiating Conditions has been met, <b>THEN</b> Declare a Site Area Emergency Time of Declaration: _____</p> <p><b>STANDARD:</b> Determine Initiating Conditions have been met and Declare a Site Area Emergency due to:</p> <ul style="list-style-type: none"> <li>• Bomb detonated in Keowee Dam</li> <li>OR</li> <li>• Imminent/actual failure of the Keowee Hydro dam</li> </ul> <p>Determine Time of Declaration is <b>present</b> time.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 4:</b> Appoint a person to maintain the Emergency Coordinator Log OR maintain the log yourself.</p> <p><b>STANDARD:</b> A person is appointed to maintain the Emergency Coordinator Log or indicate that you will maintain the log.</p> <p><b>Cue: Masked, indicate someone is maintaining the Emergency Coordinator Log.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 5:</b> Appoint Control Room Offsite Communicator(s).</p> <p><b>STANDARD:</b> A Control Room Offsite Communicator is appointed.</p> <p><b>Cue: If asked, indicate a Control Room Offsite Communicator has been appointed.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 6:</b> Provide the Protective Action Recommendations from Enclosure 4.7. (Condition A / Condition B Response Action). Step 1.0, for use by the Offsite Communicator if a Condition A, Imminent or Actual Dam Failure, exists.</p> <p><b>STANDARD:</b> Enclosure 4.7, (Condition A   Condition B Response Action) is used to determine that the following protective action recommendations are given to Oconee and Pickens County:</p> <ol style="list-style-type: none"> <li>1. Provide the following recommendation for Emergency Notification Form Section 15 (B) Evacuate: <ul style="list-style-type: none"> <li>• Move residents living downstream of the Keowee Hydro Project dams to higher ground.</li> </ul> </li> <li>2. Provide the following recommendation for Emergency Notification Form Section 15 (D) Other: <ul style="list-style-type: none"> <li>• Prohibit traffic flow across bridges identified on your inundation maps until the danger has passed.</li> </ul> </li> </ol> <p><b>Cue: If asked, inform the candidate that Keowee Dam failure is imminent</b></p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END OF TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: \_\_\_\_\_

## **CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
1	The candidate needs to be able to utilize the procedure and determine that a Site Area Emergency needs to be declared.
6	The candidate must be able to make recommendations to the local agencies as to what actions are necessary to protect the health and safety of the public.

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

**INITIAL CONDITIONS:**

0800: Civil demonstration occurring at the World of Energy by anti-nuke activists.

0900: Security reports to the QSM that, one or more persons has been observed cutting their way through the double security fences. RP/0/B/1000/007 (Security Event) is being used in conjunction with the Emergency Plan.

0905: Intruders have been seen entering the SSF. Security has isolated the area around the SSF.

0910: Security reports that an explosion has occurred on the Keowee Dam and that water is beginning to leak through the dam in several places.

0930: Security reports that no additional bombs were found and that no additional intruders have been located.

**NOTE: All three Oconee Units remain in MODE 1 at 100% power during this event.**

**INITIATING CUE:**

You are to perform the required actions of the Emergency Coordinator by referring to RP/0/B/1000/01, Emergency Classification and determining the emergency classification and any Protective Action Recommendations.

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

**CRO-012A**

**RECOVER A DROPPED CONTROL ROD**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

RECOVER A DROPPED CONTROL ROD

**Alternate Path:**

Yes

**Facility JPM #**

CRO-012A

**K/A Rating(s):**

System: APE 005

K/A: AA2.03

Rating: 3.5/4.4

**Task Standard:**

Unit is tripped manually upon receipt of second dropped rod

**Preferred Evaluation Location:**

Simulator  In-Plant

**Preferred Evaluation Method:**

Perform  Simulate

**References:**

AP/11A/1700/15 (10/10/02)

OP/0/A/1105/09 (11/21/02)

T.S. 3.1 4

OMP 1-18

**Validation Time:** 20 minutes

**Time Critical:** NO

**Candidate:** \_\_\_\_\_

NAME

Time Start: \_\_\_\_\_

Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_

NAME

SIGNATURE

DATE

**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

1. Recall Snap 206
2. Import **files** for CRO-12A
3. GotoRUN

**Tools/Equipment/Procedures Needed:**

Enclosure 5.3 of AP/011 (Recovery From Loss of Power)

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Unit ~~#~~dropped a control rod in Group 6 approximately one hour ago and the unit is stable at 55%.

The Subsequent Actions of AP/15, DROPPED CONTROL RODS, have been completed through step 4.9.

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

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

Enclosure 4.10 of OP/0/A/1105/09 has been completed up to step 2.0.

**INITIATING CUE::**

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

START TIME: \_\_\_\_\_

<p><u>STEP 1:</u>            Step 2.1 Take manual control of rods at the Diamond Control Station: Ensure the SG Master in HAND Ensure the Diamond Station in MANUAL</p> <p><u>STANDARD:</u>    The manual pushbutton for the SG Master handlauto station is depressed. The White Hand light comes ON and the Red Auto light Goes OFF.  The AUTO/MANUAL pushbutton on the Diamond Control Panel is depressed; the MANUAL half of the Push Button is back lighted.  Location 1UB1</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u>            <b>Step 2.2</b> Ensure group with dropped/misaligned rod selected on the Group Select Switch.</p> <p><u>STANDARD:</u>    GKROUP SELECT SWITCH on 1UB1 is located by the student and rotated to Group 6.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSRT</p>
<p><u>STEP 3:</u>            Step 2.3 Ensure in SEQ OVERRIDE.</p> <p><u>STANDARD:</u>    The SEQ/SEQ OR pushbutton is located on the Diamond Control panel on 1UB1 and depressed. "SEQ OR" is backlighted.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSRT</p>

<p><b><u>STEP 4:</u></b>      Step 2.4 Ensure JOG selected on Speed Selector.</p> <p><b><u>STANDARD:</u></b>    The SPEED Selector is located by the student on the Diamond Control panel on 1UB1 and rotated to the JOG position.</p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 5:</u></b>      Step 2.5 If Group is at the <b>OUT LIMIT</b>:</p> <ul style="list-style-type: none"> <li>• Depress and hold LATCH switch.</li> <li>• Insert group for approximately 15 seconds or until the group <b>OUT LIMIT</b> lamp on the Diamond Panel goes <i>off</i>.</li> <li>• Release LATCH switch.</li> </ul> <p><b><u>STANDARD:</u></b>    The IN LIMIT (LATCH) BYPASS pushbutton is located by the student and depressed and held while the <b>INSERT/WITHDRAW</b> joystick is used to insert Group 6 until the Group 6 But limit lamp, located on the Diamond Control Panel on 1UB1, extinguishes.</p> <p>The LATCH pushbutton is then released and the <b>INSERT/WITHDRAW</b> joystick returned to neutral.</p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

**STEP 6:**

Step 2.6

TRANSFER the dropped/misaligned rod to the Auxiliary Power Supply:

- Ensure desired group selected on Group Select Switch.
- Ensure ~~dropped/misaligned~~ rod selected on Single Select Switch
- Ensure in SEQ OVERRIDE.
- Ensure in AUXILIARY.
- Verify Manual Transfer Sync light is lit before pressing clamp.
- Depress CLAMP.
- Depress selector for MANUAL TRANSFER switch until TRANSFER CONFIRM lamp and the CONTROL ON lamp on the PI panel light.
- Depress CLAMP RELEASE

**CRITICAL STEP**

\_\_\_ SAT

\_\_\_ UNSAT

**STANDARD:**

On the CRD Panel on 1UB1:

Verify Group Select Switch positioned to Group 6.

SELECT dropped/misaligned rod on the SINGLE SELECT SWITCH.

VERIFY SEQ OR is backlit (**Not Critical**).

Depresses GROUP/AUXIL pushbutton to make transfer to AUXIL.

Verifies SYNC is backlit on MAN TRANS/SY/TR CF pushbutton (**Not Critical**)

Depresses CLAMPCLAMP REL pushbutton to make transfer to CLAMP. CLAMP will be backlit.

Depresses MAN TRANS/SY/TR CF pushbutton. TR CF will become backlit. White CONTROL ON lights will illuminate for the Dropped Rod on the Position Indication panel.

Depresses CLAMPCLAMP REL pushbutton and verifies CLAMP REL is backlit.

**COMMENTS:**

<p><b><u>STEP 7:</u></b>      Step 2.7 Perform PI alignment on the dropped/misaligned rod as follows:</p> <ul style="list-style-type: none"> <li>• Depress and hold LATCH switch.</li> <li>• Insert rod for 15 seconds.</li> <li>• Release LATCH switch</li> </ul> <p><b><u>STANDARD:</u></b>    Depress and hold LATCH switch and use the INSERT/WITHDRAW joystick to insert rod for 15 seconds. Release the LATCH switch.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 8:</u></b>      Step 2.8 Perform PI alignment on <del>dropped/misaligned</del> rod as follows:</p> <ul style="list-style-type: none"> <li>• Compare absolute and relative readings on the PI panel</li> <li>• <b>Use</b> PI reset <del>raise/lower</del> switch to match absolute and relative readings.</li> </ul> <p><b><u>STANDARD:</u></b>    Absolute and relative indications on the PI panel, on 1UBI, are compared using toggle switch to make comparison.</p> <p>RPI is selected with the select toggle switch. The POSITION RESET RAISE/LOWER toggle switch is then placed in the lower position and RPI indication is matched to API position.</p> <p>When matched the RAISE/LOWER toggle is released to neutral.</p> <p>The select toggle switch is returned to the API position.</p> <p><b><u>COMMENTS</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEQ :</b> Step 2.9 Ensure RUN selected on Speed Selector</p> <p><b>STANDARD:</b> SPEED SELECTOR is located by the student on 1UB1 and rotated to the run position.</p> <p><b>NOTE:</b> Instructor in Booth: at this time fire timer to drop second control rod.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEQ10:</b> Manually trip the reactor</p> <p><b>STANDARD:</b> The student recognizes the second control rod inserting and manually trips the reactor by depressing the Reactor Trip pushbutton and verifies that the reactor is shutdown.</p> <p><b>COMMENTS:</b></p> <p style="text-align: center;">ENDTASK</p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

<b>STEP #</b>	<b>Explanation</b>
1	Step is necessary for the operator to select the single rod and not move the plant around due to power excursions.
2	Step is necessary to instruct the rod logic as to which group the rod is in that the operator wants to recover.
3	Step is necessary to allow the operator to withdraw the dropped rod.
4	Jog is necessary because the rods will not latch with the selector switch in RUN
5	The latching of the group to clear the out limit is necessary so that the individual rod can be withdrawn.
6	Necessary to place the dropped rod on the auxiliary power supply for withdrawal while leaving the group on the group power supply.
10	Necessary because the second dropped rod places the unit in an unanalyzed condition and this is a direction, which is given by OMP 1-18.

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

**INITIAL CONDITIONS:**

Unit #1 dropped a control rod in Group 6 approximately one hour ago and the unit is stable at 55%.

The Subsequent Actions of AP/1/A/1700115, DROPPED CONTROL RODS, have been completed through step 4.9.

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

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

Enclosure 4.10 of OP/0/A/1105/09 has been completed up to step 2.0.

**INITIATING CUE:**

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

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

**CRO-015**

**ESTABLISH EFDW FLOW THROUGH STARTUP  
VALVES**

**CANDIDATE**

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**EXAMINER**

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

**Task:**

**ESTABLISH EFDW FLOW THROUGH STARTUP VALVES.**

**Alternate Path:**

**No**

**Facility JPM #:**

**CRO-015**

**KIA 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: 20 minutes**

**Time Critical: NO**

**Candidate:** \_\_\_\_\_

NAME

Time Start: \_\_\_\_\_

Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_

NAME

SIGNATURE

DATE

**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

1. Recall Snap 209
2. Import **files** for CRO-015
3. GotoRUN

Tools/Equipment/Procedures Needed:

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

The reactor has tripped

Main feedwater is lost

No increase in Reactor Building pressure is occurring and all RCPs are running

Subsequent Actions are complete

Rule 3 is complete up to Step 29.

1FDW-315 is determined to be failed closed.

INITIATING CUES:

The SRO directs you to initiate Enclosure 5.27, Alternate Methods for Controlling EFDW Flow and establish 200 gpm EFBW flow to the 1A SG.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Step 1 Verify EFDW is being supplied by an alternate unit. <b>RNO</b> <b>GOTO</b> Step 7</p> <p><b>STANDARD:</b> Determine EFDW is not being supplied from another unit. Perform <b>RNO</b> step and <b>GOTO</b> Step 7</p> <p><b>CUE: EFDW is NOT being supplied by an alternate unit</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Step 7 Stop MD EFWP in <u>all</u> headers with malfunctioning EFDW control valve.</p> <p><b>STANDARD:</b> Observes 1A steam generator level decreasing below setpoint on the SG EXTENDED SU RANGE LEVEL meters (1UB1) or OAC screens.  and/or Observes zero flow indicated to the 1A steam generator on the TOTAL EFDW FLOW meters, on 1UB1.  Based on these indications, candidate determines that 1A steam generator EFDW header is the affected header.  Control switch for the 1A MD EFWP is rotated to the OFF position.  Continue to Step 8</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b> Step 8 Place TD EFDWP in PULL TO LOCK.</p> <p><b>STANDARD:</b> The TD EFDWP switch is placed in the LOCKOUT position. Continue to Step 9</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAP</p> <p>___ UNSAT</p>

<p><b><u>STEP 4:</u></b>      Step 9 Place controllers for the following in HAND and set demand to 0% in <u>affected</u> headers:</p> <ul style="list-style-type: none"> <li>• 1FDW-35 (1A STARTUP FDW Control)</li> </ul> <p><b><u>STANDARD:</u></b>    Candidate locates 1FDW-35 on 1UB1 and the Bailey control station is placed in Hand by depressing the white HAND pushbutton, and observing the white HAND light ON. Valve position demand is reduced to 0 using the toggle switch to close the valve.</p> <p>Continue to Step 10</p> <p><b>NOTE: Candidate should perform all actions for 1A header because it is the header with the failed valve.</b></p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 5:</u></b>      Step 10 Place control switch for the following in CLOSE in <u>all affected</u> headers:</p> <ul style="list-style-type: none"> <li>• 1FDW-33 (1A SU FDW Block)</li> <li>• 1FDW-372 (1A MDEFWP DISCH BLOCK)</li> </ul> <p><b><u>STANDARD:</u></b>    Candidate Locates 1FDW-33 control switch on 1UB1 and rotates to the CLOSE position, observing the green CLOSE light ON and red OPEN light OFF. <b>(NOT CRITICAL IF 1FDW-35 IS CLOSED)</b></p> <p>Locates 1FDW-372 Control Switch on 1UB1 and rotates to the CLOSE position, observing the green CLOSE light ON and the red OPEN light OFF.</p> <p>Continue to Step 11</p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 6:</b> Step 11 Place control switch for the following in OPEN in <u>all affected</u> headers:</p> <ul style="list-style-type: none"> <li>• 1FDW-374 (MD EFDWP I A DISCH TO SG A)</li> </ul> <p><b>STANDARD:</b> Candidate locates 1FDW-374 on 1UB1 and the red OPEN pushbutton is depressed, the red OPEN indication is observed to be ON. Continue to Step 12</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 7:</b> Step 12 Place control switch for the following in CLOSE in <u>all affected</u> headers:</p> <ul style="list-style-type: none"> <li>• 1FDW-36 (1A SG NORM SU FDW HDR)</li> </ul> <p><b>STANDARD:</b> Candidate locates 1FDW-36 on 1VB3 places control switch in the CLOSE position and the green CLOSE indication is observed to be illuminated; and the red OPEN indication is observed to <b>be</b> extinguished. Continue to Step 13</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b> Step 13 Place control switch for the following in OPEN in <u>all affected</u> headers:</p> <ul style="list-style-type: none"> <li>• 1FDW-38 (1A SG EFDW Header)</li> </ul> <p><b>STANDARD:</b> Candidate locates 1FDW-38 on 1VB3 places control switch in the OPEN position and the red OPEN indication is observed to be illuminated and the green CLOSE indication is observed to <b>be</b> extinguished. Continue to Step 14</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 9:</b> Step 14 Verify 1FDW-315 failed</p> <p><b>STANDARD:</b> Manual Loader Knob is turned counter-clockwise to OPEN valve, on 1UB1. Candidate recognizes that 1FDW-315 is <b>NOT</b> responding to manual control. Continue to Step 15</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 10:</b> Step 15 Verify <u>all</u> the following:</p> <ul style="list-style-type: none"> <li>• 1FDW-38 open</li> <li>• 1FDW-36 closed</li> <li>• 1FDW-35 closed</li> <li>• 1FDW-33 closed</li> </ul> <p><b>STANDARD:</b> Candidate locates 1FDW-38 on 1VB3 and the red OPEN indication is observed to be illuminated and the green CLOSE indication is observed to be extinguished. Candidate locates 1FDW-36 on 1VB3 and the green CLOSE indication is observed to be illuminated; and the red OPEN indication is observed to be extinguished. Candidate locates 1FDW-35 on 1UB1 and observes the Bailey control station position demand is zero. Candidate locates 1FDW-33 control switch on 1UB1 and observes the green CLOSE light <b>ON</b> and red OPEN light OFF. Continue to <b>Step</b> 16</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 11:</u> Step 16 Verify 1FDW-372 closed.</p> <p><u>STANDARD:</u> Candidate locates 1FDW-372 Control Switch on 1UB1 and observes the green CLOSE light ON and the red OPEN light OFF. Continue to Step 17</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 17 Verify both of the following:</p> <ul style="list-style-type: none"> <li>• Verify 1FDW-374 is open.</li> <li>• Verify 1A MDEFDWP available.</li> </ul> <p><u>STANDARD:</u> Candidate locates 1FDW-374 on 1UB1 and the red OPEN indication is observed to be ON. 1A MD EFDWP control switch green OFF light is verified illuminated. This pump was secured by the candidate in a previous step. Continue to Step 18</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> Step 18 <b>GOTO</b> Step 22.</p> <p><u>STANDARD:</u> Candidate goes to Step 22.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 14:</u> Step 22 Verify 1FDW-316 failed RNO <b>GOTO</b> Step 30.</p> <p><u>STANDARD:</u> Candidate verifies 1FDW-316 is controlling SG level @ <math>\approx</math> 30%. or Manual Loader Knob is turned counter-clockwise to OPEN valve, on 1UB1. Recognizes that 1FDW-316 <u>is</u> responding to manual control. Perform RNO and <b>GOTO</b> Step 30.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> Step 30 Verify AFIS actuation has occurred (either Statalarm on):</p> <ul style="list-style-type: none"> <li>• AFIS HEADER A INITIATED (1SA-2/C-8)</li> <li>• AFIS <b>HEADER B</b> INITIATED (1SA-2/D-8)</li> </ul> <p>RNO <b>GO TO</b> Step 34.</p> <p><u>STANDARD:</u> Candidate observes indicated Statalarms and verifies that they are <b>NOT</b> illuminated. Perform RNO and <b>GO TO</b> Step 34.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>



<p><u>STEP 19:</u>      Step 40                     Start 1A MD EFDWP.</p> <p><u>STANDARD:</u>    The 1A MD EFDWP control switch is rotated clockwise to the RUN position and the red RUN light is verified ON.</p> <p>                    Continue to <b>Step 41</b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 20:</u>      Step 41                     Verify 1FDW-316 failed open</p> <p><u>STANDARD:</u>    Verifies 1FDW-316 is controlling SG level @ <math>\approx</math> 30%.</p> <p>                    or</p> <p>                    Manual Loader Knob is turned counter-clockwise to OPEN valve, on 1UB1.</p> <p>                    Student recognizes that 1FDW-316&amp;responding to manual control.</p> <p>                    Perform <b>RNO</b> and <b>GOTO</b> Step 46.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u>      Step 46                     Verify HPI forced cooling is in progress.</p> <p><u>STANDARD:</u>    Determine that HPI Forced Cooling is NOT in progress</p> <p>                    Perform <b>RNO</b> and <b>GOTO</b> Step 48.</p> <p><b>CUE: HPI forced cooling is NOT in progress.</b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 22:</u> Step 48 Verify LOHT tab is <b>NOT</b> in progress</p> <p><u>STANDARD:</u> Determine LQHT is NOT in progress. Perform <b>RMO</b> and <b>GOTO</b> Step 51.</p> <p><b>CUE: LOHT tab is NOT in progress.</b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 23:</u> Step 51 Verify 1FDW-315 failed.</p> <p><u>STANDARD:</u> Manual Loader on 1UB1 indicates 0% 1FDW-315 has failed closed. or Green CLOSED light is ON.</p> <p>Continue to Step 52</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 24:</u> Step 52 Verify one of the following:</p> <ul style="list-style-type: none"> <li>• Lineup to feed through 1A S/U Control Valve was successful</li> <li>• Operator sent to locally throttle 1FDW-315</li> </ul> <p><u>STANDARD:</u> Determine that Lineup to feed through 1A S/U Control Valve was successful.</p> <p>Continue to Step 53</p> <p><b>CUE: 1A S/U control valve lineup has been successful.</b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 25:</b> Step 53 Verify an operator has been sent to locally control 1FBW-315.</p> <p><b>STANDARD:</b> Determine that an operator has NOT been sent to locally control 1FDW-315.</p> <p>Perform <b>RNO</b> and <b>GO TO</b> Step 56</p> <p><b>CUE:</b> <i>No operators have been dispatched to locally operate any valves.</i></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><u>NOTE</u></p> <p>Flow from the TDEFDWP through a S/U control valve should be reads on the FDW SU FLOW gauge.</p> <ul style="list-style-type: none"> <li>Flow from the MDEFDWP through a S/U control valve should be read on the MDEFDWP DISCH FLOW gauge.</li> </ul> </div> <p><b>STEP 26:</b> Step 56 Throttle 1 FDW-35 S/U to obtain desired flow rate and/or SG level per Rule 7 (SG Feed Control).</p> <p><b>STANDARD:</b> Manually throttle 4 FBW-35 on 1UB1. The raise/lower toggle switch is pushed up to increase the valve position demand signal to throttle open the valve. Flow is maintained within allowable limits. If flow exceeds pump runout limits, action must be taken to reduce flow to within limits prior to completing the task.</p> <p>When feeding through the S/U Control Valves with the MDEFW Pumps, the MDEFDWP DISCH FLOW gauge should be used to verify flow within limits.</p> <p><b>NOTE:</b> <i>When flow has been established and level is increasing in the 1A SG, the JPM is complete.</i></p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

## **CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
2 & 3	Necessary because the <u>MD EFWP</u> in the affected header needs to be secured so that the header can be isolated and valves repositioned. Step is necessary because the <u>TD EFWP</u> needs to be secured so that the header can be isolated and valves repositioned.
4 & 5	Necessary to prevent the EFDW flow, which is meant for 1A SG from getting to other portions of the system.
6	Aligns the emergency feed water to the 1A SG through the startup valves.
19	Restarts the MD EFDWP, which was stopped to reduce the DIP for the closure of valves to isolate the affected header.
26	Actually establishes flow to the 1A SG to establish required SG levels.

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

**INITIAL CONDITIONS:**

The reactor **has** tripped

Main feedwater is lost

No increase in Reactor Building pressure is occurring and all RCPs are running

Subsequent Actions are complete

Rule 3 is complete up to Step 29.

1FDW-315 *is* determined to be failed closed.

**INITIATING CUES:**

The SRO directs you to initiate Enclosure 5.27, Alternate Methods for Controlling EFDW Flow and establish 200 gpm EFDW flow to the 1A SG.

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

**CRO-053**

**BYPASS COOLANT PUMP STARTING INTERLOCKS**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

BYPASS COOLANT BUMP STARTING INTERLOCKS

**Alternate Path:**

No

**Facility JPM #:**

CRO-053

**K/A Rating(s):**

System: EPE-074

K/A: A3.04

Rating: 3.6/3.9

**Task Standard:**

Reactor Coolant Pump starting interlocks are correctly bypassed

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ In-Plant X

**Preferred Evaluation Method:**

Perform \_\_\_\_\_ Simulate X

**References:**

**Validation Time:** 7 minutes

**Time Critical:** NO

**Candidate:** \_\_\_\_\_  
NAME

Time Start: \_\_\_\_\_

Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_  
NAME

\_\_\_\_\_  
SIGNATURE / DATE

=====

**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

**NONE**

**Tools/Equipment/Procedures Needed:**

**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:**

An accident has occurred on Unit 3 in which the EQP is being used.

All RCPs are off and full HPI has been initiated.

Inadequate core cooling exists with Core Exit Thermocouples > 700°F but < 1200°F and not decreasing.

**INITIATING CUE:**

The Procedure Director directs you to bypass Reactor Coolant Pump starting interlocks per Enclosure 5.14, "Jumper Contacts for RCP Starting interlocks" of the EOP.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Obtain Reactor Coolant Pump Motor starting interlock jumper cables for affected unit(s), per Endosure 5.14 of EP/1,2, or 3/A/1800/01, Emergency Operating Procedure.</p> <p><b>STANDARD:</b> Jumper cables are obtained from the key locker <i>located</i> in the Work Control Center.</p> <p><b>NOTE:</b> Jumper cables for unit #1 <b>and</b> unit #2 RCPs are located in the same key locker. <b>Ensure</b> correct set of jumper cables are identified and obtained.</p> <p><b>CUE:</b> <b>After</b> correct jumpers have <b>been</b> located, inform student that he may leave jumpers in the key locker.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> LOCATE Terminal Cabinet MTC3 for the affected unit(s)</p> <p><b>STANDARD:</b> Terminal Cabinet MTC3 is correctly located: 3MTC3 is located in Unit #3 Cable Room near south Cable Room door.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

**STEP 3:**

BYPASS the Reactor Coolant Pump Motor starting interlocks on the affected unit(s), as listed on Enclosure 5.14 of EP/ 3/A/1800/01, Emergency Operating Procedure.

RCP    Contacts

- A1    A3PA to A305
- A2    B8PB to B805
- B1    A4PA to A405
- B2    B9PB to B905

**STANDARD:**

MTC3 cabinet door is opened and the following steps are performed for EACH Reactor Coolant Pump Motor:

The first contact is located and identified on the terminal board

One end of the jumper cable is simulated to be clipped to this contact.

The second specified contact is located and identified on the terminal board.

The other end of the jumper cable is simulated to be clipped to the second contact.

**NOTE:** End task when you **have** determined that student **is** proficient at identifying RCP jumper contacts.

COMMENTS:

**END TASK**

**CRITICAL STEP**

\_\_\_ SAT

UNSAT

STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

STEP #	Explanation
1	Necessary because the cables must be obtained to jumper the interlocks.
2	Necessary because the operator must locate the correct cabinet for the correct unit
3	Necessary because the operator must be able to identify the correct contacts <b>for</b> each RCP or the interlocks will not be bypassed <b>as</b> required.

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

**INITIAL CONDITIONS:**

An accident has occurred on Unit 3 in which the EOP is being used.

All RCPs are off and full HPI has been initiated.

Inadequate core cooling exists with Core Exit Thermocouples  $> 700^{\circ}\text{F}$  but  $< 1200^{\circ}\text{F}$  and not decreasing.

**INITIATING CUE:**

The Procedure Director directs you to bypass Reactor Coolant **Pump** starting interlocks per Enclosure 5.14, "Jumper Contacts for RCP Starting interlocks" of the **EOQ**.

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

**CRO-060**

**PERFORM REQUIRED ACTIONS FOR A TURBINE  
BUILDING FLOOD**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

PERFORM REQUIRED ACTIONS FOR A TURBINE BUILDING FLOOD

**Alternate Path:**

NO

**Facility JPM #:**

CRO-060

**K/A Rating(s):**

System: APE BW/A07

K/A: AA1.3

Rating: 3.3/3.5

**Task Standard:**

**Preferred Evaluation Location:**

Simulator  X  In-Plant \_\_\_\_\_

**Preferred Evaluation Method:**

Perform  X  Simulate \_\_\_\_\_

**References:**

AP/10, Uncontrollable Flooding of Turbine Building

**Validation Time: 7 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. Import **files** for CRO-060
3. Go to RUN

**Tools/Equipment/Procedures Needed:**

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Unit 1 was operating at 108% power with no known problems.

Unit 2 is in cold shutdown.

The 2A1 condenser inlet expansion joint has ruptured and Turbine Building Basement water level is rising.

Unit 1 has been tripped and the EOP is being completed by other team members.

**INITIATING CUES:**

The Control Room SRO directs you to refer to AP/10, Uncontrollable Flooding of Turbine Building, and perform required actions.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Step 4 Ensure Rx is tripped.</p> <p><b>STANDAkd:</b> Determine RX has tripped by observing all control rods inserted and power is &lt; 1%.  Continue to Step 2.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>NOTE</b></p> <p>Tripping the CCW pumps will cause <b>loss</b> of condenser vacuum which will result in TBVs failing closed and trip of the MFDWPs.</p> </div> <p><b>STEP 2:</b> Step 2 Ensure all CCW pumps are shutdown.</p> <p><b>STANDARD:</b> The 1A, 1B, and 1C CCW pump switches are rotated to the TRIP position. (located on 1AB3)  Continue to Step 3.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b> Step 3 Press both of the following on the TURB BLDG FLOOD EMER CLOSING ALL CCWP DISCH VALVES control switch:</p> <ul style="list-style-type: none"> <li>• CLOSE 1</li> <li>• CLOSE 2</li> </ul> <p><b>STANDARD:</b> "CLOSE 1" and "CLOSE 2" on the TURB BLDG FLOOD EMER CLOSING ALL CCWP DISCH VALVES control switch are both depressed. (located on 1AB3)  Continue to Step 4</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 4:</b> Step 4 Verify all CCW pump discharge valves are closed</p> <p><b>STANDARD:</b> The green CLOSED lights for 1CCW-10, 11, 12 &amp; 13 are verified illuminated and the red OPEN lights for the same valves are verified extinguished. (located on 1AB3)</p> <p>Continue to Step 5.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSRT</p>
<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> <p><b>NOTE</b></p> <p>Field tasks that may affect multiple units should be coordinated with Unit 2 and Unit 3.</p> </div> <p><b>STEP 5:</b> Step 5 Dispatch operators to ensure all three flood doors are closed and in the SECURED position from the AB side (A-I, at Unit 1, 2, and 3 stairwell entrances to TB): {2}</p> <ul style="list-style-type: none"> <li>• Unit 1 Flood Door</li> <li>• Unit 2 Flood Door</li> <li>• Unit 3 Flood Door</li> </ul> <p><b>STANDARD:</b> Candidate should dispatch and NEO to ensure all three flood doors are closed and in the SECURED position from the AB side.</p> <p>Continue to Step 6.</p> <p><b>Cue: An operator has been dispatched.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSRT</p>
<p><b>STEP 6:</b> Step 6 Verify LPI decay heat removal is <b>NOT</b> in progress</p> <p><b>STANDARD:</b> Determine LPI pumps are not operating by observing pumps switch indications on 1UB2.</p> <p>Continue to Step 7.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSP</p>

<p><b>STEP 7:</b> Step 7 Dispatch an operator to place the following waterbox discharge valve switches to HAND and CLOSE (<b>T-3</b>, East of condenser catwalk): 1CCW-20 (1A1)</p> <ul style="list-style-type: none"> <li>• 1CCW-21 (1A2)</li> <li>• 1CCW-22 (1B1)</li> <li>• 1CCW-23 (1B2)</li> <li>■ 1CCW-24 (1C1)</li> <li>• 1CCW-25 (1C2)</li> </ul> <p><b>STANDARD:</b> Candidate should dispatch an operator to place the above valves to HAND and CLOSE.</p> <p>Continue to Step 8</p> <p>Cue: <b>Operator</b> has been dispatched.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b> Step 8 Make a <b>PA</b> announcement of the event including restrictions on entry into TB basement due to electrical hazard.</p> <p><b>STANDARD:</b> FA announcement is made using the Control Room phone</p> <p>Continue to Step 9.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 9:</b> Step 9 Attempt to locate and isolate the <b>source</b> of the flooding</p> <p><b>STANDARD:</b> Dispatch operators to locate and isolate the source of the flooding</p> <p>Continue to Step 10.</p> <p>Cue: Operators have been dispatched.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 10:</u> Step 10 Ensure all Unit 1 ESV pumps are shutdown:</p> <ul style="list-style-type: none"> <li>• 1A ESV Pump</li> <li>• 1C ESV Pump</li> <li>• 1B ESV Pump</li> </ul> <p><u>STANDARD:</u> Stop <b>ALL</b> Unit 1 ESV pumps by rotating their pumps switches to OFF. (located on 1AB3)</p> <p>Continue to Step 11</p> <p><u>COMMENTS:</u></p>	<p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>
<p><u>STEP 11:</u> Step 11 Verify <b>all</b> CCW pump discharge <b>valves</b> were <b>successfully</b> closed in earlier steps.</p> <p><u>STANDARD:</u> Continue to Step 12</p> <p><u>COMMENTS:</u></p>	<p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>
<p><u>STEP 12:</u> Step 12 Dispatch an operator to perform Encl 5.1 (Isolation of SSW to CCW Pumps).</p> <p><u>STANDARD:</u> Candidate should dispatch an operator to perform Encl 5.1 (Isolation of SSW to CCW Pumps).</p> <p>Continue to Step 13</p> <p><b><i>Cue: Operator is dispatched.</i></b></p> <p><u>COMMENTS:</u></p>	<p><input type="checkbox"/> SAT</p> <p><input type="checkbox"/> UNSAT</p>

<p><b>STEP 53:</b> Step 13 <b>IAAT HPSW is NOT</b> available, <b>THEN</b> ensure Encl 5.31 (Temporarily Charging the HPSW System) of EP/1 has been initiated.</p> <p><b>STANDARD:</b> Determine that HPSW is available by observing the HPSW Jockey pump operating and level in the EWST. (located on 1AB3)</p> <p>Continue to <b>Step 14</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 14:</b> Step 14 Notify a SRO to evaluate de-energizing electrical components in the flooded areas.</p> <p><b>STANDARD:</b> Candidate should inform a <b>SRO</b> to evaluate de-energizing electrical components in the flooded areas.</p> <p><b>Cue: SRO will</b> evaluate which electrical equipment to de-energize.</p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END TASK</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

## **CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
2	Necessary to attempt to terminate the flooding and not contribute to the water level in the TB basement.
3	Necessary to attempt to terminate the flooding and not contribute to the water level in the TB basement.
5	Necessary to prevent the waters <b>from</b> the flooding from entering the <b>Aux. Bldg.</b> , causing more problems and the spread of contamination,

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

**INITIAL CONDITIONS:**

Unit 1 was operating at 100% power with no known problems.

Unit 2 is in cold shutdown.

The 2A1 condenser inlet expansion joint has ruptured and Turbine Building Basement water level is rising.

Unit 1 **has** been tripped and the EOP is being completed by other team members.

**INITIATING CUES:**

The Control Room SRO directs you to refer to AP/10, Uncontrollable Flooding of Turbine Building, and perform required actions.

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

**CRO-067**

**Perform Required Actions for ES Actuation (> 3psig)**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Perform Required Actions for ES Actuation (> 3psig)

**Alternate Path:**

Yes

**Facility JPM #:**

CRO-067

**K/A Rating(s):**

System: EPE-009

K/A: E.41.13

Rating: 4.4/4.4

**Task Standard:**

Proper E\$ conditions are verified using the appropriate procedures and re-start the 1A and 1B LPI pump when required.

**Preferred Evaluation Location:**

Simulator X In-Plant \_\_\_\_\_

**Preferred Evaluation Method:**

Perform X Simulate \_\_\_\_\_

**References:**

EOP Enclosure 5.1, ES ACTUATION

**Validation Time: 6 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 207
2. Import files for CRO-067
3. GotoRUN

**Tools/Equipment/Procedures Needed:**

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. **All** control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Small Break **LOCA** is in progress.

Rule 2 in progress

RCS is saturated and RCPs are off.

ES Channels 1 - 6 have actuated.

**INITIATING CUES:**

The Control Room SRO instructs **you** to perform EOP Enclosure 5.1, ES Actuation.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b>      Step 1 Determine all ES channels that should have actuated based on <u>RCS</u> pressure and RB pressure:</p> <table border="1" style="margin-left: 20px; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="padding: 5px;">Actuation Setpoint (psig)</th> <th style="padding: 5px;">ES Channel</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">1600 (RCS)</td> <td style="padding: 5px;">1 &amp; 2</td> </tr> <tr> <td style="padding: 5px;">550 (RCS)</td> <td style="padding: 5px;">3 &amp; 4</td> </tr> <tr> <td style="padding: 5px;">3 (RB)</td> <td style="padding: 5px;">1 &amp; 2, 3 &amp; 4, 5 &amp; 6</td> </tr> <tr> <td style="padding: 5px;">10 (RB)</td> <td style="padding: 5px;">7 &amp; 8</td> </tr> </tbody> </table> <p><b>STANDARD:</b>      Candidate should monitor the existing RCS Pressure, using valid pressure indication, ICCM Train A or B, OAC, RCS Pressure (NR), RCS Pressure (WR) on 1UB1 and 1UB2 to verify RB pressure is &gt; 3 psig.  Determines that ES Channels 1-6 should be actuated  Continue to Step 2</p> <p><b>COMMENTS:</b></p>	Actuation Setpoint (psig)	ES Channel	1600 (RCS)	1 & 2	550 (RCS)	3 & 4	3 (RB)	1 & 2, 3 & 4, 5 & 6	10 (RB)	7 & 8	<p>___ SAT</p> <p>___ UNSAT</p>
Actuation Setpoint (psig)	ES Channel										
1600 (RCS)	1 & 2										
550 (RCS)	3 & 4										
3 (RB)	1 & 2, 3 & 4, 5 & 6										
10 (RB)	7 & 8										
<p><b>STEP 2:</b>      Step 2 Verify <u>all</u> ES channels associated with actuation setpoint have actuated:</p> <p><b>STANDARD:</b>      Ensure ES digital channels 1-6 are actuated by observing "Tripped" lights on 1UB1. Continue to Step 3</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>										

<p><b>STEP 3:</b>            Step 3  <b>IAAT</b> additional ES actuation setpoints are exceeded.  THEN perform Steps 1 – 2.  Continue to Step 4</p> <p><b>STANDARD:</b>    IAAT additional ES actuation setpoints are exceeded candidate perform Steps 1 – 2.</p> <p>Note: <b>During the performance of this JPM ES Channels 7 and 8 will</b> actuate.</p> <p><b>COMMENTS:</b></p>	<p>____ SAT</p> <p>____ UNSAT</p>
<p><b>STEP 4:</b>            Step 4  <b>Place</b> HPI in manual control</p> <p><b>STANDARD:</b>    Go to RZ modules on 1VB2 and select manual for <b>the</b> HPI components.  Continue to Step 5</p> <p><b>COMMENTS:</b></p>	<p>____ SAT</p> <p>____ UNSAT</p>
<p><b>STEP 5:</b>            Step 5  Verify Rule 2 in progress or complete.</p> <p><b>STANDARD:</b>    Determine Rule 2 in progress by referring to <b>the</b> Initial Conditions.  Continue to Step 6</p> <p><b>COMMENTS:</b></p>	<p>____ SAT</p> <p>____ UNSAT</p>

<p><b><u>STEP 6:</u></b>      Step 6  Open the following:</p> <ul style="list-style-type: none"> <li>• 1BS-1</li> <li>• 1BS-2</li> </ul> <p><b><u>STANDARD:</u></b>    At the <b>ES RZ</b> modules an 1AB2, OPEN 1BS-1 and 1BS-2 by depressing the open pushbutton.  Continue to Step 7</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 7:</u></b>      Step 7  Verify any RCP operating</p> <p><b><u>STANDARD:</u></b>    Determine <b>NO</b> RCP is operating.  Perform RNO step and <b>GO TO</b> Step 9.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 8:</u></b>      Step 9  IAAT any RCP is operating  <b>AND</b> ES Channels 5 and 6 actuate  <b>THEN</b> perform Steps 10 and 11</p> <p><b><u>STANDARD:</u></b>    Determine <b>NO</b> RCP is operating.  Perform RNO step and <b>GO TO</b> Step 12.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 9:</b> Step 12 <b>IAAT</b> ES Channels 3 &amp; 4 are actuated, <b>THEN GOTO</b> Step 13</p> <p><b>STANDARD:</b> Determine ES Channels 3 &amp; 4 are actuated by one of the following:</p> <ul style="list-style-type: none"> <li>• Statalarms: 1SA-1/C-10 (ES Channel 3 Trip) and 1SA-1/D-10 (ES Channel 4 Trip)</li> <li>• ES Channel 3 and Channel 4 Tripped lights lit on 1UBI.</li> </ul> <p><b>GOTO</b> Step 13</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 10:</b> Step 13 Place the following in manual control:</p> <ul style="list-style-type: none"> <li>• 1A LPI Pump</li> <li>• 1B LPI Pump</li> <li>• 1LP-17</li> <li>■ 1LP-18</li> </ul> <p><b>STANDARD:</b> Go to the ES RZ modules on 1VB2 and place the above components in manual by depressing each components manual pushbutton. Continue to Step 14</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p style="text-align: center;"><b>CAUTION</b></p> <p>LPI pump damage may occur if operated in excess of 30 minutes against a shutoff head.</p> <p><b>STEP 8:</b> Step 14  <b>IAAT</b> any LPI pump is operating against a shutoff head,  <b>THEN</b> at the CR SRO's discretion stop affected LPI pumps.</p> <p><b>STANDARD:</b> Determine RCS pressure is above LPI pump discharge head <b>and</b> then ask for SRO direction. When directed by the SRO secure both the "A" and "B" LPI pump.  Continue to Step 15</p> <p><b>Cue:</b> <i>When asked inform candidate that the SRO desires to stop BOTH LPI pumps.</i></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 9:</b> Step 15  <b>IAAT</b> RCS pressure is &lt; LPI pump shutoff head.  <b>THEN</b> perform Steps 46 - 17.</p> <p><b>STANDARD:</b> Determine RCS pressure is NOT &lt; LPI pump shutoff head (<b>≈200 psig</b>)  Perform <b>RNO</b> step and <b>GOTO</b> Step 18.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 10:</b> Step 18  <b>IAAT</b> 1A and 1B LPI pumps are off / tripped,  AND all the following conditions exist:  RCS pressure &lt; LPI pump shutoff head  1LP-19 closed  1LP-20 closed  1BS-1 open OR throttled open  1BS-2 open OR throttled open  <b>THEN</b> perform Steps 19 - 21</p> <p><b>STANDARD:</b> Determine conditions of step NOT met because RCS pressure is not &lt; LPI pump shutoff head (<b>≈200 psig</b>).  Perform <b>RNO</b> Step and <b>GO TO</b> Step 22</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>Note: After Step 18 is completed RCS pressure will decrease to &lt; LPI pump shutoff head. The candidate should determine that IAAT step 15 is met and transfer to step 15.</b></p> <p><b>STEP 11:</b> Step 15  <b>IAAT</b> RCS pressure is &lt; LPI pump shutoff head,  <b>THEN</b> perform Steps 16 - 17.</p> <p><b>STANDARD:</b> Determine that RCS pressure is &lt; LPI pump shutoff head (<b>≈200 psig</b>).  Continue to Step 16</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 12:</b> Step 16  Perform the following:</p> <ul style="list-style-type: none"> <li>• Open 1LP-17 (<b>already open</b>)</li> <li>• Start 1A LPI pump</li> </ul> <p><b>STANDARD:</b> Verify 1LP-17 is open <b>by</b> observing the open light on the ES RZ module.  Start the 1A LPI pump by using the pump switch on 1UB2.  Continue to Step 17</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p>STEP 13:      Step 17                  Perform the following:</p> <ul style="list-style-type: none"><li>• Open 1LP-18 (<b>already open</b>)</li><li>• Start 1B LPI pump</li></ul> <p><u>STANDARD:</u>    Verify 1LP-18 is open <b>by</b> observing the open light on the ES RZ module.                  Start the 1B LPI pump by using the pump switch on 1UB2.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><b>END TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
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STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

<b>STEP #</b>	<b>Explanation</b>
12	The " A LPI pump must <b>be</b> started when RCS pressure is less than LPI pump head to ensure LPI flow into the core.
13	The " B LPI pump <b>must</b> be started when RCS pressure is less than LPI pump head <b>to</b> ensure LPI flow into the core.

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

**INITIAL CONDITIONS:**

Small Break LOCA is in progress.

Rule 2 in progress

RCS is saturated and RCPs are off.

ES Channels 1 - 6 have actuated.

**INITIATING CUES:**

The Control Room SRO instructs you to perform EOP Enclosure 5.1, ES Actuation.

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

**CRO-097**

**Transfer ECCS Suction to the Emergency Sump  
(1LP-15 Failed Closed)**

**CANDIDATE**

---

**EXAMINER**

---

REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Transfer **ECCS** Suction to the Emergency Sump (1LP-15 Failed Closed)

**Alternate Path:**

Yes

**Facility JPM #:**

CRO-097

**KIA Rating(s):**

System: BW/E08  
K/A: EA1.1  
Rating: 4.0/3.7

**Task Standard:**

Steps of EOP are properly completed by the student to align HPI/LPI piggyback mode

**Preferred Evaluation Location:**

Simulator  X  In-Plant \_\_\_\_\_

**Preferred Evaluation Method:**

Perform  X  Simulate \_\_\_\_\_

**References:**

EOP Enclosure 5.12, (ECCS Suction Swap to RBES)

**Validation Time: 9 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-097
3. GotoRUN

**Tools/Equipment/Procedures Needed:**

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

A small break LOCA has occurred which is depleting the BWST.

Core SCM = 0°F.

The BWST level is 19 feet and RB level is increasing.

LOCA CD tab has been completed up to step 7.

"1A" LPI header indicates no flow

"1B" LPI header indicates no flow

**INITIATING CUES:**

The Procedure Director directs you to perform IAAT Step 1; Initiate Enclosure 5.12, (ECCS Suction Swap to RBES).

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Step 1</p> <p>Start both of the following:</p> <ul style="list-style-type: none"> <li>• 1A LPI Pump</li> <li>• 1B LPI Pump</li> </ul> <p><b>STANDARD:</b> The candidate rotates the control switches on 1UB2 for "1A" and "1B LPI Pumps clockwise to the CLOSE position and verifies that the Red TRIP COIL lights illuminate and the White CLOSE COIL light is OFF and the ammeter responds.</p> <p>Continue to Step 2</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Step 2</p> <p>Verify either of the following exist:</p> <ul style="list-style-type: none"> <li>• LPI FLOW TRAIN A plus LPI FLOW TRAIN B <math>\geq</math> 3300 gpm</li> <li>• Only one LPI header is operating AND flow in that header is <math>\geq</math> 2850 gpm</li> </ul> <p><b>STANDARD:</b> The candidate locates the flow instrumentation (on 1UB1) for the LPI headers and determines that no flow is indicated in either header.</p> <p>Perform RNO Step and GO PO Step 4</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 3:</b>            Step 4 Verify &lt; three HPI pumps operating <b>RNO</b> STOP "1B" HPI pump</p> <p><b>STANDARD:</b>    Candidate observes the indications for the HPI Pump controls on 1UB1 and determines that all 3 HPI Pumps are operating.  The candidate locates the control switch for the 1B HPI Pump and rotates it to OFF position <b>and</b> verifies that the white OFF light comes on and the red RUN lights go off. Continue to Step 5</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 4:</b>            Step 5 Dispatch an operator to perform Encl. 5.37 (Isolation of HPI Pump Reerc) without dressing out. (<b>PS</b>)</p> <p><b>STANDARD:</b>    Candidate should dispatch NEO(s) to perform Encl. 5.37. Continue to Step 6</p> <p><b>CUE: inform candidate operator(s) dispatched as requested.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 5:</b>            Step 6 Notify Control Room personnel that the 170 gpm/pump minimum HPI flow requirement is in effect.</p> <p><b>STANDARD:</b>    Candidate informs control room personnel of HPI minimum flow requirements for HPI. Continue to Step 7</p> <p><b>CUE: inform student the control mom has been notified.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ VNSAT</p>

<p style="text-align: center;"><b><u>CAUTION</u></b></p> <p>ECCS pump damage may occur if LPI pumps are operated below the following minimum flows:</p> <ul style="list-style-type: none"> <li>Any LPI pump operated at &lt; 100 gpm for &gt; 30 minutes</li> <li>Two LPI pumps operating in piggyback with <b>NO</b> LPI flow and total HPI flow &lt; 500 gpm</li> </ul>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 6:</u></b>      Step 7 Verify two LPI pumps operating.</p> <p><b><u>STANDARD:</u></b>    The candidate locates the controls for "1A" and "1B" LPI pumps on 1UB2 and determines that both LPI pumps are running. Continue to Step 8</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 7:</u></b>      Step 8 Verify total HPI flow including seal injection is &gt; 500 gpm.</p> <p><b><u>STANDARD:</u></b>    Observe HPI headers flows on 1UB1 and determine total HPI flow including seal injection is &gt; 500 gpm. Continue to Step 9</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 8:</b>            Step 9  Simultaneously open the following:</p> <ul style="list-style-type: none"> <li>• 1LP-15</li> <li>■ 1LP-16</li> </ul> <p><b>RNO</b>  Limit total HPI flow to &lt; 750 gpm including seal injection</p> <p><b>STANBARD:</b>    Candidate locates the control switches and light indication for 1LP-15 and 1LP-16 on 1UB2 and determines that the valves are closed.</p> <p>1LP-15 and 1LP-16 switches are rotated to the OPEN direction and the student verifies that the green CLOSED light goes out and the red OPEN light comes on.</p> <p>The candidate identifies that 1LP-15 did not open when its control switch was placed in the OPEN position and performs RNO.</p> <p>Throttle 1HP-26 and 1HP-27 to limit total HPI flow to &lt; 750 gpm including seal injection.</p> <p>Continue to Step 10</p> <p><b>NOPE: 1LP-15 ('1A' LPI TO HPI AND RBS) will NOT respond, and will not be operable during this JPM.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 9:</b>            Step 10  <b>GO TO Step 14</b></p> <p><b>STANDARD:</b>    Candidate goes to step 14</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 10:</u> Step 14 Place the "LDST LEVEL INTERLOCK switch in the "DISABLE" position.</p> <p><u>STANDARD:</u> The candidate locates the "LDST LEVEL INTERLOCK" switch and places it in the "DISABLE" position. Continue to Step 15</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Step 15 Position the following valves switches to close until valve travel is initiated:</p> <ul style="list-style-type: none"> <li>• 1HP-23</li> <li>• 1HP-24</li> <li>• 1HP-25</li> </ul> <p><u>STANDARD:</u> The controls for 1HP-23, 24 and 25 are located by the candidate on IUBI. The switches are rotated to the CLOSE position and the green CLOSED lights are observed to come on and the red OPEN lights are observed to go off. Continue to Step 16</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> Step 16 Verify any of the following are open:</p> <ul style="list-style-type: none"> <li>• 1LPSW-4</li> <li>• 1LPSW-5</li> </ul> <p>Continue to Step 17</p> <p><u>STANDARD:</u> Verify any of the above valves are open by observing their open indications on 1VB2.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 13:</u>      Step 17                     GO TO Step 22</p> <p><u>STANDARD:</u>    Candidate goes to Step 22.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u>      Step 22                     Verify both LPI coolers available for LPI and LPSW.</p> <p><u>STANDARD:</u>    Determine both LPI coolers available for LPI and LPSW                     Continue to Step 23</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u>      Step 23                     Verify any LPI pump has been secured in this enclosure due to low flow                     conditions.</p> <p><u>STANDARD:</u>    Determine BOTH LPI pumps are operating and perform <b>RNO</b> and <b>GO</b> <b>TO</b> Step 25.                     Continue to Step 25</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<div style="border: 1px solid black; padding: 5px; text-align: center; margin-bottom: 10px;"> <p><b>NOTE</b></p> <p>RB level of <math>\geq 2'</math> is expected when BWST level reaches 9'.</p> </div> <p><u>STEP 16:</u>      Step 25  <b>WHEN</b> BWST level is <math>\leq 9'</math>.  <b>AND</b> RB level is rising,  <b>THEN</b> continue in this enclosure.</p> <p><u>STANDARD:</u>    Monitor EWST level and RB level and determine that this step is satisfied and continue to Step 26.</p> <p><b><i>Cue: If required, inform candidate time compression will be used and the BWST level will be lowered.</i></b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u>      Step 26</p> <p>Simultaneously open the following:</p> <ul style="list-style-type: none"> <li>• 1LP-19</li> <li>• 1LP-20</li> </ul> <p><u>STANDARD:</u>    The candidate locates the controls for 1LP-19 (1A RX BLDG SUCTION) AN5 1LP-20 (1E RX BLDG SUCTION) on UB2.</p> <p>The switches <b>are</b> placed in the OPEN position and the valves are verified to open.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

**END TASK**

STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

<b>STEP #</b>	<b>Explanation</b>
1	Required to provide HPI pump suction
8	Necessary to allow the flow from the LPI headers to the HPI pump suction. Candidate must determine that 1LP-15 did not open and then throttle HPI flow to protect the HPI pumps.
16	Necessary to allow the suction source for the LPI system to be the WBES and not the BWST, which is almost depleted.

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

**INITIAL CONDITIONS:**

A small break LOCA has occurred which is depleting the BWST

Core SCM = 0°F

The BWST level is 19 feet and RB level is increasing.

LOCA CD tab has been completed up to step 7.

"1A" LPI header indicates no flow

"1B" LPI header indicates no flow

**INITIATING CUES:**

The Procedure Director directs you to perform IAAAT Step 1; Initiate Enclosure 5.12, (ECCS Suction Swap to RBES).

**REGION 1**  
**INITIAL LICENSE EXAMINATION**  
**JOB PERFORMANCE MEASURE**

**CRO-600**

**RECOVER FROM SWITCHYARD ISOLATION**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Recover from Switchyard Isolation

**Alternate Path:**

No

**Facility JPM #:**

CRO-600

**K/A Rating(s):**

System: BW/A05

K/A: AA1.1

Rating: 4.3/4.2

**Task Standard:**

Recovery from Switchyard Isolation is performed correctly including manually synchronizing the overhead Keowee Unit onto the 230 KV Red Bus.

**Preferred Evaluation Location:**

Simulator  X  In-Plant \_\_\_\_\_

**Preferred Evaluation Method:**

Perform  X  Simulate \_\_\_\_\_

**References:**

Enclosure 5.3 of AP/011 (Recovery From Loss of Power)

**Validation Time: 15 minutes**

**Time Critical: NO**

**Candidate:** \_\_\_\_\_  
NAME

Time Start: \_\_\_\_\_

Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_  
NAME

\_\_\_\_\_  
SIGNATURE

BATE

=====  
**COMMENTS**  
=====

**SIMULATOR OPERATOR INSTRUCTIONS:**

1. Recall Snap 210
2. Import files for CRO-600
3. Go to RUN
4. Use the Speed Change Motor on Keowee Unit 1 to ensure the unit is out of sync.
5. Timer 2 will reset the SWYD Isolation
6. Timer 3 will give remote control of Keowee

**Tools/Equipment/Procedures Needed:**

Enclosure 5.3 of AP/011 (Recovery From Loss of Power)

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

1. A switchyard Isolation has occurred
2. Unit 1 and Unit 2 reactors have tripped
3. Unit 3 remains online at 100% power
4. Power has been restored to Unit 1 and Unit 2's Main Feeder Buses from Keowee Unit 1 via the overhead power path
5. The TCC has notified Oconee that the 230 KV transmission system voltage and frequency has returned to normal and recovery from switchyard isolation may be initiated.

**INITIATING CUES:**

1. The SRO in the control room instructs you utilize Enclosure 5.3 of AP/011 (Recovery From Loss of Power) to recover from the Switchyard Isolation.
2. Procedure steps 1 and 2 have been completed. Begin on step 3.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Step 3 Verify <b>NO</b> ES 1 or 2 actuation on <u>any</u> Ocone unit:</p> <ul style="list-style-type: none"> <li>• Unit 1</li> <li>• Unit 2</li> <li>• Unit 3</li> </ul> <p><b>STANDARD:</b> Verify <b>ES</b> 1 or 2 has NOT actuated on Unit 1 by observing the RZ modules and/or statalarms. Contact Unit 2 and 3 to determine if ES 1 or 2 has actuated. Continue to Step 4.</p> <p><b>Cue:</b> <i>Unit 2 and 3 have not had an ES actuation.</i></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>												
<p><b>STEQ:</b> Step 4 Ensure <u>all</u> of the following AUTO/MAN transfer switches in MAN:</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 15%;"><input checked="" type="checkbox"/></th> <th style="width: 15%;"><input checked="" type="checkbox"/></th> <th style="width: 15%;"><input checked="" type="checkbox"/></th> <th style="width: 55%;">Transfer Switch</th> </tr> </thead> <tbody> <tr> <td><b>U1</b></td> <td><b>U2</b></td> <td><b>U3</b></td> <td>TA AUTO/MAN</td> </tr> <tr> <td></td> <td></td> <td></td> <td>TB AUTO/MAN</td> </tr> </tbody> </table> <p><b>STANDARD:</b> Place the Unit 1 TA and TB AUTO/MAN transfer switches in MAN. Contact Unit 2 and 3 by phone and have them ensure TA and TB AUTO/MAN transfer switches in MAN. Continue to Step 5.</p> <p><b>Cue:</b> <i>Unit 2 and 3 TA and TB AUTO/MAN transfer switches are in MANUAL.</i></p> <p><b>COMMENTS:</b></p>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Transfer Switch	<b>U1</b>	<b>U2</b>	<b>U3</b>	TA AUTO/MAN				TB AUTO/MAN	<p>___ SAT</p> <p>___ UNSAT</p>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Transfer Switch										
<b>U1</b>	<b>U2</b>	<b>U3</b>	TA AUTO/MAN										
			TB AUTO/MAN										

<p><b>STEP 3:</b> Step 5 Depress <del>all of the</del> following RESET pushbuttons:</p> <ul style="list-style-type: none"> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.V. CHANNEL 1 RESET</li> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.V. CHANNEL 2 RESET</li> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.F. CHANNEL 1 RESET</li> <li>• *GRID TROUBLE PROTECTIVE SYSTEM U.F. CHANNEL 2 RESET</li> </ul> <p><b>STANDARD:</b> The following RESET pushbuttons are depressed:</p> <ul style="list-style-type: none"> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.V. CHANNEL 1 RESET</li> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.V. CHANNEL 2 RESET</li> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.F. CHANNEL 1 RESET</li> <li>• GRID TROUBLE PROTECTIVE SYSTEM U.F. CHANNEL 2 RESET</li> </ul> <p>Continue to Step 6.</p> <p>Note: Buttons are located electrical <b>mimic</b> board.</p> <p>* Not critical</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 4:</b> Step 6 Verify the following statalarms are off:</p> <ul style="list-style-type: none"> <li>• SA-15/A-2 (CHANNEL #1 UNBERFREQUENCY)</li> <li>• SA-138-4 (CHANNEL #2 UNDERFREQUENCY)</li> <li>• SA-15/C-1 (CHANNEL #1 UNDERVOLTAGE)</li> <li>• SA-15/C-3 (CHANNEL #2 UNDERVOLTAGE)</li> </ul> <p><b>STANDARD:</b> The above Statalarms are verified to be off. Statalarms are located on SA-15. Continue to Step 7</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 5:</b> Step 7 Notify Keowee Operator to transfer control of <u>both</u> Keowee units to Ocone.</p> <p><b>STANDARD:</b> Contact Keowee Operator, <b>by</b> phone, to transfer control of <u>both</u> Keowee units to Ocone. Continue to Step 8.</p> <p><b>NOTE:</b> <b>Simulator instructor</b> will transfer control of <u>both</u> Keowee units to Ocone.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

**STEP 6:** Step 8  
Verify both channels of all Oconee units Main Feeder Bus Monitor Relay Panels reset as indicated by the following statalarms off:

✓ U1	✓ U2	✓ U3	Statalarms
			1(2)(3)SA-15/D-4 (LOAD SHED CHNL A LOGIC INITIATE)
			4(2)(3)SA-14/D-4 (LOAD SHED CHNL B LOGIC INITIATE)
			1(2)(3)SA-15/D-6 (TRANS TO SB CHNL A LOGIC INITIATE)
			1(2)(3)SA-14/D-6 (TRANS TO SB CHNL B LOGIC INITIATE)

\_\_\_ SAT

\_\_\_ UNSAT

**STANDARD:** Both channels of Oconee unit 1 Main Feeder Bus Monitor Relay Panel is verified reset as indicated by observing the above statalarms off. Contact Unit 2 and 3 and have them verify their Main Feeder Buses are reset. Continue to Step 9.

**Cue:** Unit 2 and 3 Main Feeder Bus Monitor Panels are reset as indicated by the above alarms are off.

**Note:** Unit 1's Main Feeder Bus Monitor Panel has not actuated.

**COMMENTS:**

**STEP 7:** Step 9  
Verify overhead Keowee unit energizing any Oconee unit MFB

**CRITICAL STEP**

\_\_\_ SAT

**STANDARD:** Determine that Kecwee Unit 1 is energizing Oconee Unit 1 **MFBS** via the overhead path, by observing Keowee Unit 1 has emergency started and ACB-1 is closed energizing unit 1's MFBS.

\_\_\_ UNSAT

Continue to Step 10.

**COMMENTS:**

<p><u>STEP 8:</u> Step 10 GO TO Step 23</p> <p><u>STANDARD:</u> Candidate goes to Step 23</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 23 Verify Keowee overhead unit is energizing <u>any</u> Oconee unit MFB.</p> <p><u>STANBARD:</u> Determine that Keowee Unit 1 is energizing Oconee Unit 1 MFBs via the overhead path, by observing Keowee Unit 1 has emergency started and ACB-1 is closed energizing Unit 1's MFBs.</p> <p>Continue to Step 24.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 24 Notify Emergency Coordinator to determine which of the following is desired:</p> <ul style="list-style-type: none"> <li>• Manually synchronize overhead Keowee unit onto the 230 KV Red Bus</li> <li>• Disconnect overhead Keowee unit from the 230 KV Yellow Bus and reconnect (dead bus transfer) 230 KV Yellow Bus to the System Grid</li> </ul> <p><u>STANDARD:</u> Call Emergency Coordinator and ask which of the above methods is desired.</p> <p>Continue to Step 25</p> <p><b><i>Cue: The Emergency Coordinator determines that manually synchronizing the overhead Keowee unit onto the 230 KV Red Bus is desired.</i></b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b><u>STEP 11:</u></b> Step 25 Verify manual Synchronization of the overhead Keowee Unit onto the System Grid via the 230 KV Red Bus is desired.</p> <p><b><u>STANDARD:</u></b> Determine from previous discussion with the Emergency Coordinator that manual synchronization of the overhead Keowee Unit onto the System Grid via the 230 KV Red Bus is desired.</p> <p>Continue to Step 26.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 12:</u></b> Step 26 Obtain permission from TCC to connect overhead Keowee unit (230 KV Yellow Bus Supply) to the System Grid.</p> <p><b><i>Cue: The TCC gives permission to connect overhead Keowee unit (230 KV Yellow Bus Supply) to the System Grid.</i></b></p> <p><b><u>STANDARD:</u></b> Call the permission from TCC to connect overhead Keowee unit (230 KV Yellow Bus Supply) to the System Grid.</p> <p>Continue to Step 27.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 13:</b> Step 27 Perform the following to sync and tie overhead Keowee unit (Yellow Bus Supply) to 230 KV Red Bus:</p> <ul style="list-style-type: none"><li>• Establish communications with Keowee Operations</li><li>• Depress and hold PCB-8 SYNC push button</li><li>• Adjust overhead Keowee unit SPEED CHANGER MOTOR to Synchronize overhead Keowee unit to 230 KV Red Bus.</li><li>• <b>WHEN</b> synchronization is achieved, <b>THEN</b> perform the following:<ul style="list-style-type: none"><li>➤ Close PCB-8.</li><li>➤ Release PCB-8 SYNC push button</li></ul></li></ul> <p><b>STANDARD:</b> The overhead Keowee unit (Yellow Bus Supply) is synced and tied to the 230 KV Red Bus by:</p> <ul style="list-style-type: none"><li>• Establishing communications with Keowee Operations.</li><li>• Depressing and holding the PCB-8 SYNC push button.</li></ul> <p><b>Cue:</b> <i>The simulator operator will act as a second operator and operate the PCB-8 SYNC button. After synchronization is achieved (slow in the fast direction), inform the candidate to close the PCB.</i></p> <ul style="list-style-type: none"><li>• Adjusting the overhead Keowee unit SPEED CHANGER MOTOR to synchronize overhead Keowee unit to 230 KV Red Bus.</li><li>• WHEN synchronization is achieved, THEN perform the following:<ul style="list-style-type: none"><li>➤ Close PCH-8 (Red closed light illuminated).</li><li>➤ Release PCB-8 SYNC push button.</li></ul></li></ul> <p><b>Note:</b> <i>The SYNC CHECK provides only indication, NOT protection against out of phase closure.</i></p> <p><b>Cue:</b> <i>Inform candidate that this task is complete.</i></p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END TASK</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
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STOP TIME: \_\_\_\_\_

## **CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
3	Reset buttons must be pushed to reset the Switchyard Isolation circuit to allow PCBs to be repositioned.
5	Oconee must have Keowee control to operate any Keowee Unit.
7	Must recognize power is coming from a Keowee Unit via the overhead path in order to transfer power back to the switchyard.
13	Manually syncing of the Keowee Unit is required to put the Oconee axillaries on the switchyard.

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

**INITIAL CONDITIONS:**

1. A switchyard Isolation has occurred
2. Unit 1 and Unit 2 reactors have tripped
3. Unit 3 remains online at 100% power
4. Power has been restored to Unit 1 and Unit 2's Main Feeder Buses from Keowee Unit 1 via the overhead power path
5. The TCC has notified Oconee that the 230 KV transmission system voltage and frequency has returned to normal and recovery from switchyard isolation may be initiated.

**INITIATING CUES:**

1. The SRO in the control room instructs you utilize Enclosure 5.3 of AP/011 (Recovery From Loss of Power) to recover from the Switchyard Isolation.
2. Procedure steps 1 and 2 have been completed. Begin on step 3.

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

**CRO-700**

**Place ICS In Auto following Loss Of Auto Power**

**CANDIDATE**

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**EXAMINER**

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

**Task:**

Place ICS In Auto following Loss Of Auto Power

**Alternate Path:**

Yes

**Facility JPM #:**

NEW

**K/A Rating(s):**

System' BW/A02  
WA. AA1.1  
Rating: 4.0/3.8

**Task Standard:**

Use AP/23 (Loss Of ICS Power) Enclosure 5.5 (Placing ICS In Auto) to place the ICS in AUTO following a Loss Of Auto Power.

**Preferred Evaluation Location:**

Simulator  In-Plant

**Preferred Evaluation Method:**

Perform  Simulate

**References:**

AP/23 (Loss Of ICS Power) Enclosure 5.5 (Placing ICS in Auto)

**Validation Time:** 20 minutes

**Time Critical:** NO

**Candidate:** \_\_\_\_\_  
NAME

Time Start: \_\_\_\_\_  
Time Finish: \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_  
NAME

\_\_\_\_\_  
SIGNATURE DATE

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**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

1. Recall **Snap 211**
2. Import files for CRO-700
3. GotoRUN

**Tools/Equipment/Procedures Needed:**

AP/23 (boss Of ICS Power) Enclosure 5.5 (Placing ICS In Auto)

**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:**

1. ICS AUTO power lost
2. AP/23 (Loss of ICS Power) in progress
3. ICS AUTO power has been restored

**INITIATING CUES:**

The SRO directs you to perform Enclosure 5.5 (Placing ICS in AUTO) to place ALL ICS H/A stations in AUTO.

START TIME: \_\_\_\_\_

Note: All operations will be performed on the ICS stations located on 1UB1.

<p><u>STEP 1:</u>        Step 1 Perform a pre-job briefing for AP/1/A/1700/023 from the pre-job briefing database.</p> <p><u>STANDARD:</u>    State that a pre-job briefing should be performed.  Continue to Step 2.</p> <p><b>Cue: Inform candidate that the <i>pre-job</i> briefing has been performed.</b></p> <p><b>Note: Candidate will obtain setpoint information from the OAC during this JPM.</b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u>        Step 2 Ensure RATE SET to 0.0.</p> <p><u>STANDARD:</u>    Ensure RATE SET thumbwheel located is set to 0.0  Continue to Step 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b><u>STEP 3:</u></b> Step 3 Verify THP setpoint at <math>\approx</math> THP by comparing the following,</p> <ul style="list-style-type: none"> <li>• 01E2089 (TURB HDR PRESS SETPOINT)</li> <li>• 01E2088 (ICS SELECTED TURB HDR PRESS)</li> </ul> <p><b>RNQ</b> Ensure the following in HAND:</p> <ul style="list-style-type: none"> <li>• TURBINE MASTER</li> <li>• 1A TURBINE BYPASS VALVES</li> <li>• 1B TURBINE BYPASS VALVES</li> <li>• Adjust THP setpoint to <math>\approx</math> THP at the TURBINE MASTER.</li> </ul> <p><b><u>STANDARD</u></b> Call up the appropriate OAC display (enter GD AP28) and determine THP setpoint NOT at <math>\approx</math> THP and perform <b>RNO</b>.</p> <p>Verify the above stations are in HAND.</p> <p>Use the Setpoint knob on the TURBINE MASTER to match THP setpoint to <math>\approx</math> THP while monitoring on the OAC.</p> <p>Continue to Step 4.</p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 4:</u></b> Step 4 Place TURBINE MASTER in AUTO</p> <p><b><u>STANDARD:</u></b> TURBINE MASTER is placed in AUTO by depressing the Auto pushbutton on the TURBINE MASTER Bailey station.</p> <p>Continue to Step 5</p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 5:</u></b> Step 5 Verify Main Turbine controlling THP.</p> <p><b><u>STANDARD:</u></b> Verify Main Turbine controlling THP by observing THP being maintained at setpoint.</p> <p>Continue to Step 6.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 6:</b>      <i>Step 6</i> Verify all TBVs are closed.</p> <p><b>STANDARD:</b>    Verify all TBVs closed by observing the Green closed indication  Continue to Step 7.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 7:</b>      Step 7 Ensure all TBVs in AUTO:     1A TURBINE BYPASS VALVES     • 1B TURBINE BYPASS VALVES</p> <p><b>STANDARD:</b>    Place TBVs in AUTO by depressing the red AUTO pushbutton and verify the red AUTO light illuminates and the white HAND light extinguishes.  Continue to Step 8.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b>      Step 8 Verify Tave setpoint at <math>\approx</math> Tave by comparing the following:     • 01E2087 (ICS TAVE SETPOINT)     • 01E2086 (ICS SELECTED TAVE) <b>RNO</b> Ensure the following:     • DIAMOND in HAND     • 1A FDW MASTER in HAND     • 1B FBW MASTER in HAND</p> <p><b>STANDARD:</b>    Call up the appropriate OAC display (enter GC AP28) and determine Tave setpoint NOT at <math>\approx</math> Tave and perform <b>RNO</b>.  Verify the above stations are in HAND.  Adjust Tave setpoint to <math>\approx</math> Tave at the REACTOR MASTER while monitoring on the OAC.  Continue to Step 9</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 9:</b> Step 9 Ensure DIAMOND in MANUAL.</p> <p><b>STANDARD:</b> Verify DIAMOND in MANUAL by observing MANUAL light illuminated on DIAMOND panel.</p> <p>Continue to Step 10.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 10:</b> Step 10 Place REACTOR MASTER in AUTO.</p> <p><b>STANDARD:</b> REACTOR MASTER is placed in AUTO by depressing the Auto pushbutton on the REACTOR MASTER Bailey station and verify the red AUTO light illuminates and the white HAND light extinguishes.</p> <p>Continue to Step 11.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 11:</b> Step 11 Verify Neutron Error is <math>0 \pm 1\%</math>.</p> <p><b>STANDARD:</b> Verify Neutron Error is <math>0 \pm 1\%</math> by observing Neutron Error meter on 1UB1.</p> <p>Continue to Step 52</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 12:</u>      Step 12 Place DIAMOND in AUTO</p> <p><u>STANDARD:</u>    Place DIAMOND in AUTO by depressing the AUTO pushbutton on the DIAMOND panel pushbutton and verify the AUTO light illuminates and the HAND light extinguishes. Verify plant parameters do not change.</p> <p>                         Continue to Step 13</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u>      Step 13 Verify STM GENERATOR MASTER Measured Variable is on the caret.</p> <p><u>STANDARD:</u>    Place selector switch to Measured Variable and verify the pointer on the STM GENERATOR MASTER is on the caret.</p> <p>                         Continue to Step 14.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u>      Step 14 Place STM GENERATOR MASTER in AUTO.</p> <p><u>STANDARD:</u>    STM GENERATOR MASTER is placed in AUTO by depressing the Auto pushbutton on the STM GENERATOR MASTER Bailey station and verify the red AUTO light illuminates and the white HAND light extinguishes.</p> <p>                         Continue to Step 15</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 15:</u>      Step 15 Verify Delta Tc setpoint at <math>\approx</math> Delta Tc by comparing the following:</p> <ul style="list-style-type: none"> <li>• O1E2091 (ICS DELTA TC SETPOINT)</li> <li>• O1P1608 (RCS NARROW RANGE DELTA TC)</li> </ul> <p><u>STANDARD:</u>    Verify Delta Tc setpoint at <math>\approx</math> Delta Tc by comparing the above points on the OAC.</p> <p>Continue to Step 16</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 16:</u>      Step 16 Place DELTA Tc station in AUTO.</p> <p><u>STANDARD:</u>    The DELTA Tc station is placed in AUTO by depressing the Auto pushbutton on the DELTA Tc Bailey station and verifying the red AUTO light illuminates and the white HAND light extinguishes.</p> <p>Continue to Step 17.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 17:</u>      Step 17 Verify 1A FDW MASTER Measured Variable is on the caret.</p> <p><u>STANDARD:</u>    Place selector switch to Measured Variable and verify the pointer on the 1A FDW MASTER is on the caret.</p> <p>Continue to Step 18.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 18:</u> Step 18 Verify 1B FDW MASTER Measured Variable is on the caret.</p> <p><u>STANBARD:</u> Place selector switch to Measured Variable and verify the pointer on the 1B FDW MASTER is on the caret.</p> <p>Continue to Step 19.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="134 653 1230 752" style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>NOTE</b> 1A FDW MASTER and 1B FDW MASTER should both be placed in AUTO simultaneously.</p> </div> <p><u>STEP 19:</u> Step 19 Place the following in AUTO:</p> <ul style="list-style-type: none"> <li>• 1A FDW MASTER</li> <li>• 1B FDW MASTER</li> </ul> <p><u>STANDARD:</u> The 1A FDW MASTER and 1B FDW MASTER is placed in AUTO simultaneously by depressing the Auto pushbuttons on both the 1A FDW MASTER and 1B FDW MASTER Bailey stations and verifying the red AUTO lights illuminate and the white HAND lights extinguish.</p> <p>Continue to Step 20.</p> <p><b>Note: Simultaneous operation is not critical.</b></p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p style="text-align: center;"><b>CAUTION</b></p> <p>Changing Total FDW flow will result in Rx power change. Total FDW flow should be maintained as near constant as possible by adjusting FDW pump speed and FDW control valve positions.</p> <p><u>STEP 20:</u>      Step 20 Verify lowest FDW VALVE <math>\Delta P \approx 35</math> psid</p> <p><u>STANDARD:</u>    Verify lowest FDW VALVE <math>\Delta P \approx 35</math> psid by observing the FBW VALVE <math>\Delta P</math> gauge.  Continue to Step 21</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u>      Step 21 Verify 1A MAIN FDW PUMP Measured Variable is on the caret.</p> <p><u>STANDARD:</u>    Place selector switch to Measured Variable and verify the pointer on the 1A MAIN FDW PUMP is on the caret.  Continue to Step 22.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u>      Step 22 <b>IAAT</b> 1A MAIN FDW PUMP Measured Variable is on the caret, <b>AND</b> desired in AUTO, <b>THEN</b> place 1A MAIN FDW PUMP in AUTO.</p> <p><u>STANDARD:</u>    Place 1A MAIN FDW PUMP in AUTO by depressing the AUTO pushbutton and verify the red AUTO light illuminates and the white HAND light extinguishes.  Continue to Step 23.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSA?</p>

<p><u>STEP 23:</u> Step 23 Verify 1B MAIN FDW PUMP Measured Variable is on the caret.</p> <p><u>STANDARD:</u> Place selector switch to Measured Variable and verify the pointer on the 1B MAIN FDW PUMP is on the caret.</p> <p>Continue to Step 24.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 24:</u> Step 24 <b>IAAT</b> 1B MAIN FDW PUMP Measured Variable is on the caret, <b>AND</b> desired in AUTO. <b>THEN</b> perform the following:</p> <ul style="list-style-type: none"> <li>• Adjust 1B MAIN FDW PUMP bias as required using 0 1E2092 (FWT 1B BIAS).</li> <li>▪ Place 1B MAIN FDW PUMP in AUTO.</li> </ul> <p><u>STANDARD:</u> Place 1B MAIN FDW PUMP in AUTO by depressing the AUTO pushbutton and verify the red AUTO light illuminates and the white HAND light extinguishes.</p> <p>Continue to Step 25</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 25:</u> Step 25 Verify 1FDW-32 Measured Variable is on the caret</p> <p><u>STANDARD:</u> Place selector switch to Measured Variable and verify the pointer on the 1FDW-32 controller is on the caret.</p> <p>Continue to Step 26</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 26:</u>      Step 26 Verify 1FDW-35 Measured Variable is on the caret.</p> <p><u>STANDARD:</u>    Place selector switch to Measured Variable and verify the pointer on the 1FDW-35 controller is on the caret.</p> <p>                         Continue to Step 27.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>NOTE"</b> 1FDW-32 and 1FDW-35 should both be placed in AUTO simultaneously.</p> </div> <p><u>STEP 27:</u>      Step 27 Place the following in AUTO:</p> <ul style="list-style-type: none"> <li>• 1FDW-32</li> <li>• 1FDW-35</li> </ul> <p><u>STANDARD:</u>    The 1FDW-32 and 1FDW-35 is placed in AUTO simultaneously by depressing the Auto pushbuttons on both the 1FDW-32 and 1FDW-35 Bailey stations and verifying the red AUTO lights illuminate and the white HAND lights extinguish.</p> <p>                         Continue to Step 28.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 28:</u>      Step 28 Verify IFDW-41 Measured Variable is on the caret</p> <p><u>STANDARD:</u>    Place selector switch to Measured Variable and verify the pointer on the 1FDW-41 controller is on the caret.</p> <p>                         Continue to Step 29.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 29:</b> Step 29 Verify 1FDW-44 Measured Variable is on the caret.</p> <p><b>STANDARD:</b> Place selector switch to Measured Variable and verify the pointer on the 1FDW-44 controller is on the caret.</p> <p>Continue to Step 30.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>	
<table border="1" style="width: 100%; text-align: center;"> <tr> <td> <p><b>NOTE</b> 1FDW-41 and 1FDW-44 should both be placed in AUTO simultaneously.</p> </td> </tr> </table> <p><b>STEP 30:</b> Step 30 Place the following in AUTO:</p> <ul style="list-style-type: none"> <li>• 1FDW-41</li> <li>• 1FDW-44</li> </ul> <p><b>STANDARD:</b> The 1FDW-41 and 1FDW-44 is placed in AUTO simultaneously by depressing the Auto pushbuttons on both the 1FDW-41 and 1FDW-44 Bailey stations and verifying the red AUTO lights illuminate and the white HAND lights extinguish.</p> <p>Continue to Step 31.</p> <p><b>COMMENTS:</b></p>	<p><b>NOTE</b> 1FDW-41 and 1FDW-44 should both be placed in AUTO simultaneously.</p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>NOTE</b> 1FDW-41 and 1FDW-44 should both be placed in AUTO simultaneously.</p>		
<p><b>STEP 31:</b> Step 31 Slowly adjust the following as required by unit operation:</p> <ul style="list-style-type: none"> <li>• Tave</li> <li>• THP</li> <li>• Delta Tc</li> </ul> <p><b>STANDARD:</b> Adjust the above on 1UBI as required by unit operation.</p> <p>Continue to Step 32.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>	

<p><u>STEP 32:</u>      Step 32                     Ensure CTPD SET at desired value</p> <p><u>STANDARD</u>    Ensure CTPD SET at desired value on 1UBI.</p> <p><u>COMMENTS:</u></p>   <p style="text-align: right;"><b>END TASK</b></p>	<p>____ SAT</p>  <p>____ UNSAT</p>
--	--

STOP TIME: \_\_\_\_\_

**RI AL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
3	The setpoint and the parameter have to be matched to prevent a plant transient as the ICS is place in AUTO.
4	Required to place the ICS in AUTO.
7	Required to place the ICS in AUTO.
8	The setpoint and the parameter have to be matched to prevent a plant transient as the ICS is place in AUTO.
10	Required to place the ICS in AUTO.
12	Required to place the ICS in AUTO.
14	Required to place the ICS in AUTO.
16	Required to place the ICS in AUTO.
19	Required to place the ICS in AUTO.
22	Required to place the ICS in AUTO.
24	Required to place the ICS in AUTO.
27	Required to place the ICS in AUTO.
30	Required to place the ICS in AUTO.

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

**INITIAL CONDITIONS:**

1. ICS AUTO power lost
2. AP/23 (Loss of ICS Power) in progress
3. ICS AUTO power has been restored

**INITIATING CUES:**

The SRO directs you to perform Enclosure 5.5 (Placing ICS *in* AUTO) to place ALL ICS H/A stations in AUTO.

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

**CRO-900**

**Release GWD Tank**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

Release GWD Tank

Alternate Path:

No

**Facility JPM #:**

NEW

**K/A Rating(s):**

System: 071

WA: A426

Rating: 3.1/3.9

Task Standard:

Release a GWD tank correctly using OP/1&2/A/1104/018 Encl 4 9 ( GWD Tank Release)

Preferred Evaluation Location:

Simulator  X  In-Plant      

Preferred Evaluation Method:

Perform  X  Simulate      

**References:**

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

**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 IC-30
2. GotoRUN

**Tools/Equipment/Procedures Needed:**

**READ TO OPERATOR**

**DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

**INITIAL CONDITIONS:**

Release of "B" GWD tank *is* desired

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

**INITIATING CUES:**

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

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b> Step 2.3 Determine any other GWR(s) are in progress at station.</p> <p><b>STANDARD:</b> Determine that no other GWR(s) are in progress at ONS Continue to Step 2.4</p> <p><b>Cue:</b> <i>No other GWRs are in progress.</i></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b> Step 2.4 <b>IF</b> release will be made at 1/3 station release limit, verify 1RIA-45 High and Alert Alarm setpoints set per PT/0/A/0230/001 (Radiation Monitor Check).</p> <p><b>STANDARD:</b> Refer to PT/0/A/0230/001 (Radiation Monitor Check) and verify 1RIA-45 High and Alert Alarm setpoints using the RIA View Node. Continue to Step 2.5</p> <p><b>Note:</b> The setpoints will not be correct and will require the candidate to reset them per PT/0230/001.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b> Step 2.5 <b>IF</b> release will be made at 2/3 station release limit:</p> <p><b>STANDARD</b> Determine that this release will be made a 1/3 station limit N/A steps 2.5.1 - 2.5.5. Continue to Step 3.1</p> <p><b>Cue:</b> <i>If asked inform the candidate as the SRO that this release will be at 1/3 station limit.</i></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 4:</b> Step 3.1 Record background readings for 1RIA-37 &amp; 1RIA-38 on Enclosure 4.10 "GWD Tank Sample Request".</p> <p><b>STANDARD:</b> Determine background readings for 1RIA-37 &amp; 1RIA-38 by observing the RIA readings on the RIA View Node and record on Enclosure 4.10.</p> <p>Note: The background readings should <b>be</b> as follows: <b>1RIA-37</b> Background reading <b>is: 45 cps</b> <b>1RIA-38</b> Background reading <b>is: 6.6 cps</b> Continue to Step 3.2</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>NOTE:</b> The RIA required to terminate release (RIA within range) must be operable or two independent samples must be taken (SLG 16.11.3).</p> <p><b>STEP 5:</b> Step 3.2 Recommended 1RIA-37 and 38 <b>High</b> and Alert setpoints:</p> <ul style="list-style-type: none"><li>• 1RIA-37 <b>4.75 E3</b> cpm above background</li><li>• 1RIA-38 <b>3.13 E2</b> cpm above background</li></ul> <p><b>STANDARD:</b> Obtain this information from the sample request and record on form. Continue to Step 3.3</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 6:</b> Step 3.3 Adjust 1RIA-37 setpoints for release per on6 of the following: 3.3.1 <b>IF</b> above instrument range over-ride 1RIA-37 setpoints:</p> <ul style="list-style-type: none"> <li>• Set 1RIA-37 Alert setpoint at zero</li> <li>• Set 1RIA-37 High setpoint at zero</li> </ul> <p>Or</p> <p>3.3.2 <b>IF</b> required to set alarms:</p> <ul style="list-style-type: none"> <li>• Set 1RIA-37 Alert setpoint at <u>4795</u> cpm</li> <li>• Set 1RIA-37 High setpoint at <u>4795</u> cpm</li> </ul> <p><b>STANDARD:</b> Determine setpoints for release are NOT above instrument range and NIA step 3.3.1.</p> <p>Determine required setpoints by adding background to data from the sample request and enter it on this form.</p> <p>Continue to Step 3.4</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 7:</b> Step 3.4 Adjust 1RIA-38 setpoints for release per one of the following: 3.4.1 <b>IF</b> above instrument range over-ride 1RIA-38 setpoints:</p> <ul style="list-style-type: none"> <li>• Set 1RIA-38 Alert setpoint at zero</li> <li>• Set 1RIA-38 High setpoint at zero</li> </ul> <p>Or</p> <p>3.4.2 <b>IF</b> required to set alarms:</p> <ul style="list-style-type: none"> <li>• Set 1RIA-38 Alert setpoint at <u>319.6</u> cpm</li> <li>• Set 1RIA-38 High setpoint at <u>319.6</u> cpm</li> </ul> <p><b>STANDARD:</b> Determine setpoints for release are NOT above instrument range and N/A step 3.3.1.</p> <p>Determine required setpoints by adding background to data from the sample request and enter it on this form.</p> <p>Continue to Step 3.5</p> <p><b>COMMENTS</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 8:</u> Step 3.5 Reset WASTE GASTANK DISCH integrator to zero.</p> <p><u>STANDARD:</u> Reset WASTE GASTANK DISCH integrator located on 1AB3 to zero by depressing the reset button.</p> <p>Continue to Step 3.6</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Step 3.6 Ensure GWR DISCHARGE FLOW CONTROL in "HAND".</p> <ul style="list-style-type: none"> <li>• Verify GWR DISCHARGE FLOW CONTROL "CLOSED"</li> </ul> <p><u>STANDARD:</u> Ensure GWR DISCHARGE FLOW CONTROL in "HAND" and CLOSED located on 1AB3.</p> <p>Continue to Step 3.7</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> Step 3.7 Open GWD-100 (Decay Tanks Discharge Header Block). (A-2-209/E 13' N of Door)</p> <p><u>STANDARD:</u> Dispatch NEO to Open GWD-100 (Decay Tanks Discharge Header Block).</p> <p>Continue to <b>Step 3.8</b></p> <p><b>Cue: inform candidate that GWD-100 is open.</b></p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 11:</b> Step 3.8 IF releasing GWD Tank B perform the following:</p> <ul style="list-style-type: none"> <li>• Open GWD-99 (Decay Tank 1B Discharge Block)</li> <li>• Place GWD-5 (5 GWD TANK DISCHARGE) switch to "AUTO"</li> </ul> <p><b>STANDARD:</b> Dispatch NEO to open GWD-99 (Decay Tank 15 Discharge Block).</p> <p><b>Cue: Inform candidate that GWD-99 is open.</b></p> <p>Located GWD-5 (B GWD TANK DISCHARGE) on 1AB3 and place switch to "AUTO" Continue to Step 3.9</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 12:</b> Steps 3.9 – 3.11 IF releasing GWD Tank B perform the following...</p> <p><b>STANDARD:</b> Determine NOT releasing GWD Tank A, C, D and N/A steps 3.8, 3.10, and 3.11. Continue to Step 3.12</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="124 1317 1214 1451" style="border: 1px solid black; padding: 5px;"> <p><b>NOTE:</b> • Station Limit release rates, per SLC 16.11, will <b>NOT</b> be exceeded if recommended release rates per Enclosure 4.10 "GWD Tank Sample Request" are followed. • Limit and Precautions have required approval levels for release.</p> </div> <p><b>STEP 13:</b> Step 3.12 Approval granted for release.</p> <p><b>STANDARD:</b> Obtain approval for release. Continue to Step 3.13</p> <p><b>Cue: Approval is granted for release by Traci Lemons at current Date/Time.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 14:</b> Step 3.43 <b>IF</b> releasing at 2/3 Station Limit:</p> <p><b>STANDARD:</b> Determine NOT releasing at 2/3 Station Limit by previous cue. Continue to Step 3.14</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 15:</b> Step 3.14 Recommended Release Rate from Enclosure 4.10 "GWD Tank Sample Request": <b>5.97 E7</b> cfm.</p> <p><b>STANDARD:</b> Record Recommended Release Rate from Enclosure 4.10 "GWD Tank Sample Request". Continue to Step 3.15</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<div data-bbox="127 1160 1212 1384" style="border: 1px solid black; padding: 5px;"> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• If U1 Penetration Room Ventilation (PRV) system is shutdown, RIA-32 U1 Penetration Room sample point does <b>NOT</b> sample general area air properly.</li> <li>• With U1 PRV system shutdown. RIA-32 sample point for U1 Penetration Room is sampling air in piping between U1 Unit Vent and PRV discharge.</li> <li>• RIA-32 counts may increase when selected to U1 Penetration Room while making a GWD Release.</li> </ul> </div> <p><b>STEP 16:</b> Step 3.15 Place a note on Turnover sheet that RIA-32 Penetration Room sample point may alarm when selected to U1 Penetration Room during GWD release.</p> <p><b>STANDARD:</b> Candidate should indicate a note should be placed on the Turnover sheet indicating that RIA-32 Penetration Room sample point may alarm when selected to U1 Penetration Room during GWD release. Continue to Step 3.16</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><u>STEP 17:</u> Step3.16 Adjust GWR DISCHARGE FLOW CONTROL to obtain desired release rate.</p> <p><u>STANDARD:</u> Slowly adjust the manual loading knob to obtain the desired release rate. Continue to Step 3.17</p> <p><b>Note:</b> Although <b>the maximum rate</b> is high the <b>actual release rate will be low.</b></p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL STEP</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 18:</u> Step 3.17 Record "Begin GWR # _____" in Unit Log.</p> <p><u>STANDARD:</u> Candidate should indicate a Unit log entry would be made.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**END TASK**

STOP TIME: \_\_\_\_\_

## **CRITICAL STEP EXPLANATIONS:**

<b>STEP #</b>	<b>Explanation</b>
2	Required to set <b>RIA</b> to prevent station release above limits.
6	Required to set <b>RIA</b> to prevent station release above limits.
7	Required to set <b>RIA</b> to prevent station release above limits.
10	Required to align release flow <b>path</b> .
11	Required to align release flow path.
17	Required to align release flow path.

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

**INITIAL CONDITIONS:**

Release of "B" GWD tank is desired

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

**INITIATING CUES:**

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

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

**NLO-036**

**STARTUP A VITAL BUS INVERTER**

**CANDIDATE**

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**EXAMINER**

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REGION II  
INITIAL LICENSE EXAMINATION  
JOB PERFORMANCE MEASURE

**Task:**

STARTUP A VITAL BUS INVERTER

**Alternate Path:**

NO

**Facility JPM #**

NLO-036

**K/A Rating(s):**

System: 062

K/A: A3.04

Rating: 2.7/2.9

**Task Standard:**

Vital Bus Inverter placed in service correctly

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ In-Plant X

**Preferred Evaluation Method:**

Perform \_\_\_\_\_ Simulate X

**References:**

OP/1,2,3/A/1107/04, Enclosure 4 2 (Startup of The Vital Bus Inverters)

**Validation Time:** 9 minutes

**Time Critical:** NO

**Candidate:** \_\_\_\_\_  
NAME

Time Start, \_\_\_\_\_  
Time Finish, \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_  
NAME

\_\_\_\_\_  
SIGNATURE / DATE

**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

***NONE***

**Tools/Equipment/Procedures Needed:**

**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:**

Earlier today the **1DIB** Vital Bus Inverter was shutdown for maintenance. I & E personnel have just notified the Control Room SRO that they have completed their work on the inverter. The affected 120VAC Vital Instrumentation Power Panelboard is being supplied by Regulated AC Panelboard KRA.

**INITIATING CUE:**

The Control Room SRO directs you to startup **1DIB** Vital Bus Inverter per OP/1/A/1107/04 (Enclosure 4.2). DC Power to the inverter has not been isolated.

Begin at Step 2.1.

START TIME: \_\_\_\_\_

<p><u>STEP 1:</u> Step 2.1 IF DC power to the inverter has been isolated, close breaker #33 on the associated DC panelboard.</p> <p><u>STANDARD:</u> Determine that DC power to the inverter has not been isolated by referring to the initial conditions.</p> <p>Continue to Step 2.2.</p> <p><b>CUE: <i>Indicate to candidate that breaker #33 is closed.</i></b></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Step 2.2 Press the PRECHARGE SWITCH pushbutton until the PRECHARGE light comes on.</p> <p><u>STANDARD:</u> The candidate depresses the PRECHARGE SWITCH pushbutton until the PRECHARGE light comes on.</p> <p><b>CUE: <i>Indicate to the student that the PRECHARGE light is ON.</i></b></p> <p>Continue to Step 2.3.</p> <p><u>COMMENTS:</u></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 3:</b> Step 2.3 CLOSE the DC INPUT circuit breaker and verify Vital Bus INVERTER OUTPUT voltage increases to approximately 120 volts AC.</p> <p><b>STANDARD:</b> The DC INPUT circuit breaker is CLOSED</p> <p><b>Cue: indicate to the student that the DC INPUT breaker is in the ON position.</b> INVERTER OUTPUT voltmeter, AC volts, is observed and verified to indicate approximately 120 volts AC.</p> <p><b>Cue: indicate to student that inverter voltage INCREASES from 0 to 120 volts AC, as indicated on the INVERTER OUTPUT voltmeter.</b></p> <p>Continue to Step 2.4.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 4:</b> Step 2.4 CLOSE the INVERTER OUTPUT circuit breaker.</p> <p><b>STANDARD:</b> The INVERTER OUTPUT circuit breaker is CLOSED</p> <p><b>CUE: indicate to the student that the INVERTER OUTPUT breaker is in the ON position.</b></p> <p>Continue to Step 2.5.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 5:</b> Step 2.5 VERIFY the IN SYNC light is on.</p> <p><b>STANDARD:</b> Green IN SYNC light is verified ON.</p> <p><b>CUE:</b> <i>indicate to student that IN SYNC light is ON.</i></p> <p>Continue to Step 2.6.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 6:</b> Step 2.6 POSITION the MANUAL BYPASS SWITCH to the "NORMAL SOURCE position.</p> <p><b>STANDARD:</b> Student rotates the Manual Bypass Switch from the ALTERNATE SOURCE position to the NORMAL SOURCE position.</p> <p><b>Cue:</b> <i>Indicate to the student that the Manual Bypass Switch is in the NORMAL SOURCE position.</i></p> <p>Continue to Step 2.7.</p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

**STEP 7:**

Step 2.7

VERIFY the following indications:

INVERTER OUTPUT volt meter  $\approx$  120 volts

- Inverter Output frequency meters 60 Hz
- INVERTER OUTPUT amp meter increases and stabilizes to match SYSTEM OUTPUT amp meter.

**STANDARD:** The following indications are verified:

INVERTER OUTPUT volts  $\approx$  120

INVERTER OUTPUT frequency  $\approx$  60 Hz.

INVERTER OUTPUT amp meter increases and stabilizes to match SYSTEM OUTPUT amp meter.

**Cue: Provide the following indications to the student:**

- **INV. OUTPUT volts 120.**
- **INV. OUTPUT freq. 60.**
- **INV. OUTPUT amps 20 - 40.**
- **SYS. OUTPUT amps 20 - 40.**

**COMMENTS:**

\_\_\_ SAT

\_\_\_ UNSAT

**END TASK**

STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

<b>STEP #</b>	<b>Explanation</b>
2	Precharge input filter capacitor prevents a large increase in current when the inverter is placed on line.
3	Closing the DC input breaker supplies DC input to the inverter.
4	Closing this breaker connects the inverter output to the input of the autotransformer.
6	Selecting NORMAL Source with the Manual Bypass Switch causes a make before break transfer to the inverter output placing the inverter in service.

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

**INITIAL CONDITIONS:**

Earlier today the **1DIB** Vital Bus Inverter was shutdown *for* maintenance. I & E personnel have just notified the Control Room SRO that they have completed their work on the inverter. The affected 120VAC Vital Instrumentation Power Panelboard is being supplied by Regulated AC Panelboard KKA.

**INITIATING CUE:**

The Control Room SRQ directs you to startup **1DIB** Vital Bus Inverter per OP/1/A/1107/04 (Enclosure 4.2). DC Power to the inverter has not been isolated.

Begin at Step 2.1

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

**NLO-039**

**PRIME THE SPENT FUEL POOL FILL LINE**

**CANDIDATE**

---

**EXAMINER**

---

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

**Task:**

**PRIME THE SPENT FUEL POOL FILL LINE**

**Alternate Path:**

No

**Facility JPM #:**

NLO-039

**K/A Rating(s):**

System: APE022

KIA: AK3.02

Rating: 3.5/3.8

**Task Standard:**

SFP Priming Pump is aligned and started

**Preferred Evaluation Location:**

Simulator \_\_\_\_\_ In-Plant X

**Preferred Evaluation Method:**

Perform \_\_\_\_\_ Simulate X

**References:**

EOP Enclosure "HPI Pump Operations from ASW Pump Switchgear"

**Validation Time: 16 minutes**

**Time Critical: NO**

**Candidate:** \_\_\_\_\_

NAME

Time Start: \_\_\_\_\_

Time **Finish:** \_\_\_\_\_

**Performance Rating:** SAT \_\_\_\_\_ UNSAT \_\_\_\_\_

Performance Time \_\_\_\_\_

**Examiner:** \_\_\_\_\_

NAME

SIGNATURE

DATE

**COMMENTS**

**SIMULATOR OPERATOR INSTRUCTIONS:**

**NONE**

**Tools/Equipment/Procedures Needed:**

**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 tornado has struck Unit 2 Turbine Building and destroyed the 4160 volt switchgear TC, TD, and TE.

It also struck the Unit 2 BWST, rupturing and draining it.

The SSF Reactor Coolant Makeup Pump failed to start.

2A HPIP has been powered from the ASW switchgear.

The Spent Fuel Pool level is currently +1.0 feet.

**INITIATING CUES:**

The EOP directs the operator to perform "HPI Pump Operation From ASW Pump Switchgear" Enclosure to align HPIPs to the SFP.

Another operator is aligning the HPI Suction from the SFP.

The Control Room SRO directs you to prime the Spent Fuel Pool fill line on Unit 2 per this Enclosure, beginning at Step 20.

START TIME: \_\_\_\_\_

<p><b>STEP 1:</b>        Step 20 Obtain bucket and rope from EOP equipment locker U2AB5. (A-5 U2 elevator lobby)</p> <p><b>STANDARD:</b>    Locate EOP equipment locker U2AB5 located at A-5, U2 elevator lobby and indicate that you would obtain a bucket and rope from the locker.</p> <p>Continue to Step 21.</p> <p><b>Cue: Inform candidate that opening the docker is not required.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 2:</b>        Step 21A Connect SF priming pump suction hose to quick disconnect fitting at SF-86 (SF PRIMING PUMP SEAL WATER INLET)</p> <p><b>STANDARD:</b>    Candidate connects suction hose to quick disconnect fitting at SF-86, or verifies it is connected</p> <p>Continue to Step 21B.</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 3:</b>        Step 21B Connect the Spent Fuel Priming Pump suction hose to the Spent Fuel Pool Fill line connection tap on SF-85 (SF PRIMING PUMP UNDERWATER SUPPLY BLOCK).</p> <p><b>STANDARD:</b>    Verify the Spent Fuel Priming Pump suction hose to the Spent Fuel Pool Fill line connection tap on SF-85 (SF PRIMING PUMP UNDERWATER SUPPLY BLOCK) is connected.</p> <p>Continue to Step 21C</p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b><u>STEP 4:</u></b> Step 21C Open SF-85 (SF PRIMING PUMP UNDERWATER SUPPLY BLOCK).</p> <p><b><u>STANDARD:</u></b> The student locates and opens <b>SF-85</b> (Pool Underwater Supply Block to Priming Pump) by rotating valve operator until handle is parallel with pipe.  Continue to Step 21D.</p> <p><b>Note: There is a special tool for operating SF-85 and SF-84 hanging at the South end of the Spent Fuel Pool.</b></p> <p><b><u>COMMENTS:</u></b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 5:</u></b> Step 21D Place the flex hose on the discharge of the SF Priming Pump into the SFP.</p> <p><b><u>STANDARD:</u></b> The student (simulates) placing the free end of discharge hose into the Spent Fuel Pool.  Continue to Step 21E.</p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b><u>STEP 6:</u></b> Step 21E CLOSE SF-84 (SF POOL UNDERWATER SUPPLY VENT)</p> <p><b><u>STANDARD:</u></b> SF-84 (SF Pool Underwater Supply Vent) is CLOSED by rotating valve operator until handle is perpendicular to pipe.  Continue to Step 21F.</p> <p><b>Note: There is a special tool for operating SF-85 and SF-84 hanging at the South end of the Spent Fuel Pool.</b></p> <p><b><u>COMMENTS:</u></b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEQ:</b> Step 21F Fill the SF Priming Pump Seal Tank to at least half-full with DW or water from SFP using bucket.</p> <p><b>STANDARD:</b> The candidate fills the SF Priming Pump Seal Tank at least half-full using DW from the North-West end of the SFP or by using the rope and bucket to dip out of the SFP.</p> <p><b>Note: it will take several buckets of water to fill the SF Priming Pump Seal Tank half-full.</b></p> <p>Continue to Step 22</p> <p><b>CUE: Communications have been established with operators at the ASW Pump Room and East Penetration Room.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 8:</b> Step 22 <b>WHEN</b> communication is established with operators in the following locations:</p> <ul style="list-style-type: none"> <li>• ASW Pump Room</li> <li>• East Pen Room</li> </ul> <p><b>THEN</b> open SF-86 (SF PRIMING PUMP SEAL WATER INLET)</p> <p><b>STANDARD:</b> Determine communications have been established with the above locations and then open SF-86 (SF PRIMING PUMP SEAL WATER INLET).</p> <p>Continue to Step 23.</p> <p><b>Cue: Communications have been established.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>

<p><b>STEP 9:</b> Step 23 Notify operator in ASW pump Rm to start U1/2 SF PRIMING PUMP (remote starter on S wall)</p> <p><b>STANDAKD:</b> Notify operator in ASW pump Rm to start U1/2 SF PRIMING PUMP Continue to Step 24.</p> <p><b>Cue: The U1/2 SF PRIMING PUMP is operating.</b></p> <p><b>COMMENTS:</b></p>	<p><b>CRITICAL TASK</b></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 10:</b> Step 24 <b>IAAT</b> seal tank level begins to rise, <b>THEN</b> close SF-86 (SF PRIMING PUMP SEAL WATER INLET)</p> <p><b>STANDARD:</b> Monitor seal tank level and determine it is NOT rising Continue to Step 25.</p> <p><b>Cue: Seal tank level is NOT rising.</b></p> <p><b>COMMENTS:</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><b>STEP 11:</b> Step 25 <b>WHEN</b> SFP fill line is primed (as indicated by a steady discharge stream from the SF priming pump), <b>THEN</b> notify Control Room of the following:</p> <ul style="list-style-type: none"> <li>• HPI suction aligned to SFP fill line</li> <li>• HPI pump cooling water status</li> <li>• An operator is available in the E Pen Rm to throttle 1HP-26</li> </ul> <p><b>STANDARD:</b> Monitor the hose attached to the SF priming pump discharge and determine the SFP line is primed. <b>THEN</b> Notify the Control Room the HPI suction is aligned to SFP fill line.</p> <p><b>Cue: The SF priming pump has steady discharge stream.</b></p> <p><b>Cue: Notifying the Control of the last two bulleted items is not required for this JPM.</b></p> <p><b>COMMENTS:</b></p> <p style="text-align: center;"><b>END TASK</b></p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: \_\_\_\_\_

## CRITICAL STEP EXPLANATIONS:

<b>STEP #</b>	<b>Explanation</b>
4	Necessary to provide suction to <b>the</b> priming pump.
7	Tank must be $\frac{1}{2}$ full to provide adequate water for priming
8	Required <b>to</b> provide flow path.
9	Priming pump must operate to fill the line.

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

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