

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM A
Rev. 0**

**Restore Control Power to SI Valves and Isolate Accumulators
IAW EPP-008**

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task: 01000102805, Perform a Post LOCA Cooldown and Depressurization IAW EPP-008.

Alternate Path:

Yes

JPM #:

ILC-14 NRC JPM A

K/A Rating(s):

| | |
|------------|---------|
| 002 K1.08 | 4.5/4.6 |
| 009 EA1.13 | 4.4/4.4 |
| 009 EA2.15 | 3.3/3.4 |

Task Standard:

AC control power restored to SI valves, SI accumulators are either isolated or depressurized per EPP-8.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

EPP-008, Post LOCA Cooldown and Depressurization

Validation Time: 5 min. **Time Critical:** No

Candidate: _____

Name

SSN

- -

**Overall
Time**

Start: _____

Finish: _____

**Critical
Time**

Start: _____

Finish: _____

Performance Rating:

circle one

SAT

UNSAT

Performance

Time (min):

Examiner:

Print

Signature

Date

COMMENTS

Step 2 critical because of component manipulation

Step 3 critical because breakers must be closed to operate components

Step 4 critical because of component manipulation AND required to prevent nitrogen injection to the RCS

Step 5 critical because of component manipulation AND required to prevent nitrogen injection to the RCS

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-606** for Simulator setup.
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

EPP-008, Post LOCA Cooldown and Depressurization

READ TO CANDIDATE**DIRECTIONS TO CANDIDATE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

1. Plant was initially at 100% power.
2. RCS depressurization resulted in reactor trip and safety injection.
3. EOP-E-1 has directed the crew to EPP-8 (Post LOCA cooldown and depressurization).
4. You are the Reactor Operator.
5. EPP-8 has been completed through Step 42.

INITIATING CUE:

The CRS has directed you to continue with EPP-8 at step 43 until the SI accumulators have been isolated.

START TIME: _____

| | |
|--|--|
| <p><u>STEP 1:</u> Check RCS Pressure is LESS THAN 1000 PSIG. (step 43)</p> <p><u>STANDARD:</u> Operator answers YES by observing ~750 psig RCS pressure on the RTGB/ERFIS.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 2:</u> Place the key switches for the following valves in the NORMAL position: (step 44)</p> <ul style="list-style-type: none"> • SI-862A & B • SI-863A & B • SI-864A & B • SI-866A & B • SI-869 <p><u>STANDARD:</u> Operator places the key switches in NORMAL position and observes the AMBER light illuminated above each switch (key switches located behind the RTGB):</p> <ul style="list-style-type: none"> • SI-862A & B • SI-863A & B • SI-864A & B • SI-866A & B • SI-869 <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

STEP 3: Locally Close The Breakers For The Following Valves: (step 45)

- SI-878A, SI PUMPS A&B DISCHARGE CROSS CONNECT (MCC-5, CMPT 2C)
- SI-865C, ACCUMULATOR C DISCHARGE (MCC-5, CMPT 9F)
- SI-865A, ACCUMULATOR A DISCHARGE (MCC-5, CMPT 14F)
- SI-865B, ACCUMULATOR B DISCHARGE (MCC-6, CMPT 10J)
- SI-878B, SI PUMPS B&C DISCHARGE CROSS CONNECT (MCC-6, CMPT 15C)

STANDARD: Operator directs Auxiliary Operators to close the breakers for the following valves: (3-way communication)

Inside Auxiliary Bldg: SI-865A, C, & 878A

Outside Auxiliary Bldg: SI-865B, & 878B

When breakers are reported closed, the operator determines proper indication for each component by observing the following:

- SI-878A & B RED (open) lights illuminated, GREEN (shut) lights extinguished
- SI-865A, B, & C RED (open) lights illuminated, GREEN (shut) lights extinguished

BOOTH INSTRUCTOR: When directed, respond as the Auxiliary Operator(s).
Close the breakers listed above IAW the SCN file.

EXAMINER'S NOTE: None.

EXAMINER'S CUE: None.

COMMENTS:

**CRITICAL
STEP**

____ SAT

____ UNSAT

STEP 4: Verify All ACCUM DISCHs - CLOSED (step 46)

- SI-865A
- SI-865B
- SI-865C

STANDARD: Operator places the RTGB control switches for SI-865A, B, & C in the "CLOSE" position and observes the following ("**C**" **Accumulator not isolated**):

- SI-865A GREEN (shut) light illuminated and RED (open) light extinguished
- SI-865B GREEN (shut) light illuminated and RED (open) light extinguished
- SI-865C GREEN (shut) light **and RED (open) light** illuminated

EXAMINER'S NOTE: Candidate will go to step 46 RNO

EXAMINER'S CUE: None.

COMMENTS:

**CRITICAL
STEP**

____ SAT

____ UNSAT

STEP 5: Vent any unisolated accumulator as follows: (step 46 RNO)

- a. Verify SI-855, ACC NITROGEN ISO is closed.
- b. Open the appropriate ACCUM VENT valves:
 - SI-853A
 - SI-853B
 - SI-853C
- c. Open HIC-936, ACC VENT HDR FLOW.

STANDARD:

- a. Operator closes SI-855 and places the RTGB control switch for SI-853C in the OPEN position and observes the proper valve light indication.
- b. Operator opens HIC-936 by rotating the RTGB potentiometer fully clockwise and observes:

HIC-936 controller demand indicating 100%.
“C” Accumulator pressure decreasing (PI-929 / 931)

EXAMINER’S NOTE: None

EXAMINER’S CUE: None.

COMMENTS:

END OF JPM

**CRITICAL
STEP**

____ SAT

____ UNSAT

TIME STOP: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Plant was initially at 100% power.
2. RCS depressurization resulted in reactor trip and safety injection.
3. EOP-E-1 has directed the crew to EPP-8 (Post LOCA cooldown and depressurization).
4. You are the Reactor Operator.
5. EPP-8 has been completed through Step 42.

INITIATING CUE:

The CRS has directed you to continue with EPP-8 at step 43 until the SI accumulators have been isolated.

**LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM B
Rev. 0**

Fill Reactor Coolant Pump Standpipe

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

Task Title: 01003100301, Fill Reactor Coolant Pump Standpipe

Alternate Path:

Yes

JPM #:

ILC-14 NRC JPM B

K/A Ratings(s):

003 A4.05 3.1 / 3.0

Task Standard:

Refill RCP 'A' Standpipe to clear alarm APP-001-C5

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator X In-Plant

Perform X

References:

OP-101, Filling the Reactor Coolant Pump Standpipe(s)

Validation Time: 5 min. **Time Critical:** No

Candidate

:

Name

SSN

-

-

**Overall
Time**

**Critical
Time**

Start:

Start:

Finish:

Finish

:

Performance Rating:

circle one

SAT

UNSAT

Performance

Time (min):

Examiner:

Print

Signature

Date

COMMENTS

Steps 1, 4, 5, 6, 7, 8 critical because of component manipulation

Steps 12, 13, and 14 are critical due to identifying and relieving the hydraulic lock

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-607** for Simulator setup. (From IC-5)
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

OP-101, Filling the Reactor Coolant Pump Standpipe(s)

READ TO CANDIDATE

DIRECTIONS TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

1. Plant is at 100% power.
2. APP-001-C5, RCP STANDPIPE HI/LO LVL has been received.
3. 2X2 Status Lights indicates RCP A STP LO
4. You are the Reactor Operator.

INITIATING CUE:

The CRS has directed you to refill the RCP Standpipe IAW OP-101 Section 8.2, starting with Step 8.2.1.2.

START TIME: _____

| | |
|---|--|
| <p><u>STEP 1:</u> VERIFY a Primary Water Pump is OPERATING. (OP-101 step 8.2.1.2.a)</p> <p><u>STANDARD:</u> Operator verifies that a Primary water pump is operating by placing the control switch to Start and observes the RED (on) indication illuminated.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 2:</u> CHECK CLOSED RC-519C, PW TO PRT. (OP-101 step 8.2.1.2.b)</p> <p><u>STANDARD:</u> Operator observes control switch in closed position and valve RC-519C GREEN (closed) indication illuminated.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 3:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.)</p> <p><u>STANDARD:</u> Candidate determines that RCP A has the low standpipe alarm and continues with Step 2.c.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 4:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.1)</p> <p> OPEN RC-522A, PW TO RCP "A".</p> <p><u>STANDARD:</u> Candidate opens RC-522A and B by placing control switch to the OPEN position and observing RED (open) indications illuminated and GREEN (closed) indications extinguished.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 5:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.2)</p> <p> OPEN RC-519A & B, PW TO CV ISO.</p> <p><u>STANDARD:</u> Candidate opens valves RC-519A and B by placing control switch to the OPEN position and observing RED (open) indications illuminated and GREEN (closed) indications extinguished.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 6:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.3)</p> <p> WHEN the RCP A STP LO status light extinguishes, THEN STOP the Primary Water Pump.</p> <p><u>STANDARD:</u> Candidate observes RCP A STP LO status light is extinguished.</p> <p> Candidate places the control switch for the running Primary Water Pump to STOP or AUTO and observes that the RED (on) indication is extinguished and the GREEN (off) indication is illuminated.</p> <p>EXAMINER'S NOTE: Depending on which Primary Water Pump was started to fill the RCP standpipe will determine the final position of the control switch. If the PW Pump aligned for RCS Makeup was used, the final switch position will be AUTO. If the other PW Pump was used, the final switch position will be STOP.</p> <p> APP-001-C5 Hi Lvl may alarm. If so, inform candidate that another operator will address the alarm.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 7:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.4)</p> <p>CLOSE RC-519A & B.</p> <p><u>STANDARD:</u> Candidate places the control switch for valves RC-519A and B to the CLOSE position and observes that the RED (open) indications extinguished and the GREEN (closed) indications illuminated for RC-519A. RC-519B indications now indicate dual position, the RED(open) and GREEN(closed) indications are both lit.</p> <p>EXAMINER'S NOTE: This is an indication of Hydraulic Lock for RC-519B. OP-101 will direct the candidate to OP-103 to remove the hydraulic lock.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 8:</u> IF RCP "A" Standpipe level is low, THEN PERFORM the following: (OP-101 step 8.2.1.2.c.5)</p> <p>CLOSE RC-522A, PW TO RCP "A".</p> <p><u>STANDARD:</u> Candidate places the control switch for valve RC-522A to the CLOSE position and observes that the RED (open) indication extinguished and the GREEN (closed) indication illuminated.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|-------------------------------------|
| <p><u>STEP 9:</u> Steps 8.2.1.2 “d” and “e” can be N/A’d because they do not apply.</p> <p>d. IF RCP "B" Standpipe level is low, THEN perform the following: (Step 8.2.1.2d)</p> <p>e. IF RCP "C" Standpipe level is low, THEN perform the following: (Step 8.2.1.2e)</p> <p><u>STANDARD:</u> Candidate does not perform 8.2.1.2 d or e.</p> <p>EXAMINER’S NOTE: Candidate will apply IF/THEN statement and NOT perform Steps 8.2.1.2.d and e</p> <p>EXAMINER’S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 10:</u> IF the Primary Water Pump is no longer needed to support Plant operation, THEN stop the Primary Water Pump. (Step 8.2.1.2.f)</p> <p><u>STANDARD:</u> Candidate has already stopped the running Primary Water pump in Step 6..</p> <p>EXAMINER’S NOTE: None</p> <p>EXAMINER’S CUE: None</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|--|
| <p>STEP 11: IF RC-519A or RC-519B do not fully close, THEN GO TO the Relieving Hydraulic Lock on RC-519A AND RC-519B Section of OP-103 to relieve hydraulic lock. (Step 8.2.1.2.g)</p> <p>STANDARD: Candidate determines that RC-519A is closed by GREEN (closed) indication illuminated and RC-519B is midposition(dual indication, Both Green and Red) and goes to OP-103, Section 8.4.1 to relieve hydraulic lock.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 12: Verify the following initial conditions are satisfied:(Step 8.4.1.1.a/b)</p> <p>a. RC-519A and B, PW TO CV ISO, control switch is in the CLOSE position and one OR both valves indicate in mid position.</p> <p>b. The Post Accident Sampling System is NOT in operation.</p> <p>STANDARD: Candidate determines that RC-519A and B, PW TO CV ISO, control switch is in the CLOSE position and RC-519B indicates in the mid position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 13:</u> IF RC-519B is indicating in mid position, THEN cycle RC-519C, PW TO PRT ISO. (Step 8.4.1.2)</p> <p><u>STANDARD:</u> Candidate observes RC-519B, PW TO CV ISO, in the mid position and cycles RC-519C, PW TO PRT ISO.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL</u> <u>STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 14:</u> Candidate observes RC-519B, PW TO CV ISO, go shut after they have cycled RC-519C.</p> <p><u>STANDARD:</u> Candidate observes RC-519B, PW TO CV ISO, go shut after they have cycled RC-519C.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL</u> <u>STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|-------------------------------------|
| <p><u>STEP 15:</u> IF RC-519A OR RC-519B is still indicating mid position, THEN declare the valve out of service AND refer to ITS LCO 3.6.3. (Step 8.4.1.4)</p> <p><u>STANDARD:</u> Candidate observes both RC-519A and RC-519B, PW TO CV ISO, in the closed position(Green Lights Illuminated). Determines that LCO 3.6.3 is N/A.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>This ends the JPM</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
|---|-------------------------------------|

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

5. Plant is at 100% power.
6. APP-001-C5, RCP STANDPIPE HI/LO LVL has been received.
7. 2X2 Status Lights indicates RCP A STP LO
8. You are the Reactor Operator.

INITIATING CUE:

The CRS has directed you to refill the RCP Standpipe IAW OP-101 Section 8.2, starting with Step 8.2.1.2.

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM C
Rev. 0**

Terminate an Inadvertent CV Spray Actuation IAW EOP-E-0

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task: 01000150805, Verify Engineering Safeguards Features Actuation System IAW EOP-E-0

Alternate Path:

No

JPM #:

ILC-14 NRC JPM C

K/A Rating(s):

026 A4.01 4.5/4.3

Task Standard:

Terminate an Inadvertent CV Spray Actuation

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

EOP-E-0, Reactor Trip or Safety injection

Validation Time: 5 min. **Time Critical:** No

Candidate: _____

Name

SSN

- -

**Overall
Time**

**Critical
Time**

Start: _____

Start: _____

Finish: _____

Finish: _____

Performance Rating:

circle one

SAT

UNSAT

Performance

Time (min):

Examiner:

Print

Signature

Date

COMMENTS

Step 4 critical because allows stopping CV Spray with a signal present

Step 5 critical because it would allow reopening Phase B isolation valves

Step 6 critical because it stops the CV Spray Pumps from the inadvertent actuation

Step 7 critical because it isolated CV from backleakage through the CV Spray Pump discharge valves

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-608** for Simulator setup.
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

EOP-E-0, Reactor Trip or Safety injection

READ TO CANDIDATE

DIRECTIONS TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

1. Plant was initially at 100% power.
2. S/G 'A' faulted inside containment
3. SI initiated
4. You are the Reactor Operator.
5. EOP-E-0 has been completed through Step 8.

INITIATING CUE:

The CRS has directed you to continue with EOP-E-0 step 9.a.

START TIME: _____

| | |
|---|-------------------------------------|
| <p><u>STEP 1:</u> Check CV Spray NOT Required: (EOP-E-0 step 9)</p> <p>a. CV pressure - HAS REMAINED LESS THAN 10 PSIG</p> <p><u>STANDARD:</u> Operator answers YES by observing ~6 psig containment pressure on the RTGB/ERFIS.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 2:</u> Check CV Spray NOT Required: (EOP-E-0 step 9)</p> <p>b. CV spray - NOT ACTUATED</p> <p><u>STANDARD:</u> Operator observes CV Spray Pumps 'A & B' running with valves aligned. Observes annunciators in alarm for CV Spray Actuation and Phase B. (RNO step 9.b)</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 3:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>1) Stop all RCPs.</p> <p><u>STANDARD:</u> Operator observes that all RCP's are secured.</p> <p>EXAMINER'S NOTE: RCP's previously secured IAW EOP-E-0 Foldout criteria.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 4:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>2) Override containment spray signal:</p> <p>a. Place Containment Spray key switch to OVRD/RESET.</p> <p><u>STANDARD:</u> Operator places the RTGB control switch for Containment Spray to the OVRD/RESET position. Observes APP-002-C1 illuminates.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 5:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>3) Reset containment isolation Phase B.</p> <p><u>STANDARD:</u> Operator depresses the Phase B reset pushbutton and observes APP-002- D2 annunciator is extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 6:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>4) Stop CV spray pumps.</p> <p><u>STANDARD:</u> Operator places the control switches for CV Spray Pumps 'A & B' to the stop position and observes the red indicating light extinguish and the green indicating light illuminate.</p> <p>EXAMINER'S NOTE: Operator can also verify pumps stopped by observing spray flow on FI-958A&B at zero gpm.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 7:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>5) Close CV spray pump discharge valves:</p> <ul style="list-style-type: none"> • SI-880A • SI-880B • SI-880C • SI-880D <p><u>STANDARD:</u> Operator places the control switches for SI-880 A/B/C/D to the closed position and observes the red indicating light extinguish and the green indicating light illuminate.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 8:</u> Check CV Spray NOT Required: (EOP-E-0 step 9.b RNO)</p> <p>b. IF CV spray inadvertently actuated, THEN perform the following:</p> <p>6) Close CV spray additive tank discharge valves:</p> <ul style="list-style-type: none"> • SI-845A • SI-845B <p><u>STANDARD:</u> Operator places the control switches for SI-845 A & B/ to the closed position and observes the red indicating light extinguish and the green indicating light illuminate.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF JPM</p> | <p>____ SAT</p> <p>____ UNSAT</p> |

TIME STOP: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Plant was initially at 100% power.
2. S/G 'A' faulted inside containment
3. SI initiated
4. You are the Reactor Operator.
5. EOP-E-0 has been completed through Step 8.

INITIATING CUE:

The CRS has directed you to continue with EOP-E-0 step 9.a.

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM D
Rev. 0**

Perform Emergency Boration IAW EOP-ES-0.1

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task: 01004101901, Perform Emergency Boration IAW EOP-ES-0.1.

Alternate Path:

Yes

JPM #:

ILC-14 NRC JPM D

K/A Rating(s):

| | |
|------------|---------|
| 024 AA1.02 | 3.7/3.5 |
| 024 AA1.04 | 3.6/3.7 |

Task Standard:

Emergency Boration flow to the RCS.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

EOP-E-ES0.1, Reactor Trip Response

Validation Time: 5 min. **Time Critical:** No

Candidate: _____

Name

SSN

-

-

**Overall
Time**

Start: _____

Finish: _____

**Performance
Time (min):** _____

**Critical
Time**

Start: _____

Finish: _____

Performance Rating:
circle one

SAT

UNSAT

Examiner:

Print

Signature

Date

COMMENTS

Steps 3 and 4 are critical because if not performed then boron will not be injected into the RCS

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-609** for Simulator setup.
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

EOP-E-ES0.1, Reactor Trip Response

READ TO CANDIDATE**DIRECTIONS TO CANDIDATE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

- Plant was at 7% RTP; the turbine was at 1800 rpm and ready to load.
- Intermediate Range Channel NI-36 failed high, causing a reactor trip.
- The crew performed the required steps of EOP-E-0, transitioned to EOP-ES-0.1, Reactor Trip Response, and has completed Step 5.
- Applicable actions of Foldout for EOP-ES-0.1 have been completed.
- Current RCS boron concentration is 890 ppm.

INITIATING CUE:

The CRS has directed you to continue with EOP-ES-0.1 step 6.

START TIME: _____

STEP 1: Check ALL Control Rods – FULL INSERTED. (EOP-ES-0.1 step 6)

STANDARD: Determines 2 control rods (G5, N9) not inserted by observing IRPI indication not on bottom and Rod Bottom lights not illuminated.
Candidate answers NO and proceeds to Step 6 RNO..

EXAMINER'S NOTE: None.

EXAMINER'S CUE: None.

COMMENTS:

_____ SAT

_____ UNSAT

STEP 2: IF two or more control rods are NOT fully inserted, THEN emergency borate to cold shutdown boron concentration: (EOP-ES-0.1 step 6 RNO)

- Use BAST:
 - a. Open boric acid to charging pump suction, MOV-350.

OR

- Use RWST:
 - a. Open emergency makeup to charging suction, LCV-115B.

IF LCV-115B can NOT be opened, THEN locally open CVC-358, RWST to charging pump suction.

STANDARD: Operator places the RTGB control switch for MOV-350 to the open position and observes the red indicating light is extinguished and the green indicating light is illuminated(Valve did not reposition).

OR

Operator places the RTGB control switch for LCV-115B to the open position and observes the red indicating light is extinguished and the green indicating light is illuminated(Valve did not reposition).

EXAMINER'S NOTE: If they try using MOV-350, it will not work which forces them to use the RWST. LCV-115B will not open which forces them to locally open CVC-358(performed in the next step).

EXAMINER'S CUE: None.

COMMENTS:

____ SAT

____ UNSAT

| | |
|--|--|
| <p><u>STEP 3:</u> IF two or more control rods are NOT fully inserted, THEN emergency borate to cold shutdown boron concentration: (EOP-ES-0.1 step 6 RNO)</p> <ul style="list-style-type: none"> • Use RWST: <ul style="list-style-type: none"> a. Open emergency makeup to charging suction, LCV-115B. <p>IF LCV-115B can NOT be opened, THEN locally open CVC-358, RWST to charging pump suction.</p> <p><u>STANDARD:</u> Operator dispatches AO to open CVC-358.</p> <p>BOOTH OPERATOR: Open CVC-358 when requested and inform CR.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 4:</u> IF two or more control rods are NOT fully inserted, THEN emergency borate to cold shutdown boron concentration: (EOP-ES-0.1 step 6 RNO)</p> <ul style="list-style-type: none"> • Use RWST: <ul style="list-style-type: none"> b. Close VCT outlet, LCV-115C. <p><u>STANDARD:</u> When informed by the AO that CVC-358 is open then the Operator places the RTGB control switch for LCV-115C to the close position and observes the red indicating light(Closed) is extinguished and the green indicating light(Open) is illuminated.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

TIME STOP: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Plant was at 7% RTP; the turbine was at 1800 rpm and ready to load.
- Intermediate Range Channel NI-36 failed high, causing a reactor trip.
- The crew performed the required steps of EOP-E-0, transitioned to EOP-ES-0.1, Reactor Trip Response, and has completed Step 5.
- Applicable actions of Foldout for EOP-ES-0.1 have been completed.
- Current RCS boron concentration is 890 ppm.

INITIATING CUE:

The CRS has directed you to continue with EOP-ES-0.1 step 6.

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM E
Rev. 0**

Remove N-44 From Service IAW OWP-011

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

Date

COMMENTS

Step 2, 4, 6, 7, 8, 9, and 10 critical because of component manipulation

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-610** for Simulator setup.
2. Go to run, acknowledge alarms.
3. QP RO at RO ERFIS terminal and QP BOP at BOP ERFIS terminal.
4. Ensure rear of NI cabinets are locked.
5. Go to freeze.
6. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

OWP-011, NI-4
ERFIS Computer

READ TO CANDIDATE**DIRECTIONS TO CANDIDATE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

- The plant is operating at 100% RTP.
- No equipment is out of service.
- I&C has requested a clearance on N-44 to replace the high voltage power supply.
- This clearance and work scope will render the N-44 input to QPTR inoperable.
- You are the BOP operator.
- The CRS has completed the required pre-job briefing.
- QPTR meets the SR 3.2.4.2 requirement.
- Reactor Engineering has been contacted to perform a Flux Map.

INITIATING CUE:

You are directed by the CRS to remove N-44 from service IAW OWP-011, NI-4.

START TIME: _____**STEP 1:** Remove NI-44 from ERFIS scan: **NIN0044A REMOVED****STANDARD:** NI-44 removed from ERFIS scan.**EXAMINER'S NOTE:** Removal from scan can be performed by the following actions:

- Select F3 = MENU on the bottom of the ERFIS screen
- Select ADMIN (ADMINISTRATIVE FUNCTIONS MENU)
- Select DR (DEL/RES POINT FROM/TO SCAN OR ALARM)
- Select DELETE SCAN
- ENTER POINT ID

Removal from scan can be performed by the following actions:

- If candidate knows the Turn On Code (TOC), he can type in DR and hit ENTER to go directly to the DR screen
- Select DELETE SCAN
- ENTER POINT ID

APP-005-D6, Delta Flux Warning / Status will be received and a printout initiated for the CAOC Alarm Report. "CHANNEL #4 NOW OUT OF SERVICE with reading noted as 0000 ??"

EXAMINER'S CUE: None.**COMMENTS:**

____ SAT

____ UNSAT

| | |
|---|--|
| <p><u>STEP 2:</u> DROPPED ROD MODE switch: BYPASS.</p> <p><u>STANDARD:</u> On NI-44 drawer, NI-44 DROPPED ROD MODE switch selected to BYPASS.</p> <p>EXAMINER’S NOTE: APP-005-D4, NIS TRIP/DROP ROD BYPASS will alarm when a Dropped Rod Mode switch is placed in BYPASS. DROPPED ROD BYPASS on the NI-44 drawer front will ILLUMINATE.</p> <p>EXAMINER’S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL</u> <u>STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 3:</u> NIS ROD DROP BYPASS NI-44 Status Light: ILLUMINATED.</p> <p><u>STANDARD:</u> The candidate observes the NIS ROD DROP BYPASS NI-44 status light on RTGB Section B is illuminated.</p> <p>EXAMINER’S NOTE: None.</p> <p>EXAMINER’S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 4:</u> NI-44 OUT OF SERVICE TRIP SWITCH: TRIPPED.</p> <p><u>STANDARD:</u> In the rear of NI-44 cabinet, the candidate positions the NI-44 OUT OF SERVICE TRIP SWITCH to the TRIPPED position. (Toggle switch in the UP position)</p> <p>EXAMINER'S NOTE: Operator determines that independent verification is not required due to the bistable status light is not illuminated prior to positioning the NI-44 OUT OF SERVICE TRIP SWITCH.</p> <p>This trips the 108% High Flux bistable for NI-44.</p> <p>EXAMINER'S CUE: Give key # 16 to student when ready to perform step.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 5:</u> Bistable light HI POW RANGE HI FLUX NC44R: ILLUMINATED.</p> <p><u>STANDARD:</u> The candidate determines that bistable light HI POW RANGE HI FLUX NC44R is illuminated on Bistable Status Panel B.29 / 931)</p> <p>EXAMINER'S NOTE: APP-005-A4, PR SINGLE CH HI RANGE ALERT will be received when bistable is actuated.</p> <p>OVERPOWER TRIP HIGH RANGE light on NI-44 drawer front will illuminate</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 6:</u> ROD STOP BYASS switch: BYPASS PR 44.</p> <p><u>STANDARD:</u> On the Miscellaneous Control and Indication Panel, the candidate places the ROD STOP BYPASS switch to the BYPASS PR 44 position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 7:</u> COMPARATOR CHANNEL DEFEAT switch: Select PR 44.</p> <p><u>STANDARD:</u> On the Comparator and Rate drawer, the candidate places the COMPARATOR CHANNEL DEFEAT switch to select PR 44 position. COMPARATOR DEFEAT light illuminates on the drawer above the switch.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 8:</u> DETECTOR CURRENT COMPARATOR Drawer: UPPER SECTION Switch: Select PR 44.</p> <p><u>STANDARD:</u> On the Detector Current Comparator drawer, the candidate selects PR 44 with the Upper Section switch.</p> <p>CHANNEL DEFEAT light for Upper Section illuminates when switch is selected out of NORMAL.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 9:</u> DETECTOR CURRENT COMPARATOR Drawer: LOWER SECTION Switch: Select PR 44.</p> <p><u>STANDARD:</u> On the Detector Current Comparator drawer, the candidate selects PR 44 with the LOWER Section switch.</p> <p>CHANNEL DEFEAT light for LOWER Section illuminates when switch is selected out of NORMAL.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL</u> <u>STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 10:</u> NI-44 INSTRUMENT POWER FUSES: REMOVED.</p> <p><u>STANDARD:</u> Candidate determines that this step is not required and N/As.</p> <p>EXAMINER'S NOTE: This action is N/A if power is > P-10 or the reactor is in Modes 3 through 6 (ITS Table 3.3.1-1).</p> <p>EXAMINER'S CUE: If candidate asks, inform him that I&C personnel will deenergize the drawer after AS FOUND readings are taken.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL</u> <u>STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 11:</u> Bistable light LOW POW RANGE HI FLUX NC44P: ILLUMINATED.</p> <p><u>STANDARD:</u> Candidate determines that this step can be signed or N/A'd.</p> <p>EXAMINER'S NOTE: This bistable is normally in the tripped condition (ILLUMINATED) at this power level. The candidate may sign for the step or N/A the step.</p> <p>EXAMINER'S CUE: None</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF JPM</p> | <p>____ SAT</p> <p>____ UNSAT</p> |

TIME STOP: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- The plant is operating at 100% RTP.
- No equipment is out of service.
- I&C has requested a clearance on N-44 to replace the high voltage power supply.
- This clearance and work scope will render the N-44 input to QPTR inoperable.
- You are the BOP operator.
- The CRS has completed the required pre-job briefing.
- QPTR meets the SR 3.2.4.2 requirement.
- Reactor Engineering has been contacted to perform a Flux Map.

INITIATING CUE:

You are directed by the CRS to remove N-44 from service IAW OWP-011, NI-4.

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM F
Rev. 0**

Respond to a Reactor trip and Turbine Trip

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

Task: 01000107305, Respond to a Reactor trip and Turbine Trip

Alternate Path:

Yes

JPM #:

ILC-14 NRC JPM F

K/A Rating(s):

| | |
|------------|---------|
| 045 A3.07 | 3.5/3.6 |
| 045 A3.08 | 3.3/3.5 |
| 007 EA1.06 | 4.4/4.5 |
| 007 EA1.07 | 4.3/4.3 |

Task Standard:

Perform immediate actions IAW EOP-E-0, Reactor and Turbine tripped.

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

EOP-E-0

Validation Time: 2 min. **Time Critical:** No

Candidate: _____
Name

SSN - -

Performance Rating: SAT UNSAT
circle one

Examiner: _____
Print

**Overall
Time**

Start: _____

Finish: _____

**Performance
Time (min):** _____

**Critical
Time**

Start: _____

Finish: _____

Date

Signature

COMMENTS

Steps 2 and 4 are critical due to actions necessary to complete actions that should have auto actuated.

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-611** for Simulator setup. (From IC-5)
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. SCN file 006_ ILC_14_NRC_CR_JPM_F
5. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

None, immediate actions.

READ TO CANDIDATE**DIRECTIONS TO CANDIDATE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

1. Plant is at 100% power.
2. You are the Reactor Operator.
3. The BOP is in the back and is not available.

INITIATING CUE:

Respond to events as they occur.

START TIME: _____

| | |
|--|--|
| <p><u>STEP 1:</u> Recognize/report Reactor Trip signal present and the need to perform EOP-E-0 Immediate Operator Actions</p> <p><u>STANDARD:</u> Reports Reactor Trip signal received and the need to enter EOP-E-0</p> <p>EXAMINER'S NOTE: AS CRS -> ACKNOWLEDGE OPERATOR'S REPORT</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 2:</u> Check Reactor Tripped (NO) (EOP-E-0 step 1)</p> <p><u>STANDARD:</u> Depress either of the Reactor Trip pushbuttons and check the following:</p> <ul style="list-style-type: none"> ▪ Reactor Trip and Bypass breakers open ▪ Rod Position Indication reading "0" ▪ Rod Bottom Lights illuminated ▪ Flux Decreasing <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 3:</u> Check Turbine Tripped (NO) (EOP-E-0 step 2)</p> <p><u>STANDARD:</u> Recognize/report Turbine is NOT tripped by indication of turbine stop valves are open (RED) and Governor valves have no indication</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 4:</u> Manually trip turbine. (EOP-E-0 step 2 RNO)</p> <p><u>STANDARD:</u> 2.a Manually trips or runbacks the turbine by one of the below methods:</p> <p>Depresses "THINK" and "Turbine Trip" pushbuttons to trip the turbine and ensures that, at a minimum, BOTH Turbine Stop valves are closed OR all FOUR Governor valves are closed.</p> <p>Places EH Control in Manual and depresses the GV DOWN pushbutton and the GV FAST pushbutton to ensure that all FOUR Governor valves are closed.</p> <p>IF turbine can NOT be run back, THEN manually close MSIVs and MSIV bypass valves.</p> <p>2.b All MSR purge and shutoff valves – CLOSED</p> <p>2.b RNO IF MSR purge and shutoff valves are NOT closed, THEN manually close MSR purge and shutoff valves.</p> <p>IF loss of power prevents MSR isolation, THEN manually close MSIV and MSIV bypass valves.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|-----------------------------------|
| <p><u>STEP 5:</u> Check Power To AC Emergency Busses: (EOP-E-0 step 3)</p> <p><u>STANDARD:</u> Determines both emergency buses are energized by observing the breaker indications that 480V Busses E-1 and E-2 are energized.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF JPM</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 6:</u> Check SI Status: (EOP-E-0 step 4)</p> <p><u>STANDARD:</u> If SI is actuated:</p> <p style="padding-left: 40px;">Check BOTH trains of SI – ACTUATED</p> <ul style="list-style-type: none"> ▪ SI pumps - BOTH RUNNING ▪ RHR pumps - BOTH RUNNING <p>EXAMINER'S NOTE: The SI initiation is dependent on how quickly the turbine is tripped following the manual reactor trip.</p> <p style="padding-left: 120px;">IF NECESSARY, AS CRS -> INFORM THE OPERATOR YOU WILL HAVE ANOTHER OPERATOR CONTINUE IN EOP-E-0</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |

TIME STOP: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Plant is at 100% power.
2. You are the Reactor Operator.
3. The BOP is in the back and is not available.

INITIATING CUE:

Respond to events as they occur

**REGION II
LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM G
Rev. 0**

**RESTORATION OF NORMAL POWER AFTER LOSS
OF STARTUP TRANSFORMER**

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

Task Title: 01062100501, Restoration of Normal Power After Loss of All AC Power and Turbine Trip with EDG's Operating

Alternate Path:

No

JPM #:

ILC-14 NRC JPM G

K/A Ratings(s):

| | |
|------------|---------|
| 056 AA1.02 | 4.0/3.9 |
| 062 A4.01 | 3.3/3.1 |
| 062 A4.07 | 3.1/3.1 |

Task Standard:

The normal on-site power distribution system is energized from the startup transformer (with the exception of E-1, E-2, and 480V bus 4 and 4KV bus 5).

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

OP-603, Electrical Distribution section 6.4.1

Validation Time: 20 min. **Time Critical:** No

Candidate:

Name

SSN

____ - ____ - ____

Start: _____
Finish: _____

**Overall
Time**

**Critical
Time**

Start: _____
Finish: _____

Performance Rating: SAT UNSAT

circle one

Examiner:

Print

**Performance
Time (min):**

Signature

Date

COMMENTS

Steps 10 through 14, 18, 21 through 24, 26, 27 and 29 are critical because steps must be performed correctly to restore power.

SIMULATOR OPERATOR INSTRUCTIONS:

1. Use **IC-612** for Simulator setup. (From IC-5 with a loss of SUT with Reactor trip. . All actions for EOP-E-0 and EOP-ES-0.1 through step 4 RNO have been completed.
2. Go to run, acknowledge alarms.
3. Freeze simulator.
4. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

OP-603, Electrical Distribution section 6.4.1

READ TO CANDIDATE

DIRECTIONS TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

- Plant was at 100% Power.
- A fault occurred on the line to the Startup Transformer causing a Reactor Trip and Loss Of Off-Site Power
- A and B emergency diesel generators started and have operated as required.
- EOP-E-0 and EOP-ES-0.1, Reactor Trip Response, actions are complete.
- Plant conditions are stable
- The line to the Startup Transformer has been repaired
- Initial conditions of OP-603, Section 6.4.1 steps 6.4.1.1 and 6.4.1.2 have been completed.

INITIATING CUE:

The CRS has directed you to perform OP-603 Section 6.4.1, Restoration of Normal Power After Loss of All AC Power and Turbine with EDG's Operating.

START TIME: _____

| | |
|---|-------------------------------------|
| <p><u>STEP 1:</u> Check Busses E1 and E2 are energized from the EDG's (Step 6.4.1.3)</p> <p><u>STANDARD:</u> Candidate verifies the EDG's are running and breakers 52/17B and 52/27B are closed by observing the Red indicating lights illuminated and the Green lights extinguished.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 2:</u> Check the following 4KV breakers OPEN (Step 6.4.1.4)</p> <ul style="list-style-type: none">• 52/12 (Incoming Line - Startup Transformer No. 2 - Bus 2)• 52/17 (Incoming Line - Startup Transformer No. 2 - Bus 3) <p><u>STANDARD:</u> Candidate observes breakers 52/12 and 52/17 open by Green indicating lights illuminated and the Red lights extinguished.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p style="text-align: center;">CAUTION</p> <p>EPP-21, Energizing Pressurizer Heaters from Emergency Busses, and/or EPP-25, Energizing Supplemental Plant Equipment Using the DSDG, may be in effect for powering PZR Heaters or other supplemental plant equipment. The Shift Manager shall be consulted prior to repositioning any electrical breakers aligned by either of these EPPs.</p> | |

| | |
|---|-------------------------------------|
| <p>STEP 3: If the SM concurs, THEN ensure the following breakers are OPEN or RACKED OUT: (Step 6.4.1.5)</p> <ul style="list-style-type: none">a. 52/18B (Station Service Transformer 2F to 480V Bus E1)b. 52/28B (Station Service Transformer 2G to 480V Bus E2)c. 52/22B (480V Bus E1 Supply to SI Pump 'B')d. 52/29B (480V Bus E2 Supply To Si Pump 'B')e. 52/8B (Station Service Transformer 2B to 480V Bus 2A)f. 52/9B (Station Service Transformer 2B to 480V Bus 2B)g. 52/32A (Feed to 480V Bus DS)h. 52/37B (Station Service Transformer 2E to 480V Bus 5) <p>STANDARD: Candidate observes breakers 52/18B, 28B, 8B, and 9B Green indicating lights illuminated and Red lights extinguished.</p> <p>Candidate contacts AO to check breakers 52/22B, 29B, 32A, and 37B to check them open.</p> <p>BOOTH OPERATOR: Contact the Control Room as AO and tell them that breakers 52/22B, 29B, 32A and 37B are open.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: SM concurs that breakers should be open.</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
|---|-------------------------------------|

| | |
|--|-------------------------------------|
| <p>STEP 4: Ensure the following breaker positions: (Step 6.4.1.6)</p> <ul style="list-style-type: none">a. 52/7 (Unit Aux to 4kV Bus 1) OPENb. 52/20 (Unit Aux to 4kV Bus 4) OPENc. 52/10 (4kV Bus 1-2 Tie) CLOSEDd. 52/19 (4kV Bus 3-4 Tie) CLOSED <p>STANDARD: Candidate observes breakers 52/7 and 52/20 Green indicating lights illuminated and Red lights extinguished.</p> <p>Candidate observes breakers 52/10 and 52/19 Red indicating lights illuminated and Green lights extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None.</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p>STEP 5: Locally ensure the 4kV Station Service Transformer Disconnect Switches 2A SST 2A, 2C SST 2C, 2F SST 2F and, 2G SST 2G Are CLOSED as follows: (Step 6.4.1.7)</p> <p>STANDARD: Candidate contacts AO to check disconnect switches.</p> <p>BOOTH OPERATOR: Contact the Control Room as the AO and tell them all disconnect switches are closed.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|-------------------------------------|
| <p>STEP 6: Ensure the Startup Transformer is ready to be returned to Service. (Step 6.4.1.8)</p> <p>STANDARD: Candidate was given this information in the initial conditions.</p> <p>BOOTH OPERATOR: If contacted, inform the Control Room that the SUT is ready to be returned to service.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p style="text-align: center;">CAUTION</p> <p>Resetting the Generator Lockout Relays 86P and 86BU should be done only after all applicable Generator Lockout Signals have been reset AND/OR removed. Attempting to reset either 86P or 86BU with a Lockout signal present will reactivate the fast bus transfer sequence and may cause a loss of 4kV busses.</p> <p>([8.7.19], [8.7.20], AD-OP-ALL-1000, Resetting Protective Devices)</p> | |

| <p>STEP 7: Perform the following to RESET the Generator Lockout Relays, 86P and 86BU: (Step 6.4.1.9)</p> <p style="margin-left: 40px;">a. Check the status of the following alarms:</p> <p style="margin-left: 40px;">b. IF any alarms listed in Section 6.4.1, Step 9.a are illuminated, THEN consult the SM for direction</p> | | <p>_____ SAT</p> <p>_____ UNSAT</p> |
|--|-----------------------------|--|
| ALARM | Illuminated (Circle one) | |
| APP-009-A4, GEN PHASE Δ TRIP | YES / NO | |
| APP-009-A5, MAIN TRANSF PHASE Δ TRIP | YES / NO | |
| APP-009-A6, AUX TRANSF OVLD / PHASE DIFF TRIP | YES / NO | |
| APP-009-B4, GEN GROUND TRIP | YES / NO | |
| APP-009-B5, MAIN TRANSF FAULT TRIP | YES / NO | |
| APP-009-B6, AUX TRANSF FAULT TRIP | YES / NO | |
| APP-009-C2, GEN NEG SEQ/OCB BU TRIP | YES / NO | |
| APP-009-D2, GEN MOTORING TRIP | YES / NO | |
| APP-009-D3, AUTO STOP GEN LOCKOUT | YES / NO | |
| APP-009-D5, OCB 52-8 FAILED TO OPEN | YES / NO | |
| APP-009-D6, OCB 52-9 FAILED TO OPEN | YES / NO | |
| APP-050-R8, GRD DETECTION 64E | YES / NO | |
| APP-050-R10, GRD DETECTION 64B | YES / NO | |
| <p>STANDARD: Candidate observes all APP-009 above are extinguished. Candidate sends AO to check APP-050-R8 and R10.</p> <p>BOOTH OPERATOR: Inform Control Room that APP-050 alarms are extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | | |

WARNING

Electrical busses that were de-energized for any reason should NOT be re-energized until the cause of the fault or basis for the loss of power is thoroughly investigated and corrected. Re-energizing busses without a proper investigation can lead to equipment damage, personnel injury, or death.
([8.7.19], [8.7.20], AD-OP-ALL-1000, Resetting Protective Devices)

| | |
|--|-----------------------------------|
| <p>STEP 8: Perform the following to RESET the Generator Lockout Relays, 86P and 86BU: (Step 6.4.1.9)</p> <p>c. IF any 4kV Busses are de-energized due to a Fault Trip or a Protective Relay Actuation, THEN consult the SM for direction</p> <p>STANDARD: Candidate may determine that the fault was on the line to the SUT from the initial conditions OR may consult with the SM..</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: If contacted as SM inform candidate that the fault has been corrected and there are no issues.</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 9: Perform the following to RESET the Generator Lockout Relays, 86P and 86BU: (Step 6.4.1.9)</p> <p>d. IF it is NOT possible to reset BOTH 86P and 86BU at this time,</p> <p>e. IF it is NOT possible to reset BOTH 86P and 86BU at this time,</p> <p>STANDARD: Candidate determines that steps 6.4.1.9.d and 6.4.1.9.e are N/A</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| Procedure NOTE: When closing a supply breaker to energize a 480V Bus, the switch must be held to the close position for at least 5 seconds in order to energize the undervoltage relays. | |
| <p>STEP 10: IF all alarms listed in Section 6.4.1, Step 9.a are clear AND none of the 4kV Busses are de-energized due to a Fault Trip or a Protective Relay Actuation, THEN ensure Generator Lockout Relays, 86P and 86BU, are RESET. (Step 6.4.1.9)</p> <p>STANDARD: Candidate ensures 86P and 86BU are reset by taking the switches to the vertical position and observing the light illuminates.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p style="text-align: center;">CAUTION</p> <ul style="list-style-type: none"> • All breakers shall be set up in normal operating position except breakers that tripped on low voltage or are racked out per Section 6.4.1, Step 5. • The length of time the Startup Transformer is energized without cooling fans running will be minimized to prevent overheating and possible damage to the transformer. Without cooling fans the transformer can be maintained at rated voltage for 6 hours at no load without causing any damage | |
| <p>STEP 11: Close the RTGB 115kV Switchyard to Startup Transformer LINE DISCONNECT SWITCH (Motor Operated Disconnect). (Step 6.4.1.10)</p> <p>STANDARD: Candidate places the RTGB control switch for the Line Disconnect Switch to close and observes the Red indicating light illuminate and the Green light extinguish.</p> <p>BOOTH OPERATOR: If contacted, inform the Control Room that everyone is clear of the SUT area.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p style="text-align: center;">NOTE</p> <p>When energizing a dead bus, the synchroscope will NOT come to the 12 o'clock position until after the breaker is closed and the dead bus is energized.</p> | |

| | |
|--|--|
| <p>STEP 12: Insert key into STARTUP TRANSF synchroscope switch and turn to STARTUP BUS 2 position. (Step 6.4.1.11)</p> <p>STANDARD: Candidate places the key switch to the STARTUP BUS 2 position and observes the synchroscope at the 3 o'clock position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 13: Close Breaker 52/12 (Incoming Line - Startup Transformer No. 2 - Bus 2). (Step 6.4.1.12)</p> <p>STANDARD: Candidate places the control switch for breaker 52/12 to the close position and observes RED closed indication illuminated and GREEN open indication extinguished. Observes the synchroscope in the 12 o'clock position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 14: Turn synchroscope key switch to MID-POSITION. (Step 6.4.1.13)</p> <p>STANDARD: Candidate observes synchroscope in the 3 o'clock position</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|-----------------------------------|
| <p>STEP 15: Place control switches for BOTH Condenser Vacuum Pumps to STOP. (Step 6.4.1.14)</p> <p>STANDARD: Candidate places both Vacuum Pump control switches to stop and observes that the GREEN light indication is illuminated and the RED indication is extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 16: Place control switches for BOTH EH Fluid Pumps to PULL-TO-LOCK. (Step 6.4.1.15)</p> <p>STANDARD: Candidate places both EH Pump control switches to Pump to Lock and observes light indication extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 17: Locally check Breaker 52/4 (Station Service Transformer 2B – Bus1) is CLOSED. (Step 6.4.1.16)</p> <p>STANDARD: Candidate sends AO to check breaker closed.</p> <p>BOOTH OPERATOR: Inform Control Room that breaker 52/4 is closed.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| <p>STEP 18 Close Breaker 52/9B (Station Service Transformer 2B to 480V Bus 2B). (Step 6.4.1.17)</p> <p>STANDARD: Candidate closes 52/9B with the control switch from the RTGB. Observes the Red indicating light illuminated and the Green light extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p>STEP 19 Ensure Startup Transformer cooling fans and oil pumps are OPERATING. (Step 6.4.1.18)</p> <p>STANDARD: Candidate sends AO to observe fans and oil pumps running.</p> <p>BOOTH OPERATOR: Inform the Control Room that the fans and pumps are Operating SAT.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p>STEP 20 Ensure Startup Transformer Local Alarm Panel is RESET and corresponding APP-009-C7, SU Transf Trouble, EXTINGUISHES. (Step 6.4.1.19)</p> <p>STANDARD: Candidate dispatches AO to reset SUT Local Alarm Panel</p> <p>BOOTH OPERATOR: Inform the Control Room that the SUT Local Alarm Panel is reset.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|--|
| <p>STEP 21 Close Breaker 52/8B (Station Service Transformer 2B to 480V Bus 2A). (Step 6.4.1.20)</p> <p>STANDARD: Candidate closes 52/8B with the control switch from the RTGB. Observes the Red indicating light illuminated and the Green light extinguished.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 22 Insert key into STARTUP TRANSF synchroscope switch and turn to STARTUP BUS 3 position. (Step 6.4.1.21)</p> <p>STANDARD: Candidate places the key switch to the STARTUP BUS 3 position and observes the synchroscope at the 3 o'clock position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 23 Close Breaker 52/17 (Incoming Line - Startup Transformer No. 2 - Bus 3). (Step 6.4.1.22)</p> <p>STANDARD: Candidate places the control switch for breaker 52/17 to the close position and observes RED closed indication illuminated and GREEN open indication extinguished. Observes the synchroscope in the 12 o'clock position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|--|
| <p>STEP 24 Turn synchroscope key switch to MID-POSITION. (Step 6.4.1.23)</p> <p>STANDARD: Candidate observes synchroscope in the 3 o'clock position.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 25 Locally check Breaker 52/13 (Station Service Transformer 2A & 2F) is CLOSED. (Step 6.4.1.24)</p> <p>STANDARD: Candidate sends AO to check breaker 52/13 closed.</p> <p>BOOTH OPERATOR: Inform Control Room that breaker 52/13 is closed.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p>STEP 26 Locally check the following breakers CLOSED: (Step 6.4.1.25)</p> <p>a. 52/1B (Station Service Transformer 2A to 480V Bus 1)</p> <p>b. 52/2B (Feed to 480V Bus 1)</p> <p>STANDARD: Candidate sends AO to check breakers 52/1B and 52/2B closed</p> <p>BOOTH OPERATOR: Inform Control Room that breaker 52/1B is closed and 52/2B is open.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p style="text-align: center;">NOTE</p> <p>Local voltage indication at the 480V Busses or the RTGB indication and alarms for electrical components powered from the respective bus can be used for verification that the bus is energized. EXAMPLE: Restored indication for CV Purge Fans HVE-1A and HVE-1B demonstrates that MCC-2 and MCC-1 are energized thus 480V Busses 2B and 1 are energized</p> | |

| | |
|---|--|
| <p>STEP 27 Ensure 480V Bus 1 is ENERGIZED (Step 6.4.1.26)</p> <p>STANDARD: Candidate observes light indication for components served by 480V Bus 1 are extinguished. Candidate closes breaker 52/2B and observes light indication for HVE-1B on.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p>STEP 28 Locally check Breaker 52/15 (Station Service Transformer 2C & 2G) is CLOSED. (Step 6.4.1.27)</p> <p>STANDARD: Candidate sends AO to check breaker 52/15 closed.</p> <p>BOOTH OPERATOR: Inform Control Room that breaker 52/15 is closed.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|--|
| <p>STEP 29 Ensure Breaker 52/16B (SST 2C to 480V Bus 3 & 480V Bus DS) And Breaker 52/15B (Feed to 480V Bus 3) are CLOSED. (Step 6.4.1.28)</p> <p> a. 52/16B CLOSED b. 52/15B CLOSED</p> <p>STANDARD: Ensures breakers 52/16B and 52/15B are closed. Observe Red light indication illuminated on 52/16B. Closes 52/15B by taking the RTGB control switch to close and observing the Red light indication illuminated.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> | <p><u>Critical Step</u></p> <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p>STEP 30 Ensure 480V Bus 3 is ENERGIZED. (Step 6.4.1.29)</p> <p>STANDARD: Candidate uses local voltage indication or RTGB indications to ensure 480V Bus 3 is energized.</p> <p>.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p>COMMENTS:</p> <p style="text-align: center;">END of JPM</p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

STOP TIME: _____

CANDIDATE CUE SHEET

(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- Plant was at 100% Power.
- A fault occurred on the line to the Startup Transformer causing a Reactor Trip and Loss Of Off-Site Power
- A and B emergency diesel generators started and have operated as required.
- EOP-E-0 and EOP-ES-0.1, Reactor Trip Response, actions are complete.
- Plant conditions are stable
- The line to the Startup Transformer has been repaired
- Initial conditions of OP-603, Section 6.4.1 steps 6.4.1.1 and 6.4.1.2 have been completed.

INITIATING CUE:

The CRS has directed you to perform OP-603 Section 6.4.1, Restoration of Normal Power After Loss of All AC Power and Turbine with EDG's Operating.

**LICENSE EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM H
Rev. 0**

Respond To Loss Of A Circulating Water Pump

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

LICENSE EXAMINATION JOB PERFORMANCE MEASURE

Task: 1000108505, Respond to a partial loss of condenser vacuum (Circulating Water Pump trip)

Alternate Path:

Yes

JPM #:

ILC-14 NRC JPM H

K/A **Rating (RO/SRO):**

075 A2.02 2.5/2.7

051 AA2.02 3.9/4.1

Task Standard:

Plant stable, standby Circulating Pump started

Preferred Evaluation Location:

Simulator X In-Plant

Preferred Evaluation Method:

Perform X Simulate

References:

AOP-012, Partial Loss of Condenser Vacuum or Circulation Water Pump Trip
APP-8 D4, CW PMP A MOTOR/DISCH VLV TRIP/OVLD

Validation Time: 15min **Time Critical Time:** N/A

Candidate: _____

Name

SSN

- -

**Overall
Time**

Start:

Finish:

**Performance
Time (min):**

**Critical
Time**

Start:

Finish:

Performance Rating:

circle one

SAT

UNSAT

Examiner:

Print Name

Signature

Date

COMMENTS

Step 2 critical because maximize Circ Water flow, prevent loss of condenser vacuum

Step 10 critical because criteria is met to trip the reactor.

SIMULATOR OPERATOR INSTRUCTIONS:

1. Reset to IC – 613 (From IC-4)
2. Verify “A” and “B” Circulating Water Pumps are running and “C” CW Pump is available
3. SCN file 006_ILC_14_NRC_CR_JPM_H
4. Freeze simulator.
5. Place simulator in run when directed by the examiner.

Tools/Equipment/Procedures Needed:

Ensure enough copies of AOP-012 are available for the Examiner. The Examiner will provide a copy of the procedure once the Operator has selected the correct procedure.

READ TO OPERATOR**TASK TO BE PERFORMED IN SIMULATOR:**

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 facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

OPERATOR INFORMATION:

Inform the Operator there are NO time critical steps in this JPM.

INITIAL CONDITIONS:

The Plant is at 50% power

You are the Balance of Plant Operator

INITIATING CUES:

The CRS directs you to respond to events as they occur.

START TIME: _____

| | |
|---|--|
| <p><u>STEP 1:</u> Recognize/report "A" CW Pump tripped and informs CRS AOP-012 entry required, carries out AOP-012 Immediate Action Steps from memory (AOP-012 step 1)</p> <p><u>STANDARD:</u> Report "A" CW Pump tripped and enters AOP-012 checks "A" Circ Water Pump tripped, verifies tripped Circ Water Pump Discharge Valve (V6-50A) CLOSED OR CLOSING</p> <p>EXAMINER'S CUE: AS CRS -> ACKNOWLEDGE OPERATOR'S REPORT AND WHEN THE IMMEDIATE ACTION STEPS ARE COMPLETED PROVIDE A COPY OF AOP-012</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> After the Operator assumes the shift, insert malfunction.</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 2:</u> Start any available Circulating Water Pump (AOP-012 step 2)</p> <p><u>STANDARD:</u> Verifies the "C" Circ Water pump is available to start and starts the "C" Circ Water pump by taking the switch for V6-50C to OPEN.</p> <p>EXAMINER'S CUE: NONE</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|-------------------------------------|
| <p><u>STEP 3:</u> Make PA announcement for procedure entry (AOP-012 step 3)</p> <p><u>STANDARD:</u> Makes PA announcement for AOP-012 entry</p> <p>EXAMINER'S CUE: NONE</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 4:</u> Check Liquid Waste Batch Release IN PROGRESS (AOP-012 step 4)</p> <p><u>STANDARD:</u> Determines from initial conditions a Liquid Waste release is NOT in progress. RNO to step 7</p> <p>EXAMINER'S CUE: NONE</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|--|-----------------------------------|
| <p><u>STEP 5:</u> Check condenser status – VACUUM PREVIOUSLY ESTABLISHED (AOP-012 step 7)</p> <p><u>STANDARD:</u> Determines vacuum has been previously established</p> <p>EXAMINER’S CUE: NONE</p> <p>EXAMINER’S NOTE: PLANT IS AT 50% POWER</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 6:</u> Check status of the tripped Circ Water Pump Discharge Valve (V6-50A) COMPLETED CLOSING (AOP-012 step 8)</p> <p><u>STANDARD:</u> Checks V6-50A fully closed</p> <p>EXAMINER’S CUE: NONE</p> <p>EXAMINER’S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|-------------------------------------|
| <p><u>STEP 7:</u> Check Plant Conditions – IN MODES 1 OR 2 (AOP-012 step 9)</p> <p><u>STANDARD:</u> Checks Plant in MODE 1</p> <p>EXAMINER’S CUE: NONE</p> <p>EXAMINER’S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |
| <p><u>STEP 8:</u> Check condenser back pressure on PI-1312 and PI-1313 – Approaches restricted region of attachment 3, Condenser Backpressure Limit Curve (AOP-012 step 10)</p> <p><u>STANDARD:</u> Checks condenser back pressure on PI-1312 and PI-1313, determines backpressure is approaching the restricted region of attachment 3.</p> <p>EXAMINER’S CUE: NONE</p> <p>EXAMINER’S NOTE: If candidate goes to section A for Partial Loss of Condenser Vacuum due to believing the degrading vacuum is due to air in-leakage verses CW Pump C shaft shear the section will perform the same steps as step 9 and 10.</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>_____ SAT</p> <p>_____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 9:</u> Check reactor trip block P-7 status light - illuminated: (NO) (AOP-012 step 11)</p> <p><u>STANDARD:</u> Determines P-7 status light is not illuminated. Go to step 11 RNO</p> <p>EXAMINER'S CUE: NONE</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 10:</u> Check reactor trip block P-7 status light - illuminated: (NO) (AOP-012 step 11)</p> <p>Perform the following:</p> <p>a. Trip the reactor</p> <p>b. Go to EOP-E-0, Reactor trip or safety injection.</p> <p><u>STANDARD:</u> Determines P-7 status light is not illuminated. Go to step 11 RNO</p> <p>EXAMINER'S CUE: NONE</p> <p>EXAMINER'S NOTE: NONE</p> <p><u>BOOTH OPERATOR CUE:</u> NONE</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

TIME STOP: _____

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

INITIAL CONDITIONS:

The Plant is at 50% power

You are the Balance of Plant Operator

INITIATING CUES:

The CRS directs you to respond to events as they occur.

JOB PERFORMANCE MEASURE

ILC-14 NRC JPM I

Rev. 0

TRIP THE REACTOR OUTSIDE OF THE CONTROL ROOM (AS OUTSIDE AUXILIARY OPERATOR)

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

JOB PERFORMANCE MEASURE**Task:** 01311100906 Respond to Nuclear Power Generation/ATWS IAW FRP-S.1**Alternate Path:**

No

JPM #:

ILC-14 NRC JPM I

K/A Rating (s):

| | |
|----------------|---------|
| | RO/SRO |
| EPE 029 EA1.11 | 3.9/4.1 |
| EPE 029 EA1.12 | 4.1/4.1 |

Task Standard:

Rod Drive MG Set breakers
manually opened from the 4KV
Room

Preferred Evaluation Location:Simulator: _____ In Plant: X**Preferred Evaluation Method:**Perform: _____ Simulate: X**References**

FRP-S.1 Response to Nuclear
Power Generation/ATWS

Validation Time: 8 min. **Time Critical Time:** 8**Candidate:** _____

Name

SSN

- -

Overall Time**Critical Time**

Start: _____

Start: _____

Finish: _____

Finish: _____

Performance Rating:

circle one

SAT

UNSAT

Performance**Time (min):**

Examiner:

Print

Signature

Date

COMMENTS

Step 2 Critical because misoperation of breaker will prevent Reactor Trip

Step 4 Critical because misoperation of breaker will prevent Reactor Trip

This JPM is time critical because tripping the reactor in a timely manner reduces need for
feedwater supply for heat removal

QUESTION DOCUMENTATION:

Question:

Response:

Tools/Equipment/Procedures Needed:

NONE

READ TO CANDIDATE**DIRECTIONS TO CANDIDATE:**

I will explain the initial conditions, and state the task to be performed. All in-plant steps, including any required communications, **shall be simulated** for this JPM. Under no circumstances are you to operate any plant equipment. 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 facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the handout sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate that there **ARE** time critical steps in this JPM.

INITIAL CONDITIONS:

You are the Outside Auxiliary Operator.

Plant is operating at 100% power.

An ATWS event is in progress.

INITIATING CUES:

The Control Room Supervisor (CRS) has dispatched you to 480V Busses 2B and 3 to trip the following breakers: ROD DRIVE MOTOR GENERATOR SET A and ROD DRIVE MOTOR GENERATOR SET B.

Time Critical

START TIME: _____ TIME CRITICAL START TIME: _____

| | |
|--|---|
| <p><u>STEP 1:</u> Candidate locates 480V Breaker 52/10B (ROD DRIVE MOTOR GENERATOR SET A) in the 4KV Room.</p> <p><u>STANDARD:</u> Candidate LOCATES 480V Breaker 52/10B (ROD DRIVE MOTOR GENERATOR SET A) in the 4KV Room.</p> <p>As Found: N/A</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: None.</p> <p><u>COMMENTS:</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |
| <p><u>STEP 2:</u> Candidate trips 480V Breaker 52/10B (ROD DRIVE MOTOR GENERATOR SET A).</p> <p><u>STANDARD:</u> Candidate TRIPS 480V Breaker 52/10B (ROD DRIVE MOTOR GENERATOR SET A) by DEPRESSING trip pushbutton in center of breaker cubicle door.</p> <p>As Found: Breaker is initially CLOSED.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: OPEN green flag has appeared in breaker Status Window.</p> <p><u>COMMENTS:</u></p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |

| | |
|--|---|
| <p><u>STEP 3:</u> Candidate locates 480V Breaker 52/14A (ROD DRIVE MOTOR GENERATOR SET B) in the 4KV Room.</p> <p><u>STANDARD:</u> Candidate LOCATES 480V Breaker 52/14A (ROD DRIVE MOTOR GENERATOR SET B) in the 4KV Room.</p> <p>As Found: N/A</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: None</p> <p><u>COMMENTS:</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |
| <p><u>STEP 4:</u> Candidate trips 480V Breaker 52/14A (ROD DRIVE MOTOR GENERATOR SET B).</p> <p><u>STANDARD:</u> Candidate TRIPS 480V Breaker 52/14A (ROD DRIVE MOTOR GENERATOR SET B) by DEPRESSING trip pushbutton in center of breaker cubicle door.</p> <p>As Found: Breaker is initially CLOSED.</p> <p>EXAMINER'S NOTE: The OPEN flag is silver on this breaker.</p> <p>EXAMINER'S CUE: OPEN flag has appeared in breaker Status Window.</p> <p><u>COMMENTS:</u></p> <p><u>END OF TASK</u></p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |

STOP TIME: _____ **TIME CRITICAL STOP TIME:** _____

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

INITIAL CONDITIONS:

You are the Outside Auxiliary Operator.

Plant is operating at 100% power.

An ATWS event is in progress.

INITIATING CUES:

The Control Room Supervisor (CRS) has dispatched you to 480V Busses 2B and 3 to trip the following breakers: ROD DRIVE MOTOR GENERATOR SET A and ROD DRIVE MOTOR GENERATOR SET B.

Time Critical JPM

LICENSE EXAMINATION JOB PERFORMANCE MEASURE

ILC-14 NRC JPM J Rev 0

Locally Establish AFW Flow to "A", "B", and "C" S/G's from
the SDAFW Pump and Control S/G Levels and Pressures IAW
EPP-1 and EPP-1 Attachment 1

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

LICENSE EXAMINATION JOB PERFORMANCE MEASURE

Task: 1000108205, Respond to a Loss of All AC Power IAW EPP-001

Alternate Path:

No

JPM #:

ILC-14 NRC JPM K

K/A **Rating (RO/SRO):**

056 AK3.02 4.4/4.7

054 AA2.06 4.0/4.3

061 A1.01 3.9/4.2

Task Standard:

AFW flow established to "A", "B", and "C" S/Gs by SDAFW pump, S/G levels established between 60% & 68% wide range and S/G pressures at approximately 985 psig.

Preferred Evaluation Location:

Simulator _____ In-Plant X

Preferred Evaluation Method:

Perform _____ Simulate X

References:

EPP-1

Validation Time: 20 min

Time Critical Time: N/A

Candidate: _____

Name

SSN

- -

**Overall
Time**

Start: _____

Finish: _____

**Critical
Time**

Start: _____

Finish: _____

Performance Rating:

circle one

SAT

UNSAT

Performance

Time (min): _____

N/A

Examiner:

Print Name

Signature

Date

COMMENTS

Step 1 critical because provides steam supply for SDAFW Pump operation

Step 2 critical because must provide manual control of SDAFW flow to the three S/G

Step 3 critical because isolated PORVs and MSIVs from IA during loss of power

Step 4 critical because provides backup nitrogen for PORV operations

Step 5 critical because ensures no loss of nitrogen for PORV operations

Step 6 critical because provides backup nitrogen for PORV operations

Step 7 critical because provides backup nitrogen for PORV operations

Tools/Equipment/Procedures Needed:

Ensure enough copies of EPP-1 are available for the Examiner. The Examiner will provide a copy of the procedure once the Operator selects the correct procedure and section. Obtain SM permission prior to opening DS Secondary Control Panel

READ TO OPERATOR**TASK TO BE PERFORMED IN-PLANT:**

I will explain the initial conditions, and state the task to be performed. All in-plant steps, including any required communications, **shall be simulated** for this JPM. Under no circumstances are you to operate any plant equipment. 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 facilitate the examination and better enable me to assess your level of understanding, verbalize your actions and observations while performing the JPM. To indicate that you have completed your assigned task return the Operator Cue Sheet I provided you.

OPERATOR INFORMATION:

Inform the Operator there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

You are the Fire Protection Auxiliary Operator

The Plant has experienced a loss of onsite and offsite power.

EPP-1, Loss of all AC Power has been implemented.

Wide range levels in all three SGs are 55%.

Steam Generator pressures are 1075 psig

AFW flow is less than 300 gpm.

All SDAFW Pump MOV breakers have been opened

INITIATING CUES:

The CRS directs you to Locally open ONE of the Steam Supply To SDAFW Pump valves: V1-8A, V1-8B, OR V1-8C STEAM SUPPLY TO SDAFW AND to perform EPP-1, Attachment 1, Local Control Of S/G Level And Pressure, to locally establish AFW flow to "A", "B", and "C" S/Gs and maintain cold leg temperature at approximately 545°F.

START TIME: _____

| | |
|---|--|
| <p><u>STEP 1:</u> Locally open ONE of the Steam Supply to SDAFW Pump valves V1-8A or V1-8B or V1-8C STEAM SUPPLY TO SDAFW.</p> <p><u>STANDARD:</u> Simulates opening the selected Steam Supply to SDAFW Valve by depressing de-clutch lever and rotating handwheel fully in the counterclockwise direction.</p> <p>EXAMINER’S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE OPENED -> INFORM THE OPERATOR THE VALVE HAS BEEN DE-CLUTCHED AND ROTATED FULLY COUNTER-CLOCKWISE AND THE STEM IS FULLY WITHDRAWN.</p> <p>EXAMINER’S NOTE: ALL THREE VALVES “AS FOUND” POSITION WOULD BE CLOSED (STEMS ARE FULLY INSERTED)</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
|---|--|

STEP 2: At the Secondary Control Panel area, maintain S/G WR levels between 60% and 68% by manually throttling the following valves: (EPP-1 Att 1 Step 1)

- V2-14A, STEAM DRIVEN FWP FDWTR DSCHG TO S/G A
- V2-14B, STEAM DRIVEN FWP FDWTR DSCHG TO S/G B
- V2-14C, STEAM DRIVEN FWP FDWTR DSCHG TO S/G C

STANDARD: Simulates operating all three SDAFW Pump Feedwater Discharge to S/G "A", "B" & "C Valves by depressing de-clutch lever and rotating handwheel counterclockwise to increase feedwater flow or clockwise to decrease feedwater flow to increase and maintain S/G WR Levels 62% to 68%.

EXAMINER'S CUE: AFTER LOCATING AND DESCRIBING/
SIMULATING HOW THE 3 VALVES WOULD BE
OPERATED -> INFORM THE OPERATOR THE
VALVE HAS BEEN DE-CLUTCHED AND
ROTATED AS APPROPRIATE TO THROTTLE
FEEDWATER FLOW AND ALL THREE S/G WR
LEVELS HAVE INCREASED TO AND ARE
STABLE AT 64%.

EXAMINER'S NOTE: ALL THREE VALVES "AS FOUND" POSITION
WOULD BE CLOSED (STEMS ARE FULLY
INSERTED)

COMMENTS:

**CRITICAL
STEP**

____ SAT

____ UNSAT

| | |
|---|--|
| <p><u>STEP 3:</u> Close IA-297, HDR STOP TO PORV STATION & MSIVS. (EPP-1 Att 1 Step 2)</p> <p><u>STANDARD:</u> Simulates closing IA-297</p> <p>EXAMINER'S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE CLOSED -> INFORM THE OPERATOR THE VALVE HAS BEEN ROTATED FULL CLOCKWISE (STEM IS FULLY INSERTED)</p> <p>EXAMINER'S NOTE: AS-FOUND POSITION IS OPEN (STEM FULLY WITHDRAWN). LOCATED AT THE SE CORNER OF PIPE JUNGLE BETWEEN THE FEED & STEAM LINES ELEVATION</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 4:</u> Open SDN-13, NITROGEN BACK UP SUPPLY. (EPP-1 Att 1 Step 3)</p> <p><u>STANDARD:</u> Simulates opening SDN-13.</p> <p>EXAMINER'S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE OPENED -> INFORM THE OPERATOR THE VALVE HAS BEEN ROTATED FULLY COUNTER- CLOCKWISE (STEM IS FULLY WITHDRAWN)</p> <p>EXAMINER'S NOTE: AS-FOUND POSITION IS CLOSED (STEM FULLY INSERTED). LOCATED AT THE STEAM DUMP NITROGEN ACCUMULATOR.</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|--|--|
| <p><u>STEP 5:</u> Unlock AND close SDN-29, STEAM LINE NITROGEN B/U TO TELL-TALE DRAIN. (EPP-1 Att 1 Step 4)</p> <p><u>STANDARD:</u> Simulates unlocking and closing SDN-29</p> <p>EXAMINER'S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE UNLOCKED AND CLOSED -> INFORM THE OPERATOR THE VALVE IS UNLOCKED AND HAS BEEN ROTATED FULL CLOCKWISE (STEM IS FULLY INSERTED)</p> <p>EXAMINER'S NOTE: AS-FOUND POSITION IS LOCKED OPEN (STEM FULLY WITHDRAWN). LOCATED AT THE SE CORNER OF PIPE JUNGLE ON THE MEZZANINE DECK</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 6:</u> Unlock AND open SDN-28, NITROGEN BACKUP TO STEAM LINE PORVS. (EPP-1 Att 1 Step 5)</p> <p><u>STANDARD:</u> Simulates unlocking and opening SDN-28</p> <p>EXAMINER'S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE UNLOCKED AND OPENED -> INFORM THE OPERATOR THE VALVE IS UNLOCKED AND HAS BEEN ROTATED FULL COUNTER-CLOCKWISE (STEM IS FULLY WITHDRAWN)</p> <p>EXAMINER'S NOTE: AS-FOUND POSITION IS LOCKED CLOSED (STEM FULLY INSERTED). LOCATED AT THE SE CORNER OF PIPE JUNGLE ON THE MEZZANINE DECK</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |

| | |
|---|--|
| <p><u>STEP 7:</u> Unlock AND open IA-423, NITROGEN TO STEAM LINE PORVS. (EPP-1 Att 1 Step 6)</p> <p><u>STANDARD:</u> Simulates unlocking and opening IA-423</p> <p>EXAMINER’S CUE: AFTER LOCATING AND DESCRIBING/ SIMULATING HOW VALVE WOULD BE UNLOCKED AND OPENED -> INFORM THE OPERATOR THE VALVE IS UNLOCKED AND HAS BEEN ROTATED FULL COUNTER- CLOCKWISE (STEM IS FULLY WITHDRAWN)</p> <p>EXAMINER’S NOTE: AS-FOUND POSITION IS LOCKED CLOSED (STEM FULLY INSERTED). LOCATED AT THE SE CORNER OF PIPE JUNGLE ON THE MEZZANINE DECK</p> <p><u>COMMENTS:</u></p> | <p><u>CRITICAL STEP</u></p> <p>____ SAT</p> <p>____ UNSAT</p> |
| <p><u>STEP 8:</u> Notify the Control Room of the following: (EPP-1 Att 1 Step 7) a. S/G level is under control locally. b. The S/G PORV’s have N2 supplied for motive air.</p> <p><u>STANDARD:</u> Contacts Control Room and reports a. and b. above.</p> <p>EXAMINER’S CUE: WHEN CONTACTED AS CRS -> ACKNOWLEDGE REPORT AND INFORM THE OPERATOR YOU WILL HAVE ANOTHER OPERATOR CONTINUE ON IN ATTACHMENT 1</p> <p>EXAMINER’S NOTE: NONE</p> <p><u>COMMENTS:</u></p> | <p>____ SAT</p> <p>____ UNSAT</p> |

END OF TASK

TIME STOP: _____

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

INITIAL CONDITIONS:

You are the Fire Protection Auxiliary Operator

The Plant has experienced a loss of onsite and offsite power.

EPP-1, Loss of all AC Power has been implemented.

Wide range levels in all three SGs are 55%.

Steam Generator pressures are 1075 psig

AFW flow is less than 300 gpm.

All SDAFW Pump MOV breakers have been opened

INITIATING CUES:

The CRS directs you to Locally open ONE of the Steam Supply To SDAFW Pump valves: V1-8A, V1-8B, OR V1-8C STEAM SUPPLY TO SDAFW AND to perform EPP-1, Attachment 1, Local Control Of S/G Level And Pressure, to locally establish AFW flow to "A", "B", and "C" S/Gs and maintain cold leg temperature at approximately 545°F.

**AUXILIARY OPERATOR EXAMINATION
JOB PERFORMANCE MEASURE**

**ILC-14 NRC JPM K
Rev 0**

**LOCALLY ALIGN CONTAINMENT
ISOLATION VALVES FOLLOWING SI (EPP-7)**

Concurred By: _____ **Date:** _____
Operations

Approved By: _____ **Date:** _____
Superintendent/Supervisor - Training

JOB PERFORMANCE MEASURE

Task: 04118104705 Locally align containment isolation valves following SI

Alternate Path:
NO

JPM #:

ILC-14 NRC JPM K

K/A

EPE E02 EK3.3

EPE E02 EA1.1

Rating (RO/SRO)

3.9 / 3.9

4.0 / 3.9

Task Standard:

Specified valves are realigned IAW EPP-7, Attachment 2.

Preferred Evaluation Location

Simulator In-Plant **X**

Preferred Evaluation Method

Perform Simulate **X**

References:

EPP-7 Attachment 2, Realignment of Components following SI termination for IAO

Validation Time 15 min **Time Critical Time** N/A (N/A if not time critical)

Candidate: _____
Print Name

SSN: _____

Overall Time

Start _____

Finish _____

Critical Time

Start: N/A

Finish: N/A

Performance Rating: SAT UNSAT **Performance**
circle one **Time (min)**

Examiner: _____
Print

Signature

Date

COMMENTS

This JPM is based on a Continuous Use Procedure and is Sequence Critical.

| | |
|---------------|---|
| Step 1 | Critical because component operation required to perform this task. |
| Step 2 | Critical because component operation required to perform this task. |
| Step 3 | Critical because component operation required to perform this task. |
| Step 5 | Critical because component operation required to perform this task. |

Tools/Equipment/Procedures Needed:

EPP-7 Attachment 2, REALIGNMENT OF COMPONENTS FOLLOWING SI
TERMINATION FOR INSIDE AO

READ TO CANDIDATE

DIRECTIONS TO CANDIDATE:

I will explain the initial conditions, and state the task to be performed. All in-plant steps, including any required communications, **shall be simulated** for this JPM. Under no circumstances are you to operate any plant equipment. 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 Candidate Cue Sheet I provided you.

CANDIDATE INFORMATION:

Inform the candidate that there are **NO** time critical steps in this JPM.

INITIAL CONDITIONS:

Plant was initially at 100% power

Plant trip and SI occurred

EPP-7, SI Termination has been implemented

You are the Inside Auxiliary Operator

A prejob brief has been completed.

INITIATING CUES:

The CRS has directed you to align containment isolation valves IAW EPP-7, Attachment 2.

Provide candidate with copy of EPP-7 Attachment 2.

START TIME: _____

| | |
|---|---|
| <p><u>STEP 1:</u> At the Steam Generator Blowdown Panel, place the reset switch for the following valves to CV ISOL RESET and return to AUTO (EPP-7 Att 2 step 1)</p> <ul style="list-style-type: none">• FCV1933B• FCV1934B• FCV1935B <p><u>STANDARD:</u> Candidate locates and simulates resetting FCV-1933B, 1934B, and 1935B</p> <p><u>As Found:</u> FCV-1933B, 1934B, and 1935B green lights are illuminated.</p> <p>EXAMINER'S NOTE: None.</p> <p>EXAMINER'S CUE: After candidate simulates switch operation FCV1933B, 1934B, and 1935B red lights are illuminated.</p> <p><u>COMMENTS:</u></p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |
|---|---|

| | |
|--|---|
| <p><u>STEP 2:</u> At the WASTE DISPOSAL BORON RECYCLE PANEL, open the following valves: AUTO (EPP-7 Att 2 step 2)</p> <ul style="list-style-type: none"> • WD-1723, CONTAINMENT SUMP DISCHARGE VALVE • WD-1728, CONTAINMENT SUMP DISCHARGE VALVE • WD-1786, REACTOR COOLANT DRAIN TANK VENT VALVE • WD-1787, REACTOR COOLANT DRAIN TANK VENT VALVE • WD-1722, REACTOR COOLANT DRAIN TANK PUMP DISCHARGE • WD-1721, REACTOR COOLANT DRAIN TANK PUMP DISCHARGE <p><u>STANDARD:</u> Candidate locates and simulates opening the above valves by placing the control switch to open and observing the red indicating light illuminated.</p> <p><u>As Found:</u> Above listed valves are closed with green lights are illuminated.</p> <p>EXAMINER'S NOTE: None</p> <p>EXAMINER'S CUE: When the operator locates and simulates opening the each valve, inform him the red light is illuminated, and the green light extinguished.</p> <p><u>COMMENTS:</u></p> | <p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p> |
|--|---|

STEP 3: At the WASTE DISPOSAL BORON RECYCLE PANEL, perform the following: (EPP-7 Att 2 step 3)

- Reset RC-550, NITROGEN TO PRT Valve by momentarily placing the control switch in OPEN.
- Reset RC-516 AND RC-553, PRT TO GAS ANALYZER Valves by depressing red CV ISOL RESET pushbuttons.
- Reset WD-1789 AND WD-1794, RCDT TO GAS ANALYZER Valves by depressing red CV ISOL RESET pushbuttons.

STANDARD: Candidate locates and simulates opening RC-550 by placing the control switch to open and observing the red indicating light illuminated. RC-516 and RC-553 and WD-1789 and WD-1794 are reset by depressing CV ISOL RESET pushbuttons.

As Found: Above listed valves green indicating lights are illuminated.

EXAMINER'S NOTE: None.

EXAMINER'S CUE: RC-550 Red Indicating light will illuminate, remaining valves will have green indicating light remain illuminated.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

STEP 4: Notify Chemistry that the PRT and RCDT are available for sampling by the Gas Analyzer. (EPP-7 Att 2 step 4)

STANDARD: Chemistry is notified.

As Found: N/A.

EXAMINER'S NOTE: None.

EXAMINER'S CUE: When operator simulates calling Chemistry, respond and acknowledge that the PRT and RCDT can be sampled with the Gas Analyzer.

COMMENTS:

___ SAT

___ UNSAT

STEP 5: At the control panel near R-11/R-12 enclosure, open the following valves using the common switch: (EPP-7 Att 2 step 5)

- RMS-1, RADIATION MONITOR PUMP INLET
- RMS-2, RADIATION MONITOR PUMP INLET
- RMS-3, CONTAINMENT AIR SAMPLE OUTLET
- RMS-4, CONTAINMENT AIR SAMPLE OUTLET

Contact the Control Room to restart the R-11/R-12 vacuum Pump.

STANDARD: Above listed valves are opened.

As Found: Above listed valves have green indicating lights illuminated.

EXAMINER'S NOTE: None.

EXAMINER'S CUE: When the candidate locates and simulates turning the common switch to the OPEN position, tell him/her the red light for the valves are illuminated and the green light extinguished.

When the candidate simulates calling the CR, respond and acknowledge restarting the R-11/R-12 vacuum pump.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

| | |
|---|---------------------------------|
| <p><u>STEP 6:</u> Notify the Control Room that this attachment is complete. (EPP-7 Att 2 step 6)</p> <p><u>STANDARD:</u> Candidate notifies the Control Room that EPP-7, Attachment 2 is complete.</p> <p><u>As Found:</u> N/A</p> <p>EXAMINER’S NOTE: None.</p> <p>EXAMINER’S CUE: When the candidate simulates calling the CR, acknowledge that EPP-7, Att. 2 is complete.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p> | <p>___ SAT</p> <p>___ UNSAT</p> |
|---|---------------------------------|

STOP TIME: _____

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

INITIAL CONDITIONS:

Plant was initially at 100% power

Plant trip and SI occurred

EPP-7, SI Termination has been implemented

You are the Inside Auxiliary Operator

A prejob brief has been completed.

INITIATING CUES:

The CRS has directed you to align containment isolation valves IAW EPP-7, Attachment 2.