

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO NRC A1 LOI-12-2 TASK TITLE: Manually Calculate Core Thermal Power
APPL. TO JPM NUMBER

REV: _____ DATE: _____ NRC K/A SYSTEM NUMBER: 2.1.7 4.4/4.7

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

~~~~~

CANDIDATE NAME: \_\_\_\_\_ LOGIN ID: \_\_\_\_\_

JPM Completion      Performed

Location:              Classroom

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION:    ☐ Satisfactory    ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____

PROGRAM ADMINISTER

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

RO APPL. TO	NRC A1 LOI-12-2 JPM NUMBER	TASK TITLE: Manually Calculate Core Thermal Power
----------------	-------------------------------	---

Current Update: _____ By: _____
Date Int

Outstanding Items

<input type="checkbox"/>	Technical Review	<input type="checkbox"/>	Additional Information
<input type="checkbox"/>	Questions and Answers	<input type="checkbox"/>	Validation
<input type="checkbox"/>	Procedural Change Required	<input checked="" type="checkbox"/>	None

Comments:

Current Update _____ Date _____ By: _____ Int _____

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A1 LOI-12-2
JPM NUMBER

TASK TITLE: Manually Calculate Core Thermal Power

I. SAFETY CONSIDERATIONS

- A. None

II. REFERENCES

- A. RAP-7.3.03, Core Thermal Power Evaluation

III. TOOLS AND EQUIPMENT

- A. Calculator
B. Steam Tables

IV. SET UP REQUIREMENTS

- A. Provide a copy of RAP-7.3.03 Attachment 1 with the following values filled in for steps 1-15:

Step #	Value	Step #	Value	Step #	Value
1	502	6	0.85	11	625
2	420	7	47	12	3.95
3	159	8	1026	13	4.00
4	155	9	59	14	392 / 392
5	0.85	10		15	391.9 / 391.9

V. EVALUATOR NOTES

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

- A. A plant startup is in progress.
B. Verification of Core Thermal Power is required.
C. Data has been recorded by another operator for RAP-7.3.03, Core Thermal Power Evaluation, Attachment 1 Items 1-15.
D. EPIC computer points are not available.
E. Items 14 and 15 were obtained from 02TT-168A/C and B/D on Attachment 3.

SRO/RO NRC A1 LOI-12-2

TASK TITLE: Manually Calculate Core Thermal Power

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Calculate Core Thermal Power manually per section 9.2 of RAP-7.3.03, Core Thermal Power Evaluation."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Calculates Feedwater correction factors.	Records the following on RAP-7.3.03 Attachment 1: Item 16: 392 Item 17: 391.9 Item 18: -28 Item 19: -28.1 Item 20: 1.01031 (1 – 1.02) Item 21: 1.01034 (1 – 1.02)	SAT / UNSAT
2.	Calculates Feedwater compensated flows.	Records the following on RAP-7.3.03 Attachment 1: Item 22: 3.99 (3.95 – 4.05) Item 23: 4.04 (3.99 – 4.09)	SAT / UNSAT
3.	Determines enthalpy values.	Records the following on RAP-7.3.03 Attachment 1: Item 24: 1191.56 (1190.6 – 1192.6) Item 25: 645.06 (640.45 – 650.04) Item 26: 366.47 (364.31 – 369.7) Item 27: 366.47 (364.31 – 369.7) Item 28: 490.27 (487.89 – 493.84) Item 29: 396.89 (394.15 – 399.64) Item 30: 63.046 (60.55 – 65.54)	SAT / UNSAT

TASK TITLE: Manually Calculate Core Thermal Power

	STEP	STANDARD	EVALUATION / COMMENT
4.	Calculates Feedwater flow, Feedwater enthalpy, and Steam enthalpy.	Records the following on RAP-7.3.03 Attachment 1: Item 31: 8.032 (7.94 – 8.14) Item 32: 366.4 (364.3 – 369.7) Item 33: 1191.56 (1190.6 – 1192.6)	SAT / UNSAT
*5.	Calculates Q to Feedwater.	Records the following on RAP-7.3.03 Attachment 1: Item 34: 1941.9 (1909.7 – 1975.5)	CRITICAL STEP SAT / UNSAT
6.	Calculates CRD flow.	Records the following on RAP-7.3.03 Attachment 1: Item 35: 0.0369 (0.03-0.04)	SAT / UNSAT
*7.	Calculates Q to CRD.	Records the following on RAP-7.3.03 Attachment 1: Item 36: 12.19 (9.8 – 13.3)	CRITICAL STEP SAT / UNSAT
8.	Calculates RWCU flow and enthalpy change.	Records the following on RAP-7.3.03 Attachment 1: Item 37: 0.156 (0.15 – 0.16) Item 38: 93.38 (88.2 – 99.7)	SAT / UNSAT
*9.	Calculates Q to RWCU.	Records the following on RAP-7.3.03 Attachment 1: Item 39: 4.28 (3.8 – 4.7)	CRITICAL STEP SAT / UNSAT
*10.	Calculates QPUMP.	Records the following on RAP-7.3.03 Attachment 1: Item 41: 1.58 (1.57 – 1.59)	CRITICAL STEP SAT / UNSAT

TASK TITLE: Manually Calculate Core Thermal Power

	STEP	STANDARD	EVALUATION / COMMENT
*11.	Calculates Core Thermal Power.	Records the following on RAP-7.3.03 Attachment 1: Item 42: 1957.9 (1922 – 1993.1) Item 43: 77.2 (75.7 – 78.6)	CRITICAL STEP SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

HANDOUT

- A plant startup is in progress.
- Verification of Core Thermal Power is required.
- Data has been recorded by another operator for RAP-7.3.03, Core Thermal Power Evaluation, Attachment 1 Items 1-15.
- EPIC computer points are not available.
- Items 14 and 15 were obtained from 02TT-168A/C and B/D on Attachment 3.

Calculate Core Thermal Power manually per section 9.2 of RAP-7.3.03, Core Thermal Power Evaluation.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A2 LOI-12-2 TASK TITLE: Perform HPCI Lineup Verification Per ST-4B
APPL. TO JPM NUMBER

REV: DATE: NRC K/A SYSTEM NUMBER: 2.1.31 4.6/4.3

JAF TASK NUMBER: JAF QUAL STANDARD NUMBER:

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: OPERATIONS REVIEW:

APPROVED:

~~~~~

CANDIDATE NAME:                      LOGIN ID:                     

JPM Completion                      Performed

Location:                      Simulator

DATE PERFORMED:                      TIME TO COMPLETE:                      Minutes

PERFORMANCE EVALUATION:                      ☐ Satisfactory                      ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

SIGNATURE/PRINTED

CANDIDATE REVIEW:

SIGNATURE

REVIEWED BY: DOC. COMPLETE:

PROGRAM ADMINISTER

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

RO APPL. TO	NRC A2 LOI-12-2 JPM NUMBER	TASK TITLE: Perform HPCI Lineup Verification Per ST-4B
----------------	-------------------------------	--

Current Update: _____ By: _____
Date Int

Outstanding Items

<input type="checkbox"/>	Technical Review	<input type="checkbox"/>	Additional Information
<input type="checkbox"/>	Questions and Answers	<input type="checkbox"/>	Validation
<input type="checkbox"/>	Procedural Change Required	<input checked="" type="checkbox"/>	None

Comments:

Current Update _____ Date _____ By: _____ Int _____

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

RO
APPL. TO

NRC A2 LOI-12-2
JPM NUMBER

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-4B, HPCI Monthly Operability Test

III. TOOLS AND EQUIPMENT

C. None

IV. SET UP REQUIREMENTS

- B. Provide a copy of ST-4B completed up to step 8.2.
- C. Reset the simulator to an IC (IC-152) with HPCI in a normal standby lineup, except for the following:
 - a. Set HPCI FLOW CNTRL setpoint between 3800-3900 gpm on panel 09-3.
 - b. Close INBD STM SUPP VLV 23MOV-15 on panel 09-3.
 - c. Close COND PMP DISCH TO RADW 23AOV-39 on panel 09-4.
 - d. Close STM LINE DRN TO RADW 23AOV-42 on panel 09-4.

V. EVALUATOR NOTES

- D. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- E. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- F. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.
- G. Should Candidate inform CRS that ST cannot be continued due to the out of position valve or out of spec readings, etc..., inform Candidate the deviation has been noted and for them to continue with the ST.

VI. TASK CONDITIONS

- F. ST-4B, HPCI Monthly Operability Test, is in progress.
- G. Other operators have completed ST-4B thru Section 8.1.

SRO/RO NRC A2 LOI-12-2

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Complete ST-4B Section 8.2, HPCI Valve Lineup."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Record HPCI FLOW CNTRL output at panel 09-3.	Records HPCI FLOW CNTRL output as greater than or equal to 100%.	SAT / UNSAT
2.	Verify the following lineup at panel 09-3: D. HPCI FLOW CNTRL setpoint - 4300 gpm E. HPCI FLOW CNTRL - AUTO F. TEST SPEED ADJUST - Full counterclockwise G. TURB GOV VLV 23HOV-2 - Closed H. TURB STOP VLV 23HOV-1 - Closed I. TURB TEST 23A-S23 - NORMAL J. TEST PWR 23A-S24 - OFF K. OUTBD STM SUPP VLV 23MOV-16 - Closed L. TURB STM SUPP VLV 23MOV-14 - Closed	Verifies the following lineup at panel 09-3 and documents in ST-4B: M. HPCI FLOW CNTRL setpoint – 3800 – 3900 gpm N. HPCI FLOW CNTRL - AUTO O. TEST SPEED ADJUST - Full counterclockwise P. TURB GOV VLV 23HOV-2 - Closed Q. TURB STOP VLV 23HOV-1 - Closed R. TURB TEST 23A-S23 - NORMAL S. TEST PWR 23A-S24 - OFF T. OUTBD STM SUPP VLV 23MOV-16 - Closed U. TURB STM SUPP VLV 23MOV-14 - Closed EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.	SAT / UNSAT

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
2. (cont.)	<p>Verify the following lineup at panel 09-3 (cont.):</p> <p>V. HPCI & RCIC TEST VLV TO CST 23MOV-24 - Closed</p> <p>W. MIN FLOW VLV 23MOV-25 - Closed</p> <p>X. INBD TORUS SUCTION VLV 23MOV-58 - Closed</p> <p>Y. TEST VLV TO CST 23MOV-21 - Closed</p> <p>Z. STM LINE DRN TRAP BYPASS VLV 23AOV-53 - AUTO</p> <p>AA. TURB EXH COND DRN VLV 23AOV-54 - AUTO</p> <p>BB. INBD STM SUPP VLV 23MOV-15 - Open</p> <p>CC. OUTBD TORUS SUCTION VLV 23MOV-57 - Closed</p> <p>DD. PMP DISCH VLV 23MOV-20 - Open</p> <p>EE. STM LINE WARMING ISOL VLV 23MOV-60 - Open</p> <p>FF. CST SUCTION VLV 23MOV-17 - Open</p> <p>GG. INJ VLV 23MOV-19 - Closed</p>	<p>Verifies the following lineup at panel 09-3 and documents in ST-4B (cont.):</p> <p>HH. HPCI & RCIC TEST VLV TO CST 23MOV-24 - Closed</p> <p>II. MIN FLOW VLV 23MOV-25 - Closed</p> <p>JJ. INBD TORUS SUCTION VLV 23MOV-58 - Closed</p> <p>KK. TEST VLV TO CST 23MOV-21 - Closed</p> <p>LL. STM LINE DRN TRAP BYPASS VLV 23AOV-53 - AUTO</p> <p>MM. TURB EXH COND DRN VLV 23AOV-54 - AUTO</p> <p>NN. INBD STM SUPP VLV 23MOV-15 - Closed</p> <p>OO. OUTBD TORUS SUCTION VLV 23MOV-57 - Closed</p> <p>PP. PMP DISCH VLV 23MOV-20 - Open</p> <p>QQ. STM LINE WARMING ISOL VLV 23MOV-60 - Open</p> <p>RR. CST SUCTION VLV 23MOV-17 - Open</p> <p>SS. INJ VLV 23MOV-19 - Closed</p> <p>EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.</p>	SAT / UNSAT (cont.)

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
2. (cont.)	Verify the following lineup at panel 09-3 (cont.): TT. COND PMP DISCH TO RADW 23AOV-40 - AUTO UU. STM LINE DRN TO RADW 23AOV-43 - Open VV. HPCI EXH VAC BKR 23MOV- 59 - Open	Verifies the following lineup at panel 09-3 and documents in ST-4B (cont.): WW. COND PMP DISCH TO RADW 23AOV-40 - AUTO XX. STM LINE DRN TO RADW 23AOV-43 - Open YY. HPCI EXH VAC BKR 23MOV-59 - Open	SAT / UNSAT (cont.)
3.	Verify the following lineup at panel 09-4: • COND PMP DISCH TO RADW 23AOV-39 - Open • STM LINE DRN TO RADW 23AOV- 42 - Open	Verifies the following lineup at panel 09-4 and documents in ST-4B (cont.): • COND PMP DISCH TO RADW 23AOV-39 - Closed • STM LINE DRN TO RADW 23AOV-42 - Closed EVALUATOR NOTE: The bolded item above is out-of-spec. Should Candidate inform CRS that ST cannot be continued due to the out of spec value, inform Candidate the deviation has been noted, continue with the ST and the deviation will be corrected by another Operator.	SAT / UNSAT

SRO/RO NRC A2 LOI-12-2

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Determines HPCI FLOW CNTRL setpoint is low.	Determines HPCI FLOW CNTRL setpoint is low. EVALUATOR NOTE: This determination should be evidenced by a verbal report to the CRS or SM.	CRITICAL STEP SAT / UNSAT
*5.	Determines INBD STM SUPP VLV 23MOV-15 is out of position.	Determines INBD STM SUPP VLV 23MOV-15 is out of position. EVALUATOR NOTE: This determination should be evidenced by a verbal report to the CRS or SM.	CRITICAL STEP SAT / UNSAT
*6.	Determines COND PMP DISCH TO RADW 23AOV-39 is out of position.	Determines COND PMP DISCH TO RADW 23AOV-39 is out of position. EVALUATOR NOTE: This determination should be evidenced by a verbal report to the CRS or SM.	CRITICAL STEP SAT / UNSAT
*7.	Determines STM LINE DRN TO RADW 23AOV-42 is out of position.	Determines STM LINE DRN TO RADW 23AOV-42 is out of position. EVALUATOR NOTE: This determination should be evidenced by a verbal report to the CRS or SM.	CRITICAL STEP SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

SRO/RO NRC A2 LOI-12-2

TASK TITLE: Perform HPCI Lineup Verification Per ST-4B

HANDOUT

- **ST-4B, HPCI Monthly Operability Test, is in progress.**
- **Other operators have completed ST-4B thru Section 8.1.**

Complete ST-4B

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A3 LOI-12-2 TASK TITLE: Determine Tagout Boundary For RBCLC Pump
APPL. TO JPM NUMBER Work

REV: _____ DATE: _____ NRC K/A SYSTEM NUMBER: 2.2.13 4.1/4.3

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

~~~~~

CANDIDATE NAME: \_\_\_\_\_ LOGIN ID: \_\_\_\_\_

JPM Completion Performed

Location: Simulator

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____

PROGRAM ADMINISTER

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A3 LOI-12-2</u>	TASK TITLE:	Determine Tagout Boundary For RBCLC Pump
APPL. TO	JPM NUMBER		Work

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

- ☐ Additional Information
- ☐ Validation
- ☒ None

Comments:

Current Update _____
Date

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A3 LOI-12-2</u>	
APPL. TO	JPM NUMBER	TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

- A. EN-OP-102, Protective and Caution Tagging
- B. ESK-6AC
- C. FM-15A
- D. OP-40

III. TOOLS AND EQUIPMENT

ZZ. None

IV. SET UP REQUIREMENTS

- D. Ensure copies of the following references are available:
 - a. EN-OP-102
 - b. ESK-6AC
 - c. FM-15A
 - d. OP-40

V. EVALUATOR NOTES

- H. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- I. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- J. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

- H. Troubleshooting is required for Reactor Building Closed Loop Cooling Pump A.
- I. The troubleshooting activity will be intrusive to the pump motor and impeller casing.
- J. eSOMS is unavailable.

SRO/RO NRC A3 LOI-12-2

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Generate a tagout isolation boundary for RBCLC Pump A troubleshooting. Record the devices to be tagged and their required positions on the worksheet provided."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain required references.	Obtains and utilizes required references, which may include: e. EN-OP-102 f. FM-15A g. ESK-6AC h. OP-40 EVALUATOR NOTE: Component names and Required Position terminology may vary slightly from what is written below due to unavailability of eSOMS.	SAT / UNSAT
2.	Determine RBCLC Pump A control switch tagged position.	Identifies RBCLC Pump A control switch should be tagged in the pull-to-lock position.	SAT / UNSAT
*3.	Determine RBCLC Pump A breaker tagged position.	Identifies RBCLC Pump A breaker should be tagged in the racked out or removed position.	CRITICAL STEP SAT / UNSAT

TASK TITLE: Determine Tagout Boundary For RBCLC Pump Work

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Determines RBCLC Pump A discharge isolation valve tagged position.	Identifies RBCLC Pump A discharge isolation valve (15RBC-2A) should be tagged in the closed position.	CRITICAL STEP SAT / UNSAT
*5.	Determines RBCLC Pump A discharge isolation valve tagged position.	Identifies RBCLC Pump A suction isolation valve (15RBC-40A) should be tagged in the closed position.	CRITICAL STEP SAT / UNSAT
6.	Determines RBCLC Pump A venting path tagged position.	<p>Identifies one or more of the following paths for venting RBCLC Pump A casing:</p> <ul style="list-style-type: none"> • RBCLC Pump A Discharge Pressure Indicator Root Valve (15RBC-645) open with either the Test/Drain valve open or the Pressure Indicator removed/uninstalled. • RBCLC Pump A Suction Pressure Indicator Root Valve (15RBC-607) open with the Pressure Indicator removed/uninstalled. • RBCLC Pump A Casing Vent Valve open. 	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

HANDOUT

- **Troubleshooting is required for Reactor Building Closed Loop Cooling Pump A.**
- **The troubleshooting activity will be intrusive to the pump motor and impeller casing.**
- **eSOMS is unavailable.**

Generate a tagout isolation boundary for RBCLC Pump A troubleshooting. Record the components to be tagged and their required positions on the worksheet provided.

WORKSHEET

Component	Required Position

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO NRC A4 LOI-12-2 TASK TITLE: Conduct Emergency Announcement And
APPL. TO JPM NUMBER Protected Area Evacuation

REV: _____ DATE: _____ NRC K/A SYSTEM NUMBER: 2.4.43 3.2/3.8

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

~~~~~

CANDIDATE NAME: \_\_\_\_\_ LOGIN ID: \_\_\_\_\_

JPM Completion Performed

Location: Simulator

DATE PERFORMED: \_\_\_\_\_ TIME TO COMPLETE: \_\_\_\_\_ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____

SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____

PROGRAM ADMINISTER

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A4 LOI-12-2</u>	TASK TITLE:	Conduct Emergency Announcement And
APPL. TO	JPM NUMBER		Protected Area Evacuation

Current Update: _____
Date

By: _____
Int

Outstanding Items

- ☐ Technical Review
- ☐ Questions and Answers
- ☐ Procedural Change Required

- ☐ Additional Information
- ☐ Validation
- ☒ None

Comments:

Current Update _____
Date

By: _____
Int

Previous Revision Date:

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

<u>RO</u>	<u>NRC A4 LOI-12-2</u>		TASK TITLE:
APPL. TO	JPM NUMBER		Conduct Emergency Announcement And Protected Area Evacuation

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

- A. IAP-1, Emergency Plan Implementation Checklist
- B. EAP-10, Protected Area Evacuation
- C. OP-63, Intra-Plant Communications System

III. TOOLS AND EQUIPMENT

A. Simulator communications equipment (optional)

IV. SET UP REQUIREMENTS

E. None

V. EVALUATOR NOTES

- K. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- L. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- M. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

VI. TASK CONDITIONS

K. A Site Area Emergency has been declared due to high Drywell radiation.

SRO/RO NRC A4 LOI-12-2

TASK TITLE: Conduct Emergency Announcement And Protected Area Evacuation

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency with accountability per the OP-63 posted attachment twice."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-63 posted attachment.	Obtains a controlled copy of OP-63 posted attachment. EVALUATOR NOTE: The OP-63 posted attachment is kept at the SNO, SM, CRS desks and OP Binders. The candidate should locate and use one of these copies.	SAT / UNSAT
*2.	Depress appropriate alarm pushbutton: <ul style="list-style-type: none">• STA for station alarm	Depresses STA alarm pushbutton.	CRITICAL STEP SAT / UNSAT
*3.	WHEN alarm is to be terminated, perform one of the following: <ul style="list-style-type: none">a. Depress OFF pushbutton. OR <ul style="list-style-type: none">b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	CRITICAL STEP SAT / UNSAT

TASK TITLE: Conduct Emergency Announcement And Protected Area Evacuation

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Make announcement for Site Area Emergency with accountability.	Announces the following over site paging system: "Attention, Attention. A Site Area Emergency has been declared at JAF due to high Drywell radiation (or similar). Activate all facilities. All personnel in the Protected Area commence accountability using badge readers and sign-in sheets."	CRITICAL STEP SAT / UNSAT
5.	Repeat announcement for Site Area Emergency with accountability.	Announces the following over site paging system: "Attention, Attention. A Site Area Emergency has been declared at JAF due to high Drywell radiation (or similar). Activate all facilities. All personnel in the Protected Area commence accountability using badge readers and sign-in sheets."	SAT / UNSAT
6.	Ensure Station Alarm is secured.	If STA alarm was previously interrupted only by INSTR toggle switch, depresses OFF pushbutton. EVALUATOR CUE: Provide JPM Handout #2 and inform the candidate, "The Shift Manager directs you to make the announcement for a Protected Area evacuation with normal egress per the OP-63 posted attachment."	SAT / UNSAT / NA
*7.	Depress appropriate alarm pushbutton: • EVAC for evacuation alarm	Depresses EVAC alarm pushbutton.	CRITICAL STEP SAT / UNSAT

TASK TITLE: Conduct Emergency Announcement And Protected Area Evacuation

	STEP	STANDARD	EVALUATION / COMMENT
*8.	WHEN alarm is to be terminated, perform one of the following: a. Depress OFF pushbutton. OR b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	CRITICAL STEP SAT / UNSAT
*9.	Make announcement for Protected Area evacuation with normal egress.	Announces the following over site paging system: "Attention, Attention: all personnel. A high radiation level exists in the Drywell (or similar). All non-essential personnel evacuate the Protected Area and proceed to the Training building auditorium. All essential personnel inside the Protected Area fence proceed to your designated primary assembly area. Personnel outside the Protected Area fence proceed to the Training building auditorium."	CRITICAL STEP SAT / UNSAT

TASK TITLE: Conduct Emergency Announcement And Protected Area Evacuation

	STEP	STANDARD	EVALUATION / COMMENT
10.	Repeat announcement for Protected Area evacuation with normal egress.	Announces the following over site paging system: "Attention, Attention: all personnel. A high radiation level exists in the Drywell (or similar). All non-essential personnel evacuate the Protected Area and proceed to the Training building auditorium. All essential personnel inside the Protected Area fence proceed to your designated primary assembly area. Personnel outside the Protected Area fence proceed to the Training building auditorium."	SAT / UNSAT
11.	Ensure Evacuation Alarm is secured.	If EVAC alarm was previously interrupted only by INSTR toggle switch, depresses OFF pushbutton.	SAT / UNSAT / NA
EVALUATOR: Terminate the task at this point.			

HANDOUT

A Site Area Emergency has been declared due to high Drywell radiation.

The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency with accountability per the OP-63 posted attachment twice.

HANDOUT #2

The Shift Manager directs you to make the announcement for a Protected Area evacuation with normal egress per the OP-63 posted attachment.

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

S/RO	NRC P1 LOI-12-2	TASK TITLE:	<u>Restore H₂O₂ Monitors Following Isolation</u>
APPL. TO	JPM NUMBER		

REV: _____ DATE: _____ NRC K/A SYSTEM NUMBER: 223002 A2.09 3.6/3.7

JAF TASK NUMBER: _____ JAF QUAL STANDARD NUMBER: _____

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

CANDIDATE NAME: _____ LOGIN ID: _____

JPM Completion ☒ Simulated ☐ Performed
Location: ☒ Plant ☐ Simulator

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____

SIGNATURE/PRINTED

CANDIDATE REVIEW: _____
SIGNATURE

REVIEWED BY: _____ DOC. COMPLETE: _____
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

S/RO APPL. TO	NRC P1 LOI-12-2 JPM NUMBER	TASK TITLE: <u>Restore H₂O₂ Monitors Following Isolation</u>
------------------	-------------------------------	--

Current Update: _____ By: _____
Date Int

Outstanding Items

- | | |
|---|---|
| <input type="checkbox"/> Technical Review | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers | <input type="checkbox"/> Validation |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None |

Comments:

1.

Current Update: _____ Date _____ By: _____ Int. _____

Previous Revision Date:

b. **SAFETY CONSIDERATIONS**

- A. None

c. **REFERENCES**

- A. OP-37, Containment Atmosphere Dilution System.
- B. EP-2, Isolation/Interlock Overrides.

d. **TOOLS AND EQUIPMENT**

- A. None

e. **SET UP REQUIREMENTS**

- A. Obtain SM permission prior to performing this task.
- B. Obtain a controlled copy of EP-2 Isolation/Interlock Overrides.
- C. Obtain a controlled copy of OP-37, Reinitializing Hydrogen/Oxygen Monitor Panel.

f. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

g. **TASK CONDITIONS**

- A. A Primary Containment isolation has occurred due to High Drywell Pressure (2.7 psig).
- B. The cause of the isolation has been determined.
- C. EOP-4 directs restoration of H₂/O₂ monitors.

h. INITIATING CUE

Inform the candidate, "The CRS directs you to restore H₂O₂ monitors per Section 5.25 of EP-2 and then reinitialize 27PCX-101A per section D.2 of OP-37."

* - CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of EP-2, ISOLATION/INTERLOCK OVERRIDES.	Obtains a controlled copy of EP-2. EVALUATOR: Provide working copy of EP-2.	SAT / UNSAT
	NOTE: Steps 2 & 3 may be performed in any order or concurrently per EP-2		
*2.	Place EMERG MANUAL OVERRIDE SYSTEM A keylock switch in OVER/RI at panel 27MAP.	At Panel 27MAP, places EMERG MANUAL OVERRIDE SYSTEM A switch in OVER/RI. EVALUATOR CUE: Inform candidate keylock switch is in override.	CRITICAL STEP SAT / UNSAT
*3.	Place EMER MANUAL OVERRIDE SYSTEM B keylock switch in OVER/RI at panel 27MAP.	At Panel 27MAP, places EMERG MANUAL OVERRIDE SYSTEM b switch in OVER/RI. EVALUATOR CUE: Inform candidate keylock switch is in override.	CRITICAL STEP SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
4.	Reinitialize hydrogen/oxygen monitor panel per Section D of OP-37.	Exits EP-2 and enters OP-37. EVALUATOR: Provide working copy of OP-37.	SAT / UNSAT
5.	Ensure LOCAL POWER switch is in OFF.	Observes LOCAL power switch in OFF.	SAT / UNSAT
EVALUATOR: Inform the Candidate all valves referenced in Section D.2.2 are found with their green light on, red light off.			
*6.	<p>Ensure open one set of the following valve pairs:</p> <ul style="list-style-type: none"> SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E1 SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E2 	<p>EVALUATOR NOTE \ CUE: If Candidate asks which Sample Path to use: Inform Candidate to use “normal path” . (The normal path is the Supp Pool 27SOV-119E1/E2)</p> <p>EVALUATOR CUE: When the candidate moves the first control switch to open, state the red light is on, green light off. When the second valve (of the pair) control switch is placed to open, state the red light is off and the green light remains on.</p> <p>Attempts to open one of the following pairs of valve by placing control switches to OPEN:</p> <ul style="list-style-type: none"> SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E1 SAMPLE GAS SUPP POOL SAMP VALVE 27SOV-119E2 	<p>CRITICAL STEP SAT / UNSAT</p>

	STEP	STANDARD	EVALUATION / COMMENT
*7.	<p>Ensure open one set of the following valve pairs:</p> <ul style="list-style-type: none"> SAMPLE GAS DRYW MID SAMP VALVE 27SOV-120E1/E2 	<p>EVALUATOR CUE: If Candidate asks which Sample Path to use: inform Candidate to use “DW mid path” .</p> <p>EVALUATOR CUE: For each valve in the second pair, when the candidate indicates the control switch is moved to open, then inform the candidate that the red light came on the green light is off.</p> <p>Attempts to open a different pair of the following valves by placing control switches to OPEN:</p> <ul style="list-style-type: none"> SAMPLE GAS DRYW MID SAMP VALVE 27SOV-120E1 27SOV-120E2 	<p>CRITICAL STEP SAT / UNSAT</p>
*8.	<p>Ensure open the following valves at MAP:</p> <ul style="list-style-type: none"> SAMPLE GAS RETURN SAMP VALVE 27SOV-124E1 SAMPLE GAS RETURN SAMP VALVE 27SOV-124E2 	<p>Places the control switch to the OPEN position for:</p> <ul style="list-style-type: none"> SAMPLE GAS RETURN SAMP VALVE 27SOV-124E1 SAMPLE GAS RETURN SAMP VALVE 27SOV-124E2 <p>EVALUATOR CUE: For each valve, when the candidate indicates the control switch is moved to open inform the candidate that the red light is on, the green light is off.</p>	<p>CRITICAL STEP SAT / UNSAT</p>
9.	<p>Ensure PUMP switch is in RUN.</p>	<p>Observes PUMP switch in RUN.</p> <p>EVALUATOR CUE: If asked, inform the candidate it is in RUN.</p>	<p>SAT / UNSAT</p>

	STEP	STANDARD	EVALUATION / COMMENT
10.	Ensure POWER keylock switch is in ON.	Observes POWER keylock switch in ON. EVALUATOR CUE: If asked, inform the candidate the keylock switch is in ON.	SAT / UNSAT
*11.	Depress 6.	Depresses 6 on 27PCX-101A keypad. EVALUATOR CUE: When indicates 6 would be depressed, then inform the candidate "6 has been depressed and 'ENTER ACCESS CODE' appears on CRT screen".	CRITICAL STEP SAT / UNSAT
*12.	When "ENTER ACCESS CODE" appears on CRT screen, perform the following: a) Depress 8. b) Depress 2. c) Depress ENTER.	Depresses 8, then 2, and then Enter key on 27PCX-101A keypad. EVALUATOR CUE: When the candidate indicates 8, 2 and Enter keys would be depressed, then state the "monitor" display appears on CRT screen.	CRITICAL STEP SAT / UNSAT
*13.	WHEN monitor display appears on CRT screen, perform the following: a) Depress 1. b) Depress ESC.	Depresses 1 and then ESC key on 27PCX-101A keypad. EVALUATOR CUE: When the candidate states he/she would depress 1 then ESC, inform the candidate that the 27PCX-101 graphic display is now visible.	CRITICAL STEP SAT / UNSAT
14.	Verify the following on 27PCX-101A display: • SV-1 is open • SV-6 is open	Observes the following: • SV-1 open • SV-6 open • P1 running	SAT / UNSAT

STEP		STANDARD	EVALUATION / COMMENT
	<ul style="list-style-type: none">Flow indication for P1 (red light on)	EVALUATOR CUE: If asked, inform the candidate SV-1 and SV-6 indicate open and P1 red light is on.	
<u>EVALUATOR:</u> Terminate the task at this point.			

HANDOUT

- **A Primary Containment isolation has occurred due to High Drywell Pressure (2.7 psig).**
- **The cause of the isolation has been determined.**
- **EOP-4 directs restoration of H₂/O₂ monitors.**

The CRS directs you to override the High Drywell Pressure Isolation per Section 5.25 of EP-2 and then reinitialize 27PCX-101A per section D.2 of OP-37.

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

TASK TITLE: Cross-tie Fire Protection System To Inject To RHR Service Water

JPM NUMBER

NRC K/A SYSTEM NUMBER: 295031 EA1.08 3.8/3.9

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

APPLICANT NAME: _____ LOGIN ID: _____

JPM Completion	X	Simulated	<input checked="" type="checkbox"/>	Performed
Location:	X	Plant	<input type="checkbox"/>	Simulator

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO	NRC P2 LOI-12-2	TASK TITLE:	Cross-tie Fire Protection System To Inject To RHR Service Water
APPL. TO	JPM NUMBER		

i. **SAFETY CONSIDERATIONS**

- A. Comply with JAF Safety Standards and Requirements.

j. **REFERENCES**

- A. EP-8, Alternate Injection Systems

k. **TOOLS AND EQUIPMENT**

- A. Emergency cross connect hose located in the North Safety Pump Room.
- B. N1 key.

l. **SET UP REQUIREMENTS**

- A. Make copy of EP-8 as handout for applicant.

m. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

**ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE**

S/RO	NRC P2 LOI-12-2	TASK TITLE:	Cross-tie Fire Protection System To Inject To RHR
APPL. TO	JPM NUMBER		Service Water

n. **TASK CONDITIONS**

- A. To maintain RPV water level above 0", water level control must be augmented by using the lake as a source.
- B. The RHRSW pumps are unavailable.

O. INITIATING CUE

Inform the candidate, "The CRS directs you to align the Fire Protection System to RHR Service Water A per EP-8 Section 5.3."

*** - CRITICAL STEP**

	STEP	STANDARD	EVALUATION / COMMENT
1.	<p>Verify the following RHR pumps are stopped:</p> <ul style="list-style-type: none"> RHR PMP 10P-3A RHR PMP 10P-3C 	<p>Contacts control room to verify RHR pumps A and C are stopped.</p> <p>EVALUATOR CUE: RHR pumps A and C are stopped.</p>	SAT / UNSAT
*2.	<p>Remove caps from the following valves:</p> <ul style="list-style-type: none"> 10RHR-432 (RHRSW to fire protection cross-tie isol valve) 76FPS-720 (RHRSW/fire protection cross-tie isol valve) 	<p>Rotates caps counterclockwise and removes from:</p> <ul style="list-style-type: none"> 10RHR-432 (RHRSW to fire protection cross-tie isol valve) 76FPS-720 (RHRSW/fire protection cross-tie isol valve) <p>EVALUATOR CUE: Both pipe caps are removed.</p>	<p>CRITICAL STEP</p> <p>SAT / UNSAT</p>
*3.	<p>Connect hose (stored in cabinet 76CAB-1 on west wall of north emergency service water room, N1 Key) between the following valves:</p> <ul style="list-style-type: none"> 10RHR-432 76FPS-720 	<p>Connects hose between valves:</p> <ul style="list-style-type: none"> 10RHR-432 76FPS-720 <p>EVALUATOR CUE: The hose is connected between the indicated valves.</p> <p>NOTE: The candidate should locate the hose but not move it.</p>	<p>CRITICAL STEP</p> <p>SAT / UNSAT</p>

	STEP	STANDARD	EVALUATION / COMMENT
4.	Ensure closed RHRSW DISCH VLV FROM HX A 10MOV-89A.	Contacts control room to ensure closed RHRSW DISCH VLV FROM HX A 10MOV-89A. EVALUATOR CUE: 10MOV-89A is closed.	SAT / UNSAT
5.	Start one or more of the following pumps: <ul style="list-style-type: none"> ELEC FIRE PMP 76P-2 DIESEL FIRE PMP 76P-1 DIESEL FIRE PMP 76P-4 	Contacts the control room to start a Fire Pump. EVALUATOR CUE: Report that the Electric Fire Pump has been started.	SAT / UNSAT
*6.	Unlock and open the following valves: <ul style="list-style-type: none"> 10RHR-432 76FPS-720 	Unlocks, removes locking mechanism and rotates handwheels counterclockwise to open the following valves: <ul style="list-style-type: none"> 10RHR-432 76FPS-720 EVALUATOR CUE: The indicated valves are unlocked and open. Water is flowing thru hose.	CRITICAL STEP SAT / UNSAT
Terminate the task at this point.			

HANDOUT

- To maintain RPV water level above 0", water level control must be augmented by using the lake as a source.
- The RHRSW pumps are unavailable.

The CRS directs you to align the Fire Protection System to RHR Service Water A per EP-8

ENTERGY NUCLEAR NORTHEAST JOB PERFORMANCE MEASURE

TASK TITLE: RCIC Turbine Trip/Throttle Valve Reset With Tappet Failure

JPM NUMBER

NRC K/A SYSTEM NUMBER: 217000 A2.02 3.8/3.7

SUBMITTED: _____ OPERATIONS REVIEW: _____

~~~~~

APPLICANT NAME: \_\_\_\_\_ LOGIN ID: \_\_\_\_\_

|                |   |           |                                     |           |
|----------------|---|-----------|-------------------------------------|-----------|
| JPM Completion | X | Simulated | <input checked="" type="checkbox"/> | Performed |
| Location:      |   | Plant     | <input type="checkbox"/>            | Simulator |
|                | X |           |                                     |           |

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: \_\_\_\_\_  
SIGNATURE/PRINTED

**ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE**

|          |                 |             |                                             |
|----------|-----------------|-------------|---------------------------------------------|
| S/RO     | NRC P3 LOI-12-2 | TASK TITLE: | RCIC Turbine Trip/Throttle Valve Reset With |
| APPL. TO | JPM NUMBER      |             | Tappet Failure                              |

p. **SAFETY CONSIDERATIONS**

- A. Comply with JAF Safety Standards and Requirements.

q. **REFERENCES**

- A. OP-19, Reactor Core Isolation Cooling System

r. **TOOLS AND EQUIPMENT**

- A. None

s. **SET UP REQUIREMENTS**

- A. Make copy of OP-19 as handout for applicant.

t. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.



**ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE**

|          |                 |             |                                             |
|----------|-----------------|-------------|---------------------------------------------|
| S/RO     | NRC P3 LOI-12-2 | TASK TITLE: | RCIC Turbine Trip/Throttle Valve Reset With |
| APPL. TO | JPM NUMBER      |             | Tappet Failure                              |

- u. **TASK CONDITIONS**
- A. A Reactor scram has occurred.
  - B. The MSIVs are closed.
  - C. An inadvertent local manual trip of the RCIC turbine has occurred.

V. **INITIATING CUE**

Inform the candidate, "The CRS directs you to reset 13HOV-1 per OP-19 Section G.6."

**\* - CRITICAL STEP**

|     | STEP                                                                                                                                                                    | STANDARD                                                                                                                                                                    | EVALUATION / COMMENT                |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| *1. | Manually operate 13HOV-1 handwheel to closed position.                                                                                                                  | Rotates 13HOV-1 handwheel clockwise to closed position.<br><br><b>EVALUATOR CUE:</b> 13HOV-1 handwheel is in closed position.                                               | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 2.  | IF turbine trip was from overspeed or local manual, THEN perform the following:                                                                                         | Determines from task conditions that turbine trip was a local manual trip.                                                                                                  | SAT / UNSAT                         |
| *3. | Pull spring loaded emergency connecting rod against spring force, moving emergency head lever away from emergency tappet and tappet nut.                                | Pulls emergency connecting rod to move emergency head lever away from emergency tappet and tappet nut.<br><br><b>EVALUATOR CUE:</b> The emergency connecting rod has moved. | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 4.  | Verify emergency tappet and tappet nut moves downward into "reset" position, engaging head lever and holding emergency connecting rod in position under spring tension. | Observes emergency tappet and tappet nut position.<br><br><b>EVALUATOR CUE:</b> Emergency tappet and tappet nut did <b>NOT</b> move into the reset position.                | SAT / UNSAT                         |

|     | STEP                                                                                                                                                                                | STANDARD                                                                                                                                                        | EVALUATION / COMMENT                |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 5.  | IF emergency tappet and tappet nut did not move into the reset position per Step G.6.2b, THEN perform the following:                                                                | Recognizes that emergency tappet and tappet nut did not move into reset position and alternate steps are required.                                              | SAT / UNSAT                         |
| *6. | Lift up on RCIC manual trip lever while pulling spring loaded emergency connecting rod against spring force, moving emergency head lever away from emergency tappet and tappet nut. | Lifts up on RCIC manual trip level while pulling spring loaded emergency connecting rod to move emergency head lever away from emergency tappet and tappet nut. | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 7.  | Verify emergency tappet and tappet nut moves downward into "reset" position, engaging head lever and holding emergency connecting rod in position under spring tension.             | Observes emergency tappet and tappet nut position.<br><b>EVALUATOR CUE:</b> Emergency tappet and tappet nut <b><u>DID</u></b> move into the reset position.     | SAT / UNSAT                         |
| 8.  | Ensure trip hook engages latchup lever.                                                                                                                                             | Observes trip hook and latchup lever.<br><b>EVALUATOR CUE:</b> Trip hook has engages latchup lever.                                                             | SAT / UNSAT                         |
| *9. | Manually open 13HOV-1 to full open.                                                                                                                                                 | Rotates 13HOV-1 handwheel counterclockwise to full open position.<br><b>EVALUATOR CUE:</b> 13HOV-1 handwheel is in full open position.                          | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 10. | Manually close one-quarter                                                                                                                                                          | Rotates 13HOV-1 handwheel clockwise one-quarter turn.                                                                                                           | SAT / UNSAT                         |

|                                   | STEP                                                                  | STANDARD                                                                                                                                                                               | EVALUATION / COMMENT |
|-----------------------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
|                                   | turn 13HOV-1 handwheel to allow for thermal expansion.                | <b>EVALUATOR CUE:</b> 13HOV-1 handwheel is one-quarter turn closed.                                                                                                                    |                      |
| 11.                               | Verify annunciator 09-4-1-14 RCIC TRIP is clear.                      | Contacts control room to verify annunciator 09-4-1-14 is clear.<br><b>EVALUATOR CUE:</b> Annunciator 09-4-1-14, RCIC TRIP, is clear.                                                   | SAT / UNSAT          |
| 12.                               | Verify TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4. | Contacts control room to verify TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4.<br><b>EVALUATOR CUE:</b> TURB TRIP & THROTTLE VLV 13HOV-1 indicates open at panel 09-4. | SAT / UNSAT          |
| Terminate the task at this point. |                                                                       |                                                                                                                                                                                        |                      |

## **HANDOUT**

- **A Reactor scram has occurred.**
- **The MSIVs are closed.**
- **An inadvertent local manual trip of the RCIC turbine has occurred.**

**The CRS directs you to reset 13HOV-1 per OP-19 Section G.6.**

**ENTERGY - FITZPATRICK  
JOB PERFORMANCE MEASURE**

S/RO  
APPL. TO

NRC S1 LOI-12-2  
JPM NUMBER

TASK TITLE: EDG Load Run with Governor Failure (Alt Path)

REV: 0    DATE: 3/2012

NRC K/A SYSTEM NUMBER: 2640000 A4.04 3.7/3.7

JAF TASK NUMBER: \_\_\_\_\_ JAF QUAL STANDARD NUMBER: \_\_\_\_\_

ESTIMATED COMPLETION TIME: 18 Minutes

SUBMITTED: \_\_\_\_\_ OPERATION REVIEW: \_\_\_\_\_

APPROVED: \_\_\_\_\_

~~~~~

CANDIDATE NAME: _____

JPM Completion: () Simulated (x) Performed

Location: () Plant (x) Simulator

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes

PERFORMANCE EVALUATION: () Satisfactory () Unsatisfactory

~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: \_\_\_\_\_  
SIGNATURE/PRINTED

CANDIDATE REVIEW: \_\_\_\_\_  
SIGNATURE

REVIEWED BY: \_\_\_\_\_ DOC. COMPLETE: \_\_\_\_\_  
PROGRAM ADMINISTER

## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

|                          |                                      |                                                           |
|--------------------------|--------------------------------------|-----------------------------------------------------------|
| <u>S/R/O</u><br>APPL. TO | <u>NRC S1 LOI-12-2</u><br>JPM NUMBER | TASK TITLE: EDG Load Run with Governor Failure (Alt Path) |
|--------------------------|--------------------------------------|-----------------------------------------------------------|

Current Update: \_\_\_\_\_ Date \_\_\_\_\_ By: \_\_\_\_\_  
Int. \_\_\_\_\_

Outstanding Items:

☐ Technical Review
 ☐ Additional Information  
☐ Questions and Answers
 ☐ Validation  
☐ Procedural Change Required
 ☐ None

Comments:

Current Update: \_\_\_\_\_ Date \_\_\_\_\_ By: \_\_\_\_\_  
Int. \_\_\_\_\_

Previous Revision Dates:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO \_\_\_\_\_ NRC S1 LOI-12-2 TASK TITLE: EDG Load Run with Governor Failure (Alt  
APPL. TO \_\_\_\_\_ JPM NUMBER Path)

**I. SAFETY CONSIDERATIONS**

- A. None

**II. REFERENCES**

- A. ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST
- B. OP-22, DIESEL GENERATOR EMERGENCY POWER

**III. TOOLS AND EQUIPMENT**

- A. Synchronizing Switch

**IV. SET UP REQUIREMENTS**

- A. Initialize the simulator to IC 151.
- B. Obtain a controlled copy of ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST. Initial as complete Section 4.0, 5.0 and Step 8.1 through and including Step 8.7.
- C. Copies of EDG Demand Log for EDG B & D forms from OP-22, DIESEL GENERATOR EMERGENCY POWER.
- D. Trigger 1 = EDG 'B' Governor Switch to Raise.
- E. Event trigger 1 = dgpdgen(2)>900000.
- F. Trigger 2 = EDG 'B' KW meter = 3000.
- G. Event Trigger 2 = dgpdgen(2) >3,000,000. Command = dor zdi1c1edgb11

**V. EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, placekeeping and self checking.

**VI. TASK CONDITIONS**

- A. EDG B and D load testing is in progress with ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST complete through Step 8.7.



**\* - CRITICAL STEP**

**VII. INITIATING CUE**

Inform the candidate, "The CRS directs you to perform ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST, starting at Step 8.8 for EDGs B & D."

**NOTE:** All controls and indications located on panel 09-8 unless otherwise stated.

|    | STEP                                                                                                                                                                                    | STANDARD                                                        | EVALUATION / COMMENT |
|----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------|
| 1. | Obtain a controlled copy of procedure ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST                                                                                    | Obtains a controlled copy of ST-9BB                             | SAT / UNSAT          |
| 2. | Reviews the precautions                                                                                                                                                                 | Reviews the precautions, making note of any that are applicable | SAT / UNSAT          |
| 3. | Select the correct section to perform the task.                                                                                                                                         | Selects Section 8.8 of ST-9BB                                   | SAT / UNSAT          |
| 4. | Verify the following Annunciators are clear: <ul style="list-style-type: none"> <li>09-8-4-11 EDG B ENG TROUBLE OR SHUTDOWN</li> <li>09-8-4-14 EDG D ENG TROUBLE OR SHUTDOWN</li> </ul> | Verifies 09-8-4-11 and 09-8-4-14 alarms are clear               | SAT / UNSAT          |
| 5. | <b>IF</b> both of the following conditions exist:                                                                                                                                       | Request reading of outside air temperature on 17WR-             | SAT / UNSAT          |

|     | STEP                                                                                                                                                                                                                                                                                                                                               | STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EVALUATION / COMMENT                |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|     | <ul style="list-style-type: none"> <li>Outside ambient temperature is <b>GREATER THAN</b> 88 deg F on 17WR-101K, CHAN A, digital indication at panel 17EMRP.</li> </ul> <p>AND</p> <ul style="list-style-type: none"> <li>Screenwell intake temperature is <b>GREATER THAN</b> 78 deg F on EPIC-A-1503 or EPIC-A-1504</li> </ul> <p>THEN .....</p> | <p>101K, CHAN A, digital indication at panel 17EMRP.</p> <p><b>EVALUATOR:</b> When asked for outside air temperature, inform the candidate that it is 60 deg F.</p>                                                                                                                                                                                                                                                                                      |                                     |
| 6.  | <p>Station 3 operators with stopwatches to monitor/record times for:</p> <ul style="list-style-type: none"> <li>Frequency</li> <li>Voltage</li> <li>Steady State Voltage and Frequency</li> </ul>                                                                                                                                                  | <p>Request Operators with stopwatches to monitor/record:</p> <ul style="list-style-type: none"> <li>Frequency</li> <li>Voltage</li> <li>Steady State Voltage and Frequency</li> </ul> <p><b>EVALUATOR:</b> When requested, inform candidate that the 3 operators are briefed on responsibilities and are stationed with stop watches.</p> <p>Candidate may inform CRS to declare EDG B system inoperable. Inform Candidate, CRS acknowledges report.</p> | SAT / UNSAT                         |
| *7. | <p>Simultaneously place the EDG B &amp; D control switches to START and start all 3 stopwatches.</p>                                                                                                                                                                                                                                               | <p>Simultaneously places the EDG B &amp; D control switches in START.</p>                                                                                                                                                                                                                                                                                                                                                                                | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|      | STEP                                                                                                                                                       | STANDARD                                                                                                                                                                                                                                                                                    | EVALUATION / COMMENT                |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                            |                                                                                                                                                                                                                                                                                             |                                     |
| 8.   | Record stopwatch times for: <ul style="list-style-type: none"> <li>• Frequency</li> <li>• Voltage</li> <li>• Steady State Voltage and Frequency</li> </ul> | Requests for and records stopwatch times.<br><br><b>EVALUATOR:</b> When requested, inform candidate that the stopwatch times are: <ul style="list-style-type: none"> <li>• Frequency – 6 secs</li> <li>• Voltage – 6 secs</li> <li>• Steady State Voltage and Frequency – 7 secs</li> </ul> | SAT / UNSAT                         |
| 9.   | Record EDG B/D frequency and voltage.                                                                                                                      | For both B & D EDGs, records frequency and voltage.                                                                                                                                                                                                                                         | SAT / UNSAT                         |
| 10.  | Verify the following: <ul style="list-style-type: none"> <li>• EDG B &amp; D TIE BKR 10604 is closed</li> <li>• ESW pump 46P-2B is running</li> </ul>      | Verifies the following by observing the control switch red indicating light is on and the green light is off: <ul style="list-style-type: none"> <li>• EDG B &amp; D TIE BKR 10604 is closed</li> <li>• ESW pump 46P-2B is running</li> </ul>                                               | SAT / UNSAT                         |
| *11. | Trip tie Breaker 10604 and allow switch to spring return to AUTO position and record the time.                                                             | Places the control switch for Breaker 10604, EDG B & D TIE BKR, to TRIP, allow switch to spring return to AUTO                                                                                                                                                                              | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|      | STEP                                                                                                                                                                                                                                                                                      | STANDARD                                                                                                                                                                                           | EVALUATION / COMMENT                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                                                                                                                                                           | Records time the control switch for Breaker 10604, EDG B & D TIE BKR, is placed to TRIP                                                                                                            | SAT / UNSAT                         |
| 12.  | Record EDG B/D frequency                                                                                                                                                                                                                                                                  | For both B & D EDGs, records frequency.                                                                                                                                                            | SAT / UNSAT                         |
| 13.  | Verify EPIC-D-732 closed and open on alarm typer.                                                                                                                                                                                                                                         | Verifies EPIC-D-732 closed and open on alarm typer.                                                                                                                                                | SAT / UNSAT                         |
| *14. | Place EDG B and D governor mode switches in the droop position                                                                                                                                                                                                                            | Places the EDG GOV MODE toggle switches for EDGs B&D to DROOP                                                                                                                                      | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 15.  | IF an EDG functions improperly while paralleled with 10600 bus, THEN perform the following: <ul style="list-style-type: none"> <li>• Trip associated EDG load breaker.</li> <li>• Shut down malfunctioning EDG per Section G of OP-22 (Single EDG Shutdown from Control Room).</li> </ul> | <p>Reads the actions for an improperly functioning EDG.</p> <p><b>EVALUATOR NOTE:</b> This step is to be used by the operator to trip the associated load breaker towards the end of this JPM.</p> | SAT / UNSAT                         |
| 16.  | Steps 8.27 and 8.28 may be performed in any order per SM direction.                                                                                                                                                                                                                       | <p>Request direction from SM.</p> <p><b>EVALUATOR CUE:</b> Inform the candidate that EDG B is to be paralleled first.</p>                                                                          | SAT / UNSAT                         |

|      | STEP                                                                                                                                                                                        | STANDARD                                                                                | EVALUATION / COMMENT                |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                                                             |                                                                                         |                                     |
| *17. | Place EDG B LOAD BKR SYNCH SW in ON                                                                                                                                                         | Places the EDG B LOAD BKR SYNCH SW to ON                                                | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *18. | Adjust EDG B VOLT REG to match INCOMING and RUNNING voltages                                                                                                                                | Matches INCOMING (EDG) and RUNNING (bus 10600) voltages with EDG B VOLT REG adjustments | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *19. | Adjust EDG B GOV to rotate synchroscope slowly in the FAST direction (clockwise)                                                                                                            | Adjusts EDG B GOV to rotate synchroscope slowly in fast direction                       | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *20. | When EDG B and the 10600 BUS are in phase (synchroscope at 12 o'clock) close EDG B LOAD BKR 10602                                                                                           | Places the control switch 10602, EDG B LOAD BKR, to CLOSE when synchroscope is at 12:00 | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *21. | Adjust EDG B GOV to raise EDG B load to between 100 and 300 Kw                                                                                                                              | Places the EDG B GOV switch to RAISE and loads EDG B to between 100 and 300 kW          | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 22.  | Place EDG B LOAD BKR SYNCH SW in OFF and remove synch switch handle.                                                                                                                        | Places the EDG B LOAD BKR SYNCH SW to OFF and removes synch switch handle.              | SAT / UNSAT                         |
|      | <b>NOTE:</b> When EDG B load reaches approximately 900 KW, the governor will malfunction and run to approximately 3050 KW. Further adjustments of the EDG B GOV switch will have no effect. |                                                                                         |                                     |

|                                             | STEP                                                                                                                             | STANDARD                                                                                                                                                                                                  | EVALUATION / COMMENT                |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|                                             |                                                                                                                                  |                                                                                                                                                                                                           |                                     |
| 23.                                         | Adjust EDG B GOV to raise EDG B load to $\geq 2340$ KW and $\leq 2600$ kW over 3 to 5 minutes in approximately 800 kW increments | Adjusts EDG B GOV to raise EDG B load to $\geq 2340$ KW and $\geq 2600$ kW over 3 to 5 minutes in 800 kW increments.                                                                                      | SAT / UNSAT                         |
| *24.                                        | Recognize EDG B Governor malfunction.                                                                                            | Trips EDG B load breaker by either: <ul style="list-style-type: none"> <li>• Placing the control switch for 10602, EDG B LOAD BKR, to TRIP</li> <li>• Placing the EDG B control switch in STOP</li> </ul> | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| EVALUATOR: Terminate the task at this point |                                                                                                                                  |                                                                                                                                                                                                           |                                     |

## **HANDOUT**

EDG B and D load testing is in progress with ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST complete through Step 8.7.

The CRS directs you to perform ST-9BB, EDG B & D FULL LOAD TEST AND ESW PUMP OPERABILITY TEST, starting at Steps 8.8 for EDG B & D.

ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                                                      |                                                                                                |
|------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| S/RO<br>APPL. TO                                     | NRC S2 LOI-12-2<br>JPM NUMBER                                        | TASK TITLE: Switching Relay Room Supply and Exhaust Fans                                       |
| REV: 0                                               | DATE: 3/2012                                                         | NRC K/A SYSTEM NUMBER: 290003 A4.02 2.8/2.8                                                    |
| JAF TASK NUMBER: _____                               |                                                                      | JAF QUAL STANDARD NUMBER: OP-56                                                                |
| ESTIMATED COMPLETION TIME: 15 Minutes                |                                                                      |                                                                                                |
| SUBMITTED: _____                                     |                                                                      | OPERATIONS REVIEW: _____                                                                       |
| APPROVED: _____                                      |                                                                      |                                                                                                |
| ~~~~~                                                |                                                                      |                                                                                                |
| CANDIDATE NAME: _____                                |                                                                      |                                                                                                |
| JPM Completion<br>Location:                          | <input type="checkbox"/> Simulated<br><input type="checkbox"/> Plant | <input checked="" type="checkbox"/> Performed<br><input checked="" type="checkbox"/> Simulator |
| DATE PERFORMED: _____                                | TIME TO COMPLETE: _____ Minutes                                      |                                                                                                |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory                                | <input type="checkbox"/> Unsatisfactory                                                        |
| ~~~~~                                                |                                                                      |                                                                                                |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                                                      |                                                                                                |
|                                                      |                                                                      |                                                                                                |
| EVALUATOR: _____                                     |                                                                      |                                                                                                |
| SIGNATURE/PRINTED                                    |                                                                      |                                                                                                |
| CANDIDATE REVIEW: _____                              |                                                                      |                                                                                                |
| SIGNATURE                                            |                                                                      |                                                                                                |
| REVIEWED BY: _____                                   | DOC. COMPLETE: _____                                                 |                                                                                                |
| PROGRAM ADMINISTER                                   |                                                                      |                                                                                                |



## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

|                         |                                      |                                                          |
|-------------------------|--------------------------------------|----------------------------------------------------------|
| <u>S/RO</u><br>APPL. TO | <u>NRC S2 LOI-12-2</u><br>JPM NUMBER | TASK TITLE: Switching Relay Room Supply and Exhaust Fans |
|-------------------------|--------------------------------------|----------------------------------------------------------|

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int

## Outstanding Items

- |                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int.

Previous Revision Date:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

|             |                        |             |                                              |
|-------------|------------------------|-------------|----------------------------------------------|
| <u>S/RO</u> | <u>NRC S2 LOI-12-2</u> | TASK TITLE: | Switching Relay Room Supply and Exhaust Fans |
| APPL. TO    | JPM NUMBER             |             |                                              |

w. **SAFETY CONSIDERATIONS**

- A. None

x. **REFERENCES**

- A. OP-56, Relay Room Ventilation and Cooling

y. **TOOLS AND EQUIPMENT**

- A. None

z. **SET UP REQUIREMENTS**

- A. Initialize the simulator to IC-153.
- B. Control Room Ventilation Train 'A' in service.
- C. Relay Room Ventilation Train 'B' in service.

aa. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

bb. **TASK CONDITIONS**

- A. Relay Room Ventilation train 'B' was placed in service last Shift to support maintenance on train 'A'.
- B. Relay Room Ventilation train 'A' is now ready to be placed back in service.

**\* - CRITICAL STEP**

**cc. INITIATING CUE**

Inform the candidate, "The CRS directs you to switch Relay Room supply and exhaust fans to the 'A' train per OP-56 Relay Room Ventilation and Cooling."

**NOTE:** All actions performed at Panel 09-75

|    | STEP                                                                                                                                                                                | STANDARD                                                                                                            | EVALUATION / COMMENT |
|----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------|
| 1. | Obtain a controlled copy of OP-56 Relay Room Ventilation and Cooling.                                                                                                               | Obtains a controlled copy of OP-56.<br>Reviews Notes.                                                               | SAT / UNSAT          |
| 2. | Select the correct section to perform the task.                                                                                                                                     | Selects Section G.5 of OP-56, Switching Relay Room Supply and Exhaust Fans.                                         | SAT / UNSAT          |
| 3. | Place Relay Room ventilation in purge per Subsection G.3.                                                                                                                           | Selects Subsection G.3.                                                                                             | SAT / UNSAT          |
| 4. | Place the following Relay Room Vent control switches in <b>PURGE</b> : <ul style="list-style-type: none"> <li>Isol &amp; Purge Cntrl A</li> <li>Isol &amp; Purge Cntrl B</li> </ul> | Places <b>Isol &amp; Purge Cntrl A</b> and <b>Isol &amp; Purge Cntrl B</b> switches in <b>Purge</b> position.       | SAT / UNSAT          |
| 5. | Verify closed the following dampers: <ul style="list-style-type: none"> <li>Recirc A 70MOD-104A</li> <li>Recirc B 70MOD-104B</li> </ul>                                             | <b>Verifies closed</b> Recirc A <b>70MOD-104A</b> and Recirc B <b>70MOD-104B</b> .<br>Green light on, Red light off | SAT / UNSAT          |
| 6. | Verify open the following dampers:                                                                                                                                                  | <b>Verifies open</b> Exh <b>70MOD-103</b> and Inlet <b>70MOD-100</b> .                                              | SAT / UNSAT          |

|    | STEP                                                                                           | STANDARD                                                                                                      | EVALUATION / COMMENT |
|----|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------|
|    | <ul style="list-style-type: none"> <li>Exh 70MOD-103</li> <li>Inlet 70MOD-100</li> </ul>       | Red light on, Green light off                                                                                 |                      |
| 7. | Place control switch for the following in Pull-to-Lock and verify associated damper is closed: | <b>Note:</b> Candidate returns to G.5.2.                                                                      |                      |
| a. | <b>Standby</b> Control Room air handling unit 70AHU-3B                                         | Places control switch for Fan <b>70AHU-3B</b> in <b>Pull-to-Lock</b> (PTL).<br><br>Green and Red light Off    | SAT / UNSAT          |
|    |                                                                                                | <b>Verifies closed</b> Discharge Damper AHU-3B Disch <b>70MOD-106B</b> .<br><br>Green light on, Red light off | SAT / UNSAT          |
| b. | <b>Standby</b> Control Room exhaust fan 70FN-4B                                                | Places control switch for Fan <b>70FN-4B</b> in <b>Pull-to-Lock</b> (PTL).<br><br>Green and Red light Off     | SAT / UNSAT          |
|    |                                                                                                | <b>Verifies closed</b> Discharge Damper FN-4B Disch <b>70MOD-108B</b> .<br><br>Green light on, Red light off  | SAT / UNSAT          |

|     | STEP                                                  | STANDARD                                                                                                       | EVALUATION / COMMENT                |
|-----|-------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------|
| c.  | <b>Standby</b> Relay Room exhaust fan 70FN-13A        | Places control switch for Fan <b>70FN-13A</b> in <b>Pull-to-Lock</b> (PTL).<br><br>Green and Red light Off     | SAT / UNSAT                         |
|     |                                                       | <b>Verifies closed</b> Discharge Damper FN-13A Disch <b>70MOD-102A</b> .<br><br>Green light on, Red light off  | SAT / UNSAT                         |
| *d. | <b>Running</b> Relay Room air handling unit 70AHU-12B | Places control switch for Fan <b>70AHU-12B</b> in <b>Pull-to-Lock</b> (PTL).<br><br>Green and Red light Off    | <b>CRITICAL STEP</b><br>SAT / UNSAT |
|     |                                                       | <b>Verifies closed</b> Discharge Damper AHU-12B Disch <b>70MOD-101B</b> .<br><br>Green light on, Red light off | SAT / UNSAT                         |

|      | STEP                                                                                                                                                             | STANDARD                                                                                                                                                                                                                                   | EVALUATION / COMMENT                                       |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|
| *12. | Place control switch for the <b>other</b> Relay Room air handling unit to <b>ON</b> , spring return to normal, and verify the associated discharge damper opens. | Places the control switch for Fan <b>70AHU-12A</b> to <b>ON</b> .<br><br>Red light On, Green light Off<br><br><b>Verifies open</b> Discharge Damper AHU-12A Disch <b>70MOD-101A</b> .<br><br>Red light On, Green light Off                 | <b>CRITICAL STEP</b><br>SAT / UNSAT<br><br><br>SAT / UNSAT |
| *13. | Place control switch for the <b>running</b> Relay Room exhaust fan in <b>Pull-to Lock</b> and verify the associated discharge damper closes:                     | Places the control switch for Fan <b>70FN-13B</b> to <b>Pull-to Lock</b> (PTL).<br><br>Green and Red light Off<br><br><b>Verifies closed</b> Discharge Damper <b>FN-13B</b> Disch <b>70MOD-102B</b> .<br><br>Green light On, Red light Off | <b>CRITICAL STEP</b><br>SAT / UNSAT<br><br><br>SAT / UNSAT |
| *14. | Place control switch for the <b>other</b> Relay room exhaust fan to <b>ON</b> , spring return to normal, and verify the associated discharge damper opens:       | Places the control switch for Fan <b>70FN-13A</b> to <b>ON</b> .<br><br>Red light On, Green light Off                                                                                                                                      | <b>CRITICAL STEP</b><br>SAT / UNSAT                        |

|      | STEP                                                                                                                                                                                          | STANDARD                                                                                                                                                                                                                                               | EVALUATION / COMMENT                |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                                                               | <b>Verifies open Discharge Damper FN-13A Disch 70MOD-102A.</b><br><br>Red light On, Green light Off                                                                                                                                                    | SAT / UNSAT                         |
| *15. | Ensure the following control switches are restored from Pull-to-Lock to green flagged:                                                                                                        | Ensures the following control switches are restored from Pull-to-Lock to green flagged: <ul style="list-style-type: none"> <li>• 70AHU-12B</li> <li>• 70FN-13B</li> <li>• 70AHU-3B</li> <li>• 70FN-4B</li> </ul> Switch in center position, Flag green | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 16.  | Restore Relay Room ventilation from purge per Subsection G.4                                                                                                                                  | Selects Subsection G.4 and begins at Step 1.                                                                                                                                                                                                           | SAT / UNSAT                         |
| *17. | Place the following Relay Room Ventilation control switches in <b>AUTO</b> : <ul style="list-style-type: none"> <li>• Isol &amp; Purge Cntrl A</li> <li>• Isol &amp; Purge Cntrl B</li> </ul> | Places/verifies <b>Isol &amp; Purge Cntrl A</b> and <b>Isol &amp; Purge Cntrl B</b> switches in <b>Auto</b> position.                                                                                                                                  | <b>CRITICAL STEP</b><br>SAT / UNSAT |

| STEP                                                       |  | STANDARD | EVALUATION / COMMENT |
|------------------------------------------------------------|--|----------|----------------------|
| <b><u>EVALUATOR:</u></b> Terminate the task at this point. |  |          |                      |



## **HANDOUT**

- A. **Relay Room Ventilation train 'B' was placed in service last Shift to support maintenance on train 'A'.**
- B. **Relay Room Ventilation train 'A' is now ready to be placed back in service.**

**The CRS directs you to switch Relay Room supply and exhaust fans to the 'A' train per OP-56 Relay Room Ventilation and Cooling.**

ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                       |                                                                  |
|------------------------------------------------------|---------------------------------------|------------------------------------------------------------------|
| S/RO<br>APPL. TO                                     | NRC S3 LOI-12-2<br>JPM NUMBER         | TASK TITLE: Start Reactor Recirc Pump - High Vib trip (Alt Path) |
| REV: 0                                               | DATE: 3/2012                          | NRC K/A SYSTEM NUMBER: 202001 A4.01 3.7/3.7                      |
| JAF TASK NUMBER: _____                               |                                       | JAF QUAL STANDARD NUMBER: OP-27                                  |
| ESTIMATED COMPLETION TIME: 15 Minutes                |                                       |                                                                  |
| SUBMITTED: _____                                     |                                       | OPERATIONS REVIEW: _____                                         |
| APPROVED: _____                                      |                                       |                                                                  |
| ~~~~~                                                |                                       |                                                                  |
| CANDIDATE NAME: _____                                |                                       | LOGIN ID                                                         |
| JPM Completion                                       | <input type="checkbox"/> Simulated    | <input checked="" type="checkbox"/> Performed                    |
| Location:                                            | <input type="checkbox"/> Plant        | <input checked="" type="checkbox"/> Simulator                    |
| DATE PERFORMED: _____                                | TIME TO COMPLETE: _____ Minutes       |                                                                  |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory                          |
| ~~~~~                                                |                                       |                                                                  |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                       |                                                                  |
|                                                      |                                       |                                                                  |
| EVALUATOR: _____                                     |                                       |                                                                  |
| SIGNATURE/PRINTED                                    |                                       |                                                                  |
| CANDIDATE REVIEW: _____                              |                                       |                                                                  |
| SIGNATURE                                            |                                       |                                                                  |
| REVIEWED BY: _____                                   | DOC. COMPLETE: _____                  |                                                                  |
| PROGRAM ADMINISTER                                   |                                       |                                                                  |

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

|             |                        |                                                                  |
|-------------|------------------------|------------------------------------------------------------------|
| <u>S/RO</u> | <u>NRC S3 LOI-12-2</u> |                                                                  |
| APPL. TO    | JPM NUMBER             | TASK TITLE: Start Reactor Recirc Pump - High Vib trip (Alt Path) |

dd. **SAFETY CONSIDERATIONS**

- A. None

ee. **REFERENCES**

- A. OP-27, Recirculation System

ff. **TOOLS AND EQUIPMENT**

- A. None

gg. **SET UP REQUIREMENTS**

- A. Initialize simulator to power operating IC (IC-152).
- B. RWR Pump 'B' at minimum flow.
- C. RWR Pump 'A' ready to start, up through OP-27 Step G.10.38.
- D. Trigger 10 = Malfunction for high vibrations on RWR pump 'A'.
- E. Event trigger 10 = 02MOV-53A near full open.
- F. Ensure ST-26K requirements will be met.

hh. **EVALUATOR NOTES**

- A. The Candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the Candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The Candidate should demonstrate proper use of HU tools such as procedure use, self checking and three-point communication.

ii. **TASK CONDITIONS**

- A. The Plant is operating in Mode 1.
- B. RWR Pump 'B' is running.
- C. RWR Pump 'A' is ready to start.

jj. **INITIATING CUE**

The CRS directs you to start RWR Pump 'A' per OP-27, beginning at Step G.10.39.

**\* - CRITICAL STEP**

|     | STEP                                                                                                                                                                                                   | STANDARD                                                | EVALUATION / COMMENT                |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------------------|
| 1.  | Obtain a controlled copy of OP-27, Recirculation System.                                                                                                                                               | The Candidate obtains a controlled copy of OP-27.       | SAT / UNSAT                         |
| 2.  | Reviews the precautions.                                                                                                                                                                               | Reviews the precautions associated with the procedure.  | SAT / UNSAT                         |
| 3.  | Select the correct section to perform the task.                                                                                                                                                        | Selects Section G of OP-27.                             | SAT / UNSAT                         |
| *4. | Start RWR PMP 02-2P-1A.                                                                                                                                                                                | Rotates RWR Pump 'A' control switch clockwise to START. | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 5.  | Perform the following:<br>a. Verify speed rises to approximately 80% on RWR MG A SPEED CNTRL.<br>b. Verify RWR MG A GEN FIELD BKR closes.<br>c. Ensure speed returns to approximately 26% on RWR MG A. | Observes normal start parameters.                       | SAT / UNSAT                         |

|     | STEP                                                                 | STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                    | EVALUATION / COMMENT         |
|-----|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| *6. | Slowly open RWR PMP A DISCH 02MOV-53A as follows:                    | <p>Slowly opens 02MOV-53A by rotating control switch clockwise.</p> <p><b>Evaluator Note:</b> The procedure provides a “bump and wait” methodology with suggested operating and wait times. The valve should take approximately 1-2 minutes to open.</p> <p><b>Evaluator Note:</b> When 02MOV-53A nears the full open position, high pump vibrations will be automatically inserted, leading to the JPM alternate path.</p> | CRITICAL STEP<br>SAT / UNSAT |
| 7.  | Observes annunciator for high motor vibs (09-4-2-18).                | Candidate acknowledges alarm and reports condition to supervisor (examiner).                                                                                                                                                                                                                                                                                                                                                | SAT / UNSAT                  |
| 8.  | Refers to ARP 09-4-2-18.                                             | Refers to ARP.                                                                                                                                                                                                                                                                                                                                                                                                              | SAT / UNSAT                  |
| 9.  | Attempt to clear alarm by depressing RWR PMP A VIB ALARM pushbutton. | Depresses RWR PMP A VIB ALARM pushbutton.                                                                                                                                                                                                                                                                                                                                                                                   | SAT / UNSAT                  |
| 10. | If annunciator 09-4-2-18 does not clear...                           | <p><b>Note:</b> RWR vibs are read in Relay Room. Candidate may state they are going to the Relay Room.</p> <p><b>Evaluator Cue:</b> Report that <u>all</u> X-Y RWR Pump A vibrations readings are 10 mils.</p> <p>Recognizes RWR Pump A vibrations are above RESTRICTED level.</p>                                                                                                                                          | SAT / UNSAT                  |

|      | STEP                                                                                                                                                                                                                                               | STANDARD                                                                                                                                                 | EVALUATION / COMMENT                |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 11.  | <p>If any "A" RWR 1A X or Y value reaches (RESTRICTED), then perform the following:</p> <p>Reduce "A" RWR pump speed to reduce seal area vibration to below ALERT trigger.</p>                                                                     | <p>Recognizes RWR Pump A speed is already at minimum.</p> <p><b>Evaluator Cue:</b> Report that all RWR Pump A vibrations readings are still 10 mils.</p> | SAT / UNSAT                         |
| 12.  | <p>IF RWR Pump B is running, THEN perform the following:</p> <p>If RWR Pump A must be shutdown to protect plant equipment whose failure could adversely impact plant safety (example: RWR pump high temp alarm), THEN continue at Step G.2.2c.</p> | Continues at Step G.2.2c.                                                                                                                                | SAT / UNSAT                         |
| 13.  | <p>WHEN RWR Pump A trips, execute AOP-8 concurrently with this procedure.</p>                                                                                                                                                                      | <p><b>Evaluator Cue:</b> Another operator will perform AOP-8.</p> <p>Acknowledges cue.</p>                                                               | SAT / UNSAT                         |
| *14. | <p>Close RWR PMP A DISCH 02MOV-53A.</p>                                                                                                                                                                                                            | Rotates 02MOV-53A control switch counterclockwise.                                                                                                       | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|                                                           | STEP                                          | STANDARD                                                                                                     | EVALUATION / COMMENT |
|-----------------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------|
| 15.                                                       | Verify RWR PMP 02-2P-1A is tripped.           | Verifies RWR PMP 02-2P-1A tripped.<br><br><b>Booth Operator:</b> Remove hi Vib alarm when Recirc pump trips. | SAT / UNSAT          |
| 16.                                                       | Place RWR PMP 02-2P-1A control switch in PTL. | Places RWR PMP 02-2P-1A control switch in PTL.                                                               | SAT / UNSAT          |
| 17.                                                       | Verify open RWR MG A GEN FIELD BKR.           | Verifies field breaker opens 17 seconds after drive motor breaker trips.                                     | SAT / UNSAT          |
| <b><u>EVALUATOR</u></b> Terminate the task at this point. |                                               |                                                                                                              |                      |

## **Handout**

- A. **The Plant is operating in Mode 1.**
- B. **RWR Pump 'B' is running.**
- C. **RWR Pump 'A' is ready to start.**

**The CRS directs you to start RWR Pump 'A' per OP-27, beginning at Step G.10.39.**



ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                                                      |                                                                                                |
|------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| S/RO<br>APPL. TO                                     | NRC S4 LOI-12-2<br>JPM NUMBER                                        | TASK TITLE: Initiate RCIC in Pressure Control with Speed<br>Failure (Alt Path)                 |
| REV: 0                                               | DATE: 3/2012                                                         | NRC K/A SYSTEM NUMBER: 217000 A4.07 3.9 / 3.8                                                  |
| JAF TASK NUMBER:                                     |                                                                      | JAF QUAL STANDARD NUMBER: OP-19                                                                |
| ESTIMATED COMPLETION TIME: 15 Minutes                |                                                                      |                                                                                                |
| SUBMITTED:                                           |                                                                      | OPERATIONS REVIEW:                                                                             |
| APPROVED:                                            |                                                                      |                                                                                                |
| ~~~~~                                                |                                                                      |                                                                                                |
| CANDIDATE NAME:                                      |                                                                      |                                                                                                |
| JPM Completion<br>Location:                          | <input type="checkbox"/> Simulated<br><input type="checkbox"/> Plant | <input checked="" type="checkbox"/> Performed<br><input checked="" type="checkbox"/> Simulator |
| DATE PERFORMED:                                      | TIME TO COMPLETE:                                                    | Minutes                                                                                        |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory                                | <input type="checkbox"/> Unsatisfactory                                                        |
| ~~~~~                                                |                                                                      |                                                                                                |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                                                      |                                                                                                |
| EVALUATOR:                                           |                                                                      |                                                                                                |
| SIGNATURE/PRINTED                                    |                                                                      |                                                                                                |
| CANDIDATE REVIEW:                                    |                                                                      |                                                                                                |
| SIGNATURE                                            |                                                                      |                                                                                                |
| REVIEWED BY:                                         | DOC. COMPLETE:                                                       |                                                                                                |
| PROGRAM ADMINISTER                                   |                                                                      |                                                                                                |

**JOB PERFORMANCE MEASURE  
RECORD AND CHECKLIST**

|                             |                                        |             |                                              |
|-----------------------------|----------------------------------------|-------------|----------------------------------------------|
| <u>        S/RO        </u> | <u>        NRC S4 LOI-12-2        </u> | TASK TITLE: | Initiate RCIC in Pressure Control with Speed |
| APPL. TO                    | JPM NUMBER                             |             | Failure (Alt Path)                           |

|                 |                                 |     |                                 |
|-----------------|---------------------------------|-----|---------------------------------|
| Current Update: | <u>                        </u> | By: | <u>                        </u> |
|                 | Date                            |     | Int                             |

Outstanding Items

- |                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

|                         |                                 |     |                                 |
|-------------------------|---------------------------------|-----|---------------------------------|
| Current Update:         | <u>                        </u> | By: | <u>                        </u> |
|                         | Date                            |     | Int.                            |
| Previous Revision Date: |                                 |     |                                 |

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S4 LOI-12-2  
JPM NUMBER

TASK TITLE: Initiate RCIC in Pressure Control with Speed  
Failure (Alt Path)

kk. **SAFETY CONSIDERATIONS**

A. None

ll. **REFERENCES**

A. OP-19, Reactor Core Isolation Cooling System

mm. **TOOLS AND EQUIPMENT**

A. None

nn. **SET UP REQUIREMENTS**

- A. Plant in a post scram condition with RPV level between 177" and 222.5" (IC-153).
- B. RPV pressure between 700 psig and 1000 psig and rising slowly.
- C. Main Steam Isolation Valves closed.
- D. Insert malfunction RC07A (RCIC Governor Fails High).
- E. HPCI is not available.

oo. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

pp. **TASK CONDITIONS**

- 1. Plant is in a post-scram condition with RPV level between 177" and 222.5".
- 2. RPV pressure is between 700 psig and 1000 psig and rising slowly.
- 3. Main Steam Isolation valves are closed.
- 4. HPCI is not available.

**\* - CRITICAL STEP**

**INITIATING CUE**

Inform the candidate, "The CRS directs you to start the RCIC System for RPV pressure control. Maximize heat removal with RCIC to minimize SRV operations per OP-19."

| STEP                                                                                                                                        | STANDARD                                                                                                                                  | EVALUATION / COMMENT |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 1. Obtain a controlled copy of Posted Attachment, RCIC MANUAL START UP FOR RPV PRESSURE CONTROL or OP-19, D.2.                              | Obtains a controlled copy of OP-19.                                                                                                       | SAT / UNSAT          |
| 2. <b>Caution:</b> Operating RCIC in pressure control mode with suction from the CST and CST level below 79.5 inches could cause vortexing. | Reviews Caution.<br><br>Verifies that CST level is greater than 79.5 inches.                                                              | SAT / UNSAT          |
| 3. Verify HPCI auto-initiation condition is clear.                                                                                          | Verifies that there is no HPCI automatic initiating condition present of high drywell pressure or low RPV water level.                    | SAT / UNSAT          |
| 4. Verify Annunciator 09-4-0-32 RCIC LOGIC RX LVL HI is clear.                                                                              | Verifies Annunciator 09-4-0-32 RCIC LOGIC RX LVL HI is clear.                                                                             | SAT / UNSAT          |
| 5. Align RCIC to CSTs as follows.<br>a. Ensure open CST SUCT VLV 13MOV-18.<br>b. Ensure closed the following valves:                        | Ensures:<br><br><ul style="list-style-type: none"> <li>CST SUCT VLV 13MOV-18 - open</li> <li>INBD TORUS SUCT 13MOV-41 - closed</li> </ul> | SAT / UNSAT          |

| STEP                                                                                                              | STANDARD                                                                               | EVALUATION / COMMENT                                                                                                                                                      |
|-------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• INBD TORUS SUCT 13MOV-41</li> <li>• OUTBD TORUS SUCT 13MOV-39</li> </ul> | <ul style="list-style-type: none"> <li>• OUTBD TORUS SUCT 13MOV-39 - closed</li> </ul> |                                                                                                                                                                           |
| *6.                                                                                                               | Open HPCI & RCIC TEST VLV TO CST 23MOV-24.                                             | <b>CRITICAL STEP</b><br>SAT / UNSAT                                                                                                                                       |
| *7.                                                                                                               | Start VAC PMP 13P-3.                                                                   | <b>CRITICAL STEP</b><br>SAT / UNSAT                                                                                                                                       |
| *8.                                                                                                               | Open OIL CLR WTR SUPP 13MOV-132.                                                       | <b>CRITICAL STEP</b><br>SAT / UNSAT                                                                                                                                       |
| *9.                                                                                                               | Throttle open TEST VLV TO CST 13MOV-30 approximately 10 seconds.                       | <b>CRITICAL STEP</b><br>SAT / UNSAT                                                                                                                                       |
| *10.                                                                                                              | Open TURB STM SUPP VLV 13MOV-131.                                                      | <b>CRITICAL STEP</b><br>SAT / UNSAT                                                                                                                                       |
| 11.                                                                                                               | Verify RCIC Flow rate is approximately 400 gpm.                                        | SAT / UNSAT                                                                                                                                                               |
| <b><u>EVALUATOR NOTE:</u></b>                                                                                     |                                                                                        | <p>Informes the CRS of the failure of automatic speed control of the RCIC turbine; follow guidance of EN-OP-115 to place the RCIC turbine speed controller in manual.</p> |

| STEP                                                                                                                              | STANDARD                                                                                                                                                                                                                                                          | EVALUATION / COMMENT                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Examiner:</b> Role Play as CRS to direct the Candidate to take manual control and establish pressure control with RCIC.</p> |                                                                                                                                                                                                                                                                   |                                                                                                                                                                                             |
| *12.                                                                                                                              | Place RCIC flow controller in manual to control speed                                                                                                                                                                                                             | <p><b>CRITICAL STEP</b><br/>SAT / UNSAT</p>                                                                                                                                                 |
| 13.                                                                                                                               | <p>Ensure closed the following valves:</p> <ul style="list-style-type: none"> <li>• MIN FLOW VLV 13MOV-27</li> <li>• STM LINE DRN TO RADW 13AOV-34</li> <li>• STM LINE DRN TO RADW 13AOV-35</li> </ul>                                                            | <p>Observes that the green – closed indicating light is on for:</p> <ul style="list-style-type: none"> <li>• 13MOV-27</li> <li>• 13AOV-34</li> <li>• 13AOV-35</li> </ul> <p>SAT / UNSAT</p> |
| 14.                                                                                                                               | <p><b>NOTE:</b> As RPV pressure lowers, indicated level on 02-3LI-283A may rise and result in an undesired trip at the red line high level trip value.<br/>Posted Attachment 3 will give an equivalent trip level for 06LI-94/A/B/C indicators on panel 09-5.</p> | <p>Reviews Note.</p> <p>SAT / UNSAT</p>                                                                                                                                                     |

| STEP                                                                                                                                                                                                                                                                                                                                 | STANDARD                                                                                                                                                                                                                                                                                                         | EVALUATION / COMMENT                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <p>15. <b>CAUTION:</b> Operating RCIC at less than 2200 rpm could cause improper oil system operation and insufficient exhaust flow resulting in check valve banging or steam flow reversals.</p> <p>Failure to closely monitor RCIC pump discharge pressure could result in exceeding RCIC piping design pressure of 1320 psig.</p> | Reviews Caution.                                                                                                                                                                                                                                                                                                 | SAT / UNSAT                                 |
| <p>*16. <b>WHILE</b> controlling RPV pressure, maintain RCIC speed GREATER THAN 2200 rpm by throttling closed TEST VLV TO CST 13MOV-30.</p>                                                                                                                                                                                          | <p>At 09-4 Panel, monitors RCIC turbine speed on 13SPI-1 and throttles closed 13MOV-30 to ensure RCIC only runs below 2200 rpm during transient operation.</p> <p><b>NOTE:</b> RCIC flow control manual adjustment knob will need to be adjusted in tandem with 13MOV-30 to maintain RCIC flow near 400 gpm.</p> | <p><b>CRITICAL STEP</b><br/>SAT / UNSAT</p> |
| <p>*17. Throttle TEST VLV TO CST 13MOV-30, to obtain the desired RPV pressure control.</p>                                                                                                                                                                                                                                           | At Panel 09-4, throttles closed 13MOV-30 to begin the RPV depressurization to minimize SRV operation.                                                                                                                                                                                                            | <p><b>CRITICAL STEP</b><br/>SAT / UNSAT</p> |
| <p>18. Startup RHR Torus cooling per Section D of OP-13B, as soon as practicable.</p>                                                                                                                                                                                                                                                | <p><b>Note to Evaluator:</b> RPV pressure may be approaching 1000 psig and Candidate may suggest opening an SRV. Inform Candidate that another Operator is assigned to SRVs.</p> <p><b>EVALUATOR:</b> Inform the applicant that another operator has been tasked with initiating Torus cooling and</p>           |                                             |

| STEP | STANDARD                                                                                                                                                                                                                                                                                                                                            | EVALUATION / COMMENT |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 19.  | <p>monitoring Torus parameters.</p> <p>Dispatches an Operator to verify the following RCIC parameters:</p> <ul style="list-style-type: none"> <li>Oil pump discharge pressure: 12 to 15 psig.</li> <li>Oil temperature from cooler: <b>GREATER THAN</b> 60°F.</li> <li>Oil temperature from the turbine bearings: <b>LESS THAN</b> 160°F</li> </ul> | SAT / UNSAT          |

EVALUATOR: Terminate the task at this point.



## HANDOUT

1. Plant is in a post-scrum condition with RPV level between 177" and 222.5".
2. RPV pressure is between 700 psig and 1000 psig and rising slowly.
3. Main Steam Isolation Valves are closed.
4. HPCI is not available.

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

The CRS directs you to start the RCIC System for RPV pressure control. Maximize heat removal with RCIC to minimize SRV operations per OP-19.

ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                       |                                                    |
|------------------------------------------------------|---------------------------------------|----------------------------------------------------|
| S/RO<br>APPL. TO                                     | NRC S5 LOI-12-2<br>JPM NUMBER         | TASK TITLE: Restore ESW after injection into RBCLC |
| REV: 0                                               | DATE: 3/2012                          | NRC K/A SYSTEM NUMBER: 400000 A4.01 3.1 / 3.0      |
| JAF TASK NUMBER: _____                               |                                       | JAF QUAL STANDARD NUMBER: OP-21                    |
| ESTIMATED COMPLETION TIME: 15 Minutes                |                                       |                                                    |
| SUBMITTED: _____                                     |                                       | OPERATIONS REVIEW: _____                           |
| APPROVED: _____                                      |                                       |                                                    |
| ~~~~~                                                |                                       |                                                    |
| CANDIDATE NAME: _____                                |                                       |                                                    |
| JPM Completion                                       | <input type="checkbox"/> Simulated    | <input checked="" type="checkbox"/> Performed      |
| Location:                                            | <input type="checkbox"/> Plant        | <input checked="" type="checkbox"/> Simulator      |
| DATE PERFORMED: _____                                | TIME TO COMPLETE: _____ Minutes       |                                                    |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory            |
| ~~~~~                                                |                                       |                                                    |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                       |                                                    |
|                                                      |                                       |                                                    |
| EVALUATOR: _____                                     |                                       |                                                    |
| SIGNATURE/PRINTED                                    |                                       |                                                    |
| CANDIDATE REVIEW: _____                              |                                       |                                                    |
| SIGNATURE                                            |                                       |                                                    |
| REVIEWED BY: _____                                   | DOC. COMPLETE: _____                  |                                                    |
| PROGRAM ADMINISTER                                   |                                       |                                                    |

## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

|             |                        |                                                    |
|-------------|------------------------|----------------------------------------------------|
| <u>S/RO</u> | <u>NRC S5 LOI-12-2</u> | TASK TITLE: Restore ESW after injection into RBCLC |
| APPL. TO    | JPM NUMBER             |                                                    |

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int

## Outstanding Items

- |                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int.

Previous Revision Date:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S5 LOI-12-2  
JPM NUMBER

TASK TITLE: Restore ESW after injection into RBCLC

qq. **SAFETY CONSIDERATIONS**

A. None

rr. **REFERENCES**

B. OP-21, Emergency Service Water

C. OP-40, Reactor Building Closed Loop Cooling

ss. **TOOLS AND EQUIPMENT**

A. None

tt. **SET UP REQUIREMENTS**

B. Reset to IC-154.

C. Place RBCLC pump control switches in PTL.

uu. **EVALUATOR NOTES**

A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

vv. **TASK CONDITIONS**

5. The Plant is shutdown

6. All RBCLC pumps were placed in Pull to Lock.

7. ESW auto aligned to RBCLC.

8. RBCLC pumps are ready to be returned to service.

9. Attachment 3, STATUS CONTROL FORM FOR ESW RESET FOLLOWING INJECTION TO RBCLC, of OP-21 has been performed.

**\* - CRITICAL STEP  
INITIATING CUE**

Inform the candidate, "The CRS directs you to restore the ESW system to normal per OP-21 Section F.3."

|     | STEP                                                                | STANDARD                                                                        | EVALUATION / COMMENT                |
|-----|---------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------|
| 1.  | Obtain a controlled copy of OP-21, ESW.                             | Obtains a controlled copy of OP-21.<br>Reviews Precautions.                     | SAT / UNSAT                         |
| *2. | Reset ESW Logic A by depressing ESW SYS A INJ SIG RESET pushbutton. | Depresses ESW SYS A INJ SIG RESET pushbutton.                                   | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 3.  | Verify white ESW SYS A INJ SIG light is off.                        | Verifies white ESW SYS A INJ SIG light is off.                                  | SAT / UNSAT                         |
| *4. | Reset ESW Logic B by depressing ESW SYS B INJ SIG RESET pushbutton. | Depresses ESW SYS B INJ SIG RESET pushbutton.                                   | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 5.  | Verify white ESW SYS B INJ SIG light is off.                        | Verifies white ESW SYS B INJ SIG light is off.                                  | SAT / UNSAT                         |
| *6. | Close ESW RETURN TO SERV WTR 15MOV-175B.                            | Closes ESW RETURN TO SERV WTR 15MOV-175B by taking control switch CCW to Close. | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *7. | Open ESW SYS B TEST VLV 46MOV-102B.                                 | Opens ESW SYS B TEST VLV 46MOV-102B by taking control switch CW to Open.        | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *8. | Close ESW SYS B INJ VLV 46MOV-101B.                                 | Closes ESW SYS B INJ VLV 46MOV-101B by taking control switch CCW to Close.      | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|      | STEP                                                                                                                                           | STANDARD                                                                                                                                                                                                                                                       | EVALUATION / COMMENT                |
|------|------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      |                                                                                                                                                |                                                                                                                                                                                                                                                                |                                     |
| *9.  | Close ESW RETURN TO SERV WTR 15MOV-175A.                                                                                                       | Closes ESW RETURN TO SERV WTR 15MOV-175A by taking control switch CCW to Close.                                                                                                                                                                                | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *10. | Open ESW SYS A TEST VLV 46MOV-102A.                                                                                                            | Opens ESW SYS A TEST VLV 46MOV-102A by taking control switch CW to Open.                                                                                                                                                                                       | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *11. | Close ESW SYS A INJ VLV 46MOV-101A.                                                                                                            | Closes ESW SYS A INJ VLV 46MOV-101A by taking control switch CCW to Close.                                                                                                                                                                                     | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 12.  | Ensure open 15RBC-41 RBCLC Makeup Tank TK-4 Outlet<br>Start up RBCLC System per Section D of OP-40.                                            | <p><b>EVALUATOR CUE:</b><br/>Time compression will be invoked and another Operator will restore RBCLC.</p> <p><b>STANDBY INSTRUCTOR ACTION:</b><br/>Start RBCLC pumps A &amp; B.<br/>Inform Candidate RBCLC discharge pressure is stable and &gt; 80 psig.</p> |                                     |
| 13.  | Candidate reads Steps F.3.14, 15 & 16.                                                                                                         | <p><b>EVALUATOR CUE:</b><br/>Inform Candidate no ESW valves were manually re-positioned during AOP-11.</p>                                                                                                                                                     |                                     |
| 14.  | <b>WHEN</b> RBCLC discharge header pressure is stable at <b>GREATER THAN OR EQUAL TO</b> 80 psig, perform Restoration section of Attachment 3. | <p><b>EVALUATOR CUE:</b><br/>OP-21 Attachment 3, Restoration section, is complete.</p>                                                                                                                                                                         |                                     |

|     | STEP                                                                  | STANDARD                                                                                                                       | EVALUATION / COMMENT |
|-----|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|
|     |                                                                       |                                                                                                                                |                      |
| 15. | Shut down ESW per Subsections F.1 and F.2.                            | Obtains Subsections F.1 and F.2.                                                                                               | SAT / UNSAT          |
| 16. | Verify RBCLC System is in normal operation.                           | Verifies RBCLC system is in normal operation.<br><br><b><u>EVALUATOR CUE:</u></b><br>RBCLC system is in normal operation.      | SAT / UNSAT          |
| 17. | Verify EDG A and C are shutdown.                                      | Verifies EDG A and C are shutdown.                                                                                             | SAT / UNSAT          |
| 18. | Verify ventilation loads downstream of 46MOV-101A do not require ESW. | <b><u>EVALUATOR CUE:</u></b><br>Ventilation loads downstream of 46MOV-101A do not require ESW.                                 | SAT / UNSAT          |
| 19. | Ensure open ESW SYS A TEST VLV 46MOV-102A.                            | Ensures open ESW SYS A TEST VLV 46MOV-102A.<br><ul style="list-style-type: none"> <li>Red light on, Green light off</li> </ul> | SAT / UNSAT          |
| 20. | Ensure closed ESW SYS A INJ VLV 46MOV-101A                            | Ensures closed ESW SYS A INJ VLV 46MOV-101A.                                                                                   | SAT / UNSAT          |

|                                                     | STEP                   | STANDARD                                                                        | EVALUATION / COMMENT                |
|-----------------------------------------------------|------------------------|---------------------------------------------------------------------------------|-------------------------------------|
|                                                     |                        | <ul style="list-style-type: none"> <li>Red light off, Green light on</li> </ul> |                                     |
| *21.                                                | Stop ESW PMP A 46P-2A. | Stops ESW PMP A 46P-2A by taking control switch CCW to Stop.                    | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| <b>EVALUATOR:</b> Terminate the task at this point. |                        |                                                                                 |                                     |



## **HANDOUT**

1. The Plant is shutdown.
2. All RBCLC pumps were placed in Pull to Lock.
3. ESW auto aligned to RBCLC.
4. RBCLC pumps are ready to be returned to service.
5. Attachment 3, STATUS CONTROL FORM FOR ESW RESET FOLLOWING INJECTION TO RBCLC, of OP-21 has been performed.

**The CRS directs you to restore the ESW system to normal per OP-21 Section F.3.**

ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                                                                        |                                                                                                |
|------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <u>S/RO</u><br>APPL. TO                              | <u>NRC S6 LOI-12-2</u><br>JPM NUMBER                                                   | TASK TITLE: Core Spray Loop A Shutdown                                                         |
| REV: <u>0</u>                                        | DATE: <u>3/2012</u>                                                                    | NRC K/A SYSTEM NUMBER: <u>209001 A4.01 3.8 / 3.6</u>                                           |
| JAF TASK NUMBER: _____                               |                                                                                        | JAF QUAL STANDARD NUMBER: <u>OP-14</u>                                                         |
| ESTIMATED COMPLETION TIME: <u>12</u> Minutes         |                                                                                        |                                                                                                |
| SUBMITTED: _____                                     |                                                                                        | OPERATIONS REVIEW: _____                                                                       |
| APPROVED: _____<br>~~~~~                             |                                                                                        |                                                                                                |
| CANDIDATE NAME: _____                                |                                                                                        |                                                                                                |
| JPM Completion Location:                             | <input type="checkbox"/> Simulated<br><input type="checkbox"/> Plant                   | <input checked="" type="checkbox"/> Performed<br><input checked="" type="checkbox"/> Simulator |
| DATE PERFORMED: _____                                | TIME TO COMPLETE: _____ Minutes                                                        |                                                                                                |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory<br>~~~~~ |                                                                                                |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                                                                        |                                                                                                |
| EVALUATOR: _____<br>SIGNATURE/PRINTED                |                                                                                        |                                                                                                |
| CANDIDATE REVIEW: _____<br>SIGNATURE                 |                                                                                        |                                                                                                |
| REVIEWED BY: _____<br>PROGRAM ADMINISTER             | DOC. COMPLETE: _____                                                                   |                                                                                                |

## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

|                         |                                      |             |                            |
|-------------------------|--------------------------------------|-------------|----------------------------|
| <u>S/RO</u><br>APPL. TO | <u>NRC S6 LOI-12-2</u><br>JPM NUMBER | TASK TITLE: | Core Spray Loop A Shutdown |
|-------------------------|--------------------------------------|-------------|----------------------------|

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int

## Outstanding Items

- |                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

Current Update: \_\_\_\_\_ Date \_\_\_\_\_ By: \_\_\_\_\_ Int. \_\_\_\_\_

Previous Revision Date:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S6 LOI-12-2  
JPM NUMBER

TASK TITLE: Core Spray Loop A Shutdown

**ww. SAFETY CONSIDERATIONS**

A. None

**xx. REFERENCES**

D. OP-14, Core Spray System

**yy. TOOLS AND EQUIPMENT**

A. None

**zz. SET UP REQUIREMENTS**

D. Reset to IC-154.

E. Core Spray Loop A injecting into RPV.

F. Core Spray Loop B in a standby lineup.

G. DW pressure > 2.7 psig.

**aaa. EVALUATOR NOTES**

A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.

B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.

C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

**bbb. TASK CONDITIONS**

10. The Plant has experienced a loss of coolant accident.

11. Core Spray is the only injection source available to the RPV.

12. Core Spray Loop A is currently injecting and maintaining RPV level > TAF.

13. Core Spray Loop B is in standby and available.

14. A report from the field states that failure of Core Spray Pump A is imminent.

**\* - CRITICAL STEP**

**INITIATING CUE**

Inform the candidate, "The CRS directs you to start Core Spray Loop B then shutdown Core Spray Loop A per OP-14 while maintaining RPV level >0 inches <222.5 inches."

|     | STEP                                                                                                                                            | STANDARD                                                                                                                                                                                                                      | EVALUATION / COMMENT                |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 1.  | Obtain a controlled copy of OP-14, Core Spray System                                                                                            | Obtains a controlled copy of OP-14.<br>Reviews Precautions.                                                                                                                                                                   | SAT / UNSAT                         |
| 2.  | Select Section D.2 of OP-14                                                                                                                     | Selects Section D.2 of OP-14<br><br><b>Role Play:</b> If asked if Core Spray was shutdown under EP-5 Terminate and Prevent, inform Candidate that Core Spray was <b>NOT</b> shutdown per EP-5 Terminate and Prevent.          | SAT / UNSAT                         |
| *3. | Ensure PMP 14P-1B is running.                                                                                                                   | Starts Core Spray Pump B by rotating control switch CW.                                                                                                                                                                       | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 4.  | Ensure open OUTBD INJ VLV 14MOV-11B.                                                                                                            | Ensures open Core Spray Loop B outboard injection valve 14MOV-11B by observing red light on, green light off.                                                                                                                 | SAT / UNSAT                         |
| *5. | When annunciator 09-3-1-27 RHR & CORE SPRAY INJ VLV PERM is in alarm, throttle INBD INJ VLV 14MOV-12B to control RPV water level as directed by | Throttles Core Spray Loop B inboard injection valve to maintain RPV level > 0 inches and < 222.5 inches.<br><br><b>EVALUATOR NOTE:</b> This step may be performed after subsequent steps are taken for shutdown of Core Spray | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|      | STEP                                                                                            | STANDARD                                                                                                                                                                                                                                                                            | EVALUATION / COMMENT                |
|------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      | Shift Manager.                                                                                  | Loop A, as required for Reactor water level control.                                                                                                                                                                                                                                |                                     |
| 6.   | When Core Spray Loop B flow rate is greater than 980 gpm, ensure closed MIN FLOW VLV 14MOV-5B.  | Ensures closed MIN FLOW VLV 14MOV-5B when flow rate > 980 gpm by observing green light on, red light off.<br><br><b>EVALUATOR NOTE:</b> This step may be performed after subsequent steps are taken for shutdown of Core Spray Loop A, as required for Reactor water level control. | SAT / UNSAT                         |
| 7.   | Select Section F.1 of OP-14                                                                     | Selects Section F.1 of OP-14                                                                                                                                                                                                                                                        | SAT / UNSAT                         |
| *8.  | Ensure closed INBD INJ VLV 14MOV-12A                                                            | Closes INBD INJ VLV 14MOV-12A by rotating control switch CCW.                                                                                                                                                                                                                       | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 9.   | Ensure open MIN FLOW VLV 14MOV-5A                                                               | Ensures open MIN FLOW VLV 14MOV-5A by observing red light on, green light off.                                                                                                                                                                                                      | SAT / UNSAT                         |
| *10. | Stop PMP 14P-1A                                                                                 | Stops PMP 14P-1A by rotating control switch CCW.                                                                                                                                                                                                                                    | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 11.  | If Core Spray auto-initiated and Core Spray initiation conditions are no longer present then... | N/A. Core Spray initiation conditions are still present (Drywell pressure >2.7 psig).                                                                                                                                                                                               | SAT / UNSAT                         |

|                                                | STEP                                                                                     | STANDARD                                                                                           | EVALUATION / COMMENT |
|------------------------------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|----------------------|
|                                                |                                                                                          |                                                                                                    |                      |
| 12.                                            | Ensure Core Spray Loop A is in the standby lineup per Section E, as soon as practicable. | <u><b>EVALUATOR CUE:</b></u><br>Another Operator will place Core Spray Loop A in a standby lineup. |                      |
| <b>Evaluator:</b> Terminate JPM at this point. |                                                                                          |                                                                                                    |                      |

## **HANDOUT**

- 1. The Plant has experienced a loss of coolant accident.**
- 2. Core Spray is the only injection source available to the RPV.**
- 3. Core Spray Loop A is currently injecting and maintaining RPV level > TAF.**
- 4. Core Spray Loop B is in standby and available.**
- 5. A report from the field states that failure of Core Spray Pump A is imminent.**

**The CRS directs you to start Core Spray Loop B then shutdown Core Spray Loop A per OP-14 while maintaining RPV level >0 inches <222.5 inches.**



ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE

|                                                      |                                       |                                               |
|------------------------------------------------------|---------------------------------------|-----------------------------------------------|
| S/RO<br>APPL. TO                                     | NRC S7 LOI-12-2<br>JPM NUMBER         | TASK TITLE: Perform APRM Gain Adjust          |
| REV: 0                                               | DATE: 3/2012                          | NRC K/A SYSTEM NUMBER: 215005 A1.07 3.0 / 3.4 |
| JAF TASK NUMBER: _____                               |                                       | JAF QUAL STANDARD NUMBER: ST-5D               |
| ESTIMATED COMPLETION TIME: 20 Minutes                |                                       |                                               |
| SUBMITTED: _____                                     |                                       | OPERATIONS REVIEW: _____                      |
| APPROVED: _____                                      |                                       |                                               |
| ~~~~~                                                |                                       |                                               |
| CANDIDATE NAME: _____                                |                                       | LOGIN ID                                      |
| JPM Completion                                       | <input type="checkbox"/> Simulated    | <input checked="" type="checkbox"/> Performed |
| Location:                                            | <input type="checkbox"/> Plant        | <input checked="" type="checkbox"/> Simulator |
| DATE PERFORMED: _____                                | TIME TO COMPLETE: _____ Minutes       |                                               |
| PERFORMANCE EVALUATION:                              | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory       |
| ~~~~~                                                |                                       |                                               |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE) |                                       |                                               |
|                                                      |                                       |                                               |
| EVALUATOR: _____                                     |                                       |                                               |
| SIGNATURE/PRINTED                                    |                                       |                                               |
| CANDIDATE REVIEW: _____                              |                                       |                                               |
| SIGNATURE                                            |                                       |                                               |
| REVIEWED BY: _____                                   | DOC. COMPLETE: _____                  |                                               |
| PROGRAM ADMINISTER                                   |                                       |                                               |

## JOB PERFORMANCE MEASURE RECORD AND CHECKLIST

|                         |                                      |             |                          |
|-------------------------|--------------------------------------|-------------|--------------------------|
| <u>S/RO</u><br>APPL. TO | <u>NRC S7 LOI-12-2</u><br>JPM NUMBER | TASK TITLE: | Perform APRM Gain Adjust |
|-------------------------|--------------------------------------|-------------|--------------------------|

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int

## Outstanding Items

- |                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

Current Update: \_\_\_\_\_ By: \_\_\_\_\_  
Date Int.

Previous Revision Date:

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

S/RO  
APPL. TO

NRC S7 LOI-12-2  
JPM NUMBER

TASK TITLE: Perform APRM Gain Adjust

ccc. **SAFETY CONSIDERATIONS**

- A. None

ddd. **REFERENCES**

- E. ST-5D, APRM Calibration
- F. OP-16, NEUTRON MONITORING

eee. **TOOLS AND EQUIPMENT**

- A. Jewelers screwdriver

fff. **SET UP REQUIREMENTS**

- H. Approximately 100% power (IC-151)
- I. EPIC/3D available and plant conditions stable.
- J. Adjust all APRMs to an acceptable value per ST-5D.
- K. Adjust "D" APRM to 3-4% below desired value of ST-5D.
- L. Prepare a working copy of ST-5D complete up to section 8.0.

ggg. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

hhh. **TASK CONDITIONS**

- A. The Plant is operating at approximately 100% power.
- B. ST-5D, APRM Calibration, is required.
- C. The plant has been stable for several hours.
- D. 3D Monicore is available.

**\* - CRITICAL STEP  
INITIATING CUE**

Inform the candidate, "The CRS directs you to perform ST-5D."

|     | STEP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | STANDARD                                                         | EVALUATION / COMMENT                |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|
| 1.  | Obtain a controlled copy of ST-5D                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Obtains a controlled copy of ST-5D.<br>Reviews Precautions.      | SAT / UNSAT                         |
| 2.  | <p>Determine the applicable procedure subsection to perform as follows:</p> <ul style="list-style-type: none"> <li>• IF reactor power is <b>LESS THAN 25%, THEN</b> perform Subsection 8.2.</li> <li>• IF reactor power is <b>GREATER THAN OR EQUAL TO 25%, AND</b> the 3D MONICORE Core Power and Flow Log program is operable, <b>THEN</b> perform Subsection 8.3.</li> <li>• IF reactor power is <b>GREATER THAN OR EQUAL TO 25%, AND</b> the 3D MONICORE Core Power and Flow Log program is not operable, <b>THEN</b> perform Subsection 8.4 with Reactor Engineering assistance as required.</li> </ul> | Selects Section 8.3.                                             | SAT / UNSAT                         |
| *3. | <p>Demand Core Power and Flow Log to determine APRM DR.</p> <p>DR = CORE POWER = %</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Determines APRM DR (desired reading) is approximately 100% power | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|     | STEP                                                                                                                                                                                                     | STANDARD                                                                                                                                                                   | EVALUATION / COMMENT                |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 4.  | Adjust APRMs per Subsection 8.5.                                                                                                                                                                         | Goes to Subsection 8.5.                                                                                                                                                    | SAT / UNSAT                         |
| 5.  | Record initial APRM readings in Table 1.                                                                                                                                                                 | Initial APRM readings are recorded in Table 1.                                                                                                                             | SAT / UNSAT                         |
| 6.  | Record DR in Table 1.                                                                                                                                                                                    | DR is recorded in Table 1.                                                                                                                                                 | SAT / UNSAT                         |
| 7.  | Identify any APRM(s) requiring adjustment in Table 1.<br><br>APRM shall be adjusted to indicate within $\pm 2\%$ of the DR.                                                                              | APRM D is identified as requiring adjustment.                                                                                                                              | SAT / UNSAT                         |
| 8.  | IF APRM adjustment is required, <b>THEN</b> perform the following for each APRM requiring adjustment:<br><br><b>NOTE:</b> Bypassing APRM may be omitted per SM.                                          | <b>EVALUATOR CUE:</b> The Shift Manager directs APRM D to be bypassed per OP-16.<br><br>Candidate acknowledges SM direction.                                               | SAT / UNSAT                         |
| 9.  | Bypass the APRM channel requiring calibration per Section E of OP-16.                                                                                                                                    | OP-16 Section E.16 (Bypassing an APRM) obtained.                                                                                                                           | SAT / UNSAT                         |
| *10 | Place APRM BYP switch in (*).                                                                                                                                                                            | Places APRM BYP switch in D position.                                                                                                                                      | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 11. | Verify APRM (*) is bypassed using one or both of the following: <ul style="list-style-type: none"> <li>APRM (*) BYPASS indicating light is on</li> <li>APRM (*) EPIC alarm indicates bypassed</li> </ul> | APRM D verified bypassed by: <ul style="list-style-type: none"> <li>APRM D BYPASS indicating light is on and \ or</li> <li>APRM D EPIC alarm indicates bypassed</li> </ul> | SAT / UNSAT                         |

|      | STEP                                                                                                                                                                                                                                                                                                               | STANDARD                                                                                                                                                                                                                                 | EVALUATION / COMMENT                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 12.  | <p>Verify the other two APRM channels associated with the same APRM BYP switch are in service using one or both of the following:</p> <ul style="list-style-type: none"> <li>• APRM BYPASS indicating lights are off for the other two APRMs</li> <li>• No EPIC bypassed alarms for the other two APRMs</li> </ul> | <p>APRMs B and F verified to be in service by:</p> <ul style="list-style-type: none"> <li>• APRM BYPASS indicating lights are off for the other two APRMs and \ or</li> <li>• No EPIC bypassed alarms for the other two APRMs</li> </ul> | SAT / UNSAT                         |
| 13.  | <b>ST-5D, 8.5.4 continued:</b><br>Ensure METER FUNCTION switch is set to AVERAGE.                                                                                                                                                                                                                                  | Observes APRM D METER FUNCTION switch set to AVERAGE.                                                                                                                                                                                    | SAT / UNSAT                         |
| 14.  | Ensure APRM MODE switch is in the OPERATE position.                                                                                                                                                                                                                                                                | Observes APRM D MODE switch in OPERATE position.                                                                                                                                                                                         | SAT / UNSAT                         |
| 15.  | <b>NOTE:</b> Clockwise turn raises meter reading; counterclockwise turn lowers meter reading.                                                                                                                                                                                                                      | Candidate reviews Note concerning manipulation of gain adjust control.                                                                                                                                                                   | SAT / UNSAT                         |
| *16. | Turn gain adjustment control (R16) on LPRM card Z-31 to obtain a meter reading within $\pm 2\%$ of DR.                                                                                                                                                                                                             | Gain adjustment control (R16), on LPRM card Z-31, adjusted to obtain a meter reading within $\pm 2\%$ of DR.                                                                                                                             | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 17.  | Unbypass APRM per Section E of OP-16.                                                                                                                                                                                                                                                                              | Section E.17 of OP-16, Returning an APRM to Service, obtained.                                                                                                                                                                           | SAT / UNSAT                         |
| 18.  | Verify the following lights for APRM (*) are off at panel 09-14:<br>• INOP                                                                                                                                                                                                                                         | Observes the following lights for APRM D are off at panel 09-14:<br>• INOP                                                                                                                                                               | SAT / UNSAT                         |

|      | STEP                                                                                                                                                                                                                                                                                                   | STANDARD                                                                                                                                                                                                                                                                                                          | EVALUATION / COMMENT                |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|      | <ul style="list-style-type: none"> <li>• UPSCL NEUT TRIP</li> <li>• UPSCL THERM TRIP</li> </ul>                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>• UPSCL NEUT TRIP</li> <li>• UPSCL THERM TRIP</li> </ul>                                                                                                                                                                                                                   |                                     |
| *19. | Place APRM BYP switch for APRM (*) in center position.                                                                                                                                                                                                                                                 | Places APRM BYP switch (joystick) for APRM D in center position.                                                                                                                                                                                                                                                  | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| 20.  | <p>Verify APRM (*) is returned to service using one or both of the following:</p> <ul style="list-style-type: none"> <li>• APRM (*) BYPASS indicating light is off</li> <li>• No EPIC bypassed alarm for APRM (*)</li> </ul>                                                                           | <p>APRM D verified to be returned to service using one or both of the following:</p> <ul style="list-style-type: none"> <li>• APRM D BYPASS indicating light is off and \ or</li> <li>• No EPIC bypassed alarm for APRM D</li> </ul>                                                                              | SAT / UNSAT                         |
| 21.  | <p>Verify all three APRM channels associated with the same APRM BYP switch are in service using one or both of the following:</p> <ul style="list-style-type: none"> <li>• APRM BYPASS indicating lights are off for the three APRMs</li> <li>• No EPIC bypassed alarms for the three APRMs</li> </ul> | <p>All three APRM channels associated with the same APRM BYP switch are verified in service using one or both of the following:</p> <ul style="list-style-type: none"> <li>• APRM BYPASS indicating lights are off for the three APRMs and \ or</li> <li>• No EPIC bypassed alarms for the three APRMs</li> </ul> | SAT / UNSAT                         |
| 22.  | Record final APRM readings for adjusted APRMs in Table 1.                                                                                                                                                                                                                                              | Records final APRM readings for adjusted APRMs in Table 1.                                                                                                                                                                                                                                                        | SAT / UNSAT                         |
|      | <b>Evaluator: Terminate JPM at this point</b>                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                   |                                     |

## **HANDOUT**

- A. **The Plant is operating at approximately 100% power.**
- B. **ST-5D, APRM Calibration, is required.**
- C. **The plant has been stable for several hours.**
- D. **3D Monicore is available.**

**"The CRS directs you to The CRS directs you to perform ST-5D."**



**ENTERGY NUCLEAR NORTHEAST  
JOB PERFORMANCE MEASURE**

|                                                                                                                |                                                                      |                                                                                                |
|----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| <u>S/RO</u><br>APPL. TO                                                                                        | <u>NRC S8 LOI-12-2</u><br>JPM NUMBER                                 | TASK TITLE: Initiate Torus Cooling With LPCI Signal Present                                    |
| REV: _____                                                                                                     | DATE: _____                                                          | NRC K/A SYSTEM NUMBER: <u>219000 A4.02 3.7/3.5</u>                                             |
| JAF TASK NUMBER: _____                                                                                         |                                                                      | JAF QUAL STANDARD NUMBER: _____                                                                |
| ESTIMATED COMPLETION TIME: <u>15</u> Minutes                                                                   |                                                                      |                                                                                                |
| SUBMITTED: _____                                                                                               |                                                                      | OPERATIONS REVIEW: _____                                                                       |
| APPROVED: _____<br>~~~~~                                                                                       |                                                                      |                                                                                                |
| CANDIDATE NAME: _____                                                                                          |                                                                      | LOGIN ID: _____                                                                                |
| JPM Completion Location:                                                                                       | <input type="checkbox"/> Simulated<br><input type="checkbox"/> Plant | <input checked="" type="checkbox"/> Performed<br><input checked="" type="checkbox"/> Simulator |
| DATE PERFORMED: _____                                                                                          |                                                                      | TIME TO COMPLETE: _____ Minutes                                                                |
| PERFORMANCE EVALUATION: <input type="checkbox"/> Satisfactory <input type="checkbox"/> Unsatisfactory<br>~~~~~ |                                                                      |                                                                                                |
| COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)                                                           |                                                                      |                                                                                                |
| EVALUATOR: _____<br>SIGNATURE/PRINTED                                                                          |                                                                      |                                                                                                |
| CANDIDATE REVIEW: _____<br>SIGNATURE                                                                           |                                                                      |                                                                                                |
| REVIEWED BY: _____                                                                                             | PROGRAM ADMINISTER                                                   | DOC. COMPLETE: _____                                                                           |

**JOB PERFORMANCE MEASURE  
RECORD AND CHECKLIST**

|                             |                                        |             |                                                 |
|-----------------------------|----------------------------------------|-------------|-------------------------------------------------|
| <u>        S/RO        </u> | <u>        NRC S8 LOI-12-2        </u> | TASK TITLE: | Initiate Torus Cooling With LPCI Signal Present |
| APPL. TO                    | JPM NUMBER                             |             |                                                 |

|                 |                                 |     |                                 |
|-----------------|---------------------------------|-----|---------------------------------|
| Current Update: | <u>                        </u> | By: | <u>                        </u> |
|                 | Date                            |     | Int                             |

|                                                     |                                                 |
|-----------------------------------------------------|-------------------------------------------------|
| Outstanding Items                                   |                                                 |
| <input type="checkbox"/> Technical Review           | <input type="checkbox"/> Additional Information |
| <input type="checkbox"/> Questions and Answers      | <input type="checkbox"/> Validation             |
| <input type="checkbox"/> Procedural Change Required | <input checked="" type="checkbox"/> None        |

Comments:

|                         |                                 |     |                                 |
|-------------------------|---------------------------------|-----|---------------------------------|
| Current Update:         | <u>                        </u> | By: | <u>                        </u> |
|                         | Date                            |     | Int.                            |
| Previous Revision Date: |                                 |     |                                 |

**JOB PERFORMANCE MEASURE  
REQUIRED TASK INFORMATION**

|             |                        |                                                             |
|-------------|------------------------|-------------------------------------------------------------|
| <u>S/RO</u> | <u>NRC S8 LOI-12-2</u> | TASK TITLE: Initiate Torus Cooling With LPCI Signal Present |
| APPL. TO    | JPM NUMBER             |                                                             |

iii. **SAFETY CONSIDERATIONS**

- A. None

jjj. **REFERENCES**

- A. OP-13B, RHR – Containment Control  
B. OP-13C, RHR Service Water

kkk. **TOOLS AND EQUIPMENT**

- A. None

III. **SET UP REQUIREMENTS**

- A. Initialize the simulator to an IC (IC-155) with the following:
- Elevated Torus water temperature
  - LPCI auto-initiation signal sealed in due to high Drywell pressure
  - RPV water level controlled above 10" on fuel zone indications by a system other than RHR A

mmm. **EVALUATOR NOTES**

- A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
- B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
- C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.

nnn. **TASK CONDITIONS**

- A. Torus cooling is required due to elevated torus water temperature.
- B. Drywell pressure is above 2.7 psig.

**\* - CRITICAL STEP**

**ooo. INITIATING CUE**

Inform the candidate, "The CRS directs you to place RHR A in the torus cooling lineup per OP-13B and OP-13C. Maximize torus cooling from this loop of RHR."

|     | STEP                                                                                                                                                                                                                        | STANDARD                                                                           | EVALUATION / COMMENT |
|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|----------------------|
| 1.  | Obtain a controlled copy of procedures OP-13B, RHR – Containment Control, and OP-13C, RHR Service Water.                                                                                                                    | Determines where to obtain a controlled copy of OP-13B and OP-13C.                 | SAT / UNSAT          |
| 2.  | Select the correct section to perform the task.                                                                                                                                                                             | Selects Posted Attachment 1 or Section D.1 OP-13B.                                 | SAT / UNSAT          |
| 3.  | IF a LPCI auto-initiation signal is sealed in, THEN perform the following:                                                                                                                                                  | Determines a LPCI auto-initiation signal is sealed in.                             | SAT / UNSAT          |
| 4.  | IF RPV water level is LESS THAN 10 inches on fuel zone water level indication, AND the EOPs permit diverting LPCI flow, THEN place DW & TORUS SPRAY VLV OVERRIDE OF FUEL ZONE LVL 10A-S18A keylock switch in MANUAL OVERRD. | Determines RPV water level is above 10 inches on fuel zone water level indication. | SAT / UNSAT          |
| *5. | Place SPRAY CNTRL 10A-                                                                                                                                                                                                      | Places SPRAY CNTRL 10A-S17A switch to MANUAL, then                                 | <b>CRITICAL STEP</b> |

|     | STEP                                                                                                                                                    | STANDARD                                                                                                                                                                                            | EVALUATION / COMMENT                |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|     | S17A switch to MANUAL, spring return to normal.                                                                                                         | releases to normal.                                                                                                                                                                                 | SAT / UNSAT                         |
| 6.  | Verify white SPRAY PERM 10A-DS67A light is on.                                                                                                          | Observes white SPRAY PERM 10A-DS67A light is on.                                                                                                                                                    | SAT / UNSAT                         |
| 7.  | Ensure at least one of the following RHR pumps is running: <ul style="list-style-type: none"> <li>• RHR PMP 10P-3A</li> <li>• RHR PMP 10P-3C</li> </ul> | Observes red light on, green light off for: <ul style="list-style-type: none"> <li>• RHR PMP 10P-3A</li> <li>• RHR PMP 10P-3C</li> </ul>                                                            | SAT / UNSAT                         |
| *8. | Open RHR TEST TORUS CLG & SPRAY 10MOV-39A.                                                                                                              | Places RHR TEST TORUS CLG & SPRAY 10MOV-39A control switch to OPEN.                                                                                                                                 | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *9. | Throttle RHR TEST & TORUS CLG 10MOV-34A to establish desired flow.                                                                                      | Places RHR TEST & TORUS CLG 10MOV-34A control switch to OPEN.<br><br>Subsequently places RHR TEST & TORUS CLG 10MOV-34A control switch to OPEN and/or CLOSE as necessary to establish desired flow. | <b>CRITICAL STEP</b><br>SAT / UNSAT |

|     | STEP                                                                                                                                                                                                                    | STANDARD                                                                                                                                                                                                    | EVALUATION / COMMENT |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| 10. | WHEN RHR Loop A flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A.                                                                                                                                    | Observes MIN FLOW VLV 10MOV-16A green light on, red light off.                                                                                                                                              | SAT / UNSAT          |
| 11. | IF RHR Loop A condensate transfer keep-full is in service, AND RHR Loop A pressure is LESS THAN condensate transfer pressure, THEN close 10RHR-274 (RHR loop A containment spray keep-full cond xfer connection valve). | Contacts plant operator to determine if RHR Loop A condensate transfer keep-full is in service.<br><br><b>EVALUATOR CUE:</b> Report that RHR Loop A condensate transfer keep-full is <b>NOT</b> in service. | SAT / UNSAT          |

|      | STEP                                                                                                                                                                                | STANDARD                                                                                                                                                                                                                   | EVALUATION / COMMENT                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| 12.  | Establish RHRWSW flow per OP-13C, if desired.                                                                                                                                       | Selects Posted Attachment 1 or Section D.1 of OP-13C.                                                                                                                                                                      | SAT / UNSAT                         |
| 13.  | Verify one of the following alarms is clear: <ul style="list-style-type: none"> <li>Annunciator 09-4-3-4 RHRWSW A OR B DISCH LINE NOT FULL</li> <li>EPIC-D-134 10LS-105A</li> </ul> | Observes either of the following: <ul style="list-style-type: none"> <li>Annunciator 09-4-3-4 RHRWSW A OR B DISCH LINE NOT FULL is clear</li> <li>EPIC-D-134 10LS-105A is clear</li> </ul>                                 | SAT / UNSAT                         |
| *14. | Start one of the following RHRWSW pumps: <ul style="list-style-type: none"> <li>RHRWSW PMP 10P-1A</li> <li>RHRWSW PMP 10P-1C</li> </ul>                                             | Rotates RHRWSW PMP 10P-1A or 10P-1C control switch to START.                                                                                                                                                               | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *15. | Throttle RHRWSW DISCH VLV FROM HX A 10MOV-89A to establish 2500 to 4000 gpm.                                                                                                        | Rotates RHRWSW DISCH VLV FROM HX A 10MOV-89A control switch to OPEN.<br><br>Subsequently rotates RHRWSW DISCH VLV FROM HX A 10MOV-89A control switch to OPEN and/or CLOSE as necessary to establish 2500 to 4000 gpm flow. | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *16. | Start the second RHRWSW pump if desired.                                                                                                                                            | Rotates RHRWSW PMP 10P-1A or 10P-1C control switch to START.                                                                                                                                                               | <b>CRITICAL STEP</b>                |

|                                                            | STEP                                                                                       | STANDARD                                                                                                                                                | EVALUATION / COMMENT                |
|------------------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
|                                                            |                                                                                            | <b>EVALUATOR CUE:</b> If candidate asks if second RHRSW pump start is desired, direct them to maximize torus cooling from this loop of RHR.             | SAT / UNSAT                         |
| *17.                                                       | Throttle RHRSW DISCH VLV FROM HX A 10MOV-89A to establish 2500 to 4000 gpm per RHRSW pump. | Rotates RHRSW DISCH VLV FROM HX A 10MOV-89A control switch to OPEN and/or CLOSE as necessary to establish 2500 to 4000 gpm flow <b>per RHRSW pump</b> . | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| *18.                                                       | Close HX A BYP VLV 10MOV-66A.                                                              | Rotates HX A BYP VLV 10MOV-66A control switch to CLOSE.                                                                                                 | <b>CRITICAL STEP</b><br>SAT / UNSAT |
| <b><u>EVALUATOR:</u></b> Terminate the task at this point. |                                                                                            |                                                                                                                                                         |                                     |
|                                                            |                                                                                            |                                                                                                                                                         |                                     |



## **HANDOUT**

- **Torus cooling is required due to elevated torus water temperature.**
- **Drywell pressure is above 2.7 psig.**

**The CRS directs you to place RHR A in the torus cooling lineup per OP-13B and OP-13C. Maximize torus cooling from this loop of RHR.**

**JAMES A. FITZPATRICK NUCLEAR POWER PLANT**

**LOI-12-2 NRC EXAMINATION SCENARIO 1**

**TITLE:** **SCENARIO 1** **LOI-12-2 NRC EXAMINATION**

**SCENARIO NUMBER:** **NRC 1**

**PATH:** **STAND ALONE**

**Validation:** \_\_\_\_\_ **Training:** \_\_\_\_\_ **Operations:** \_\_\_\_\_

|     | CANDIDATES |
|-----|------------|
| CRS |            |
| ATC |            |
| BOP |            |

## RECORD OF CHANGES

[illegible]

A. **TITLE:** LOI-12-2 NRC EXAMINATION SCENARIO 1

B. **SCENARIO SETUP:**

1. IC-156

2. Special Instructions:

- a. The Plant is operating at approximately 100% power.
- b. APRM A is bypassed due to erratic indication.
- c. CRD pump A is out of service for maintenance.
- d. Feedwater level control is selected to level column A, and is to be swapped to level column B.
- e. Reactor power is to be lowered to 95% with recirculation flow in preparation for Turbine Valve testing.
- f. Ensure LOI Pull Sheets Binder is staged at the 09-5 Panel (CRAM Rods at 08)

3. Preset Conditions:

- a. Preset, M:RD06:A CRD Hydraulic Pump Trip A
- b. Preset, OL:RD ZLO3BS3A(1) CRD Feed Pump Green Light, off
- c. Preset, R:EP04 Lake Ontario Water Temperature, 48
- d. TRIGGER 1, M:RR10:A RWR MG Set A Flow Controller Failure, 52%, Rmp=60s
- e. Preset, M:SW15 Service Water Pump A Auto Start Failure
- f. TRIGGER 2, M:SW05:B Service Water Pump B Trip
- g. TRIGGER 3, M:FW19:A Condensate PMP 33P-8A Trip
- h. TRIGGER 4, M:FW19:B Condensate PMP 33P-8B Trip
- i. TRIGGER 4, M:FW19:C Condensate PMP 33P-8C Trip
- j. Preset, M:RP01:A Reactor Protection System Automatic Scram Failure
- k. Preset, M:RP09 ARI Fails to Actuate
- l. TRIGGER 5, M:RR15:A Coolant (A) Leakage Inside Primary Containment, 25%, Ramp=12:00
- m. TRIGGER 20, R:MS22, Mn Steam To Rblr
- n. Preset, M:HP07 HPCI Valve MOV-19 Fails to Auto Open
- o. Preset, OS:HP ZDI23AS5 HPCI Injection Valve Control Switch, close
- p. Event Trigger 1, RWR Pump A Flow, rrfpa(1)<4635

4. Consumable Forms and Procedures:

- ◆ OP-2A Sections G.29 and G.40
- ◆ Reactivity Maneuvering sheets
- ◆ AOP-1
- ◆ AOP-8
- ◆ AOP-10
- ◆ AOP-32
- ◆ AOP-39
- ◆ AOP-41

**C. SCENARIO SUMMARY:**

The scenario will begin with the plant operating at 100% Power. The Crew will begin by swapping Feedwater level control from level column A to B per OP-2A. Once this is complete, the Crew will begin lowering Reactor power to 95% in preparation for Turbine valve testing.

When RWR pump A flow lowers to approximately 4250 gpm, the RWR A speed controller will fail such that loop flow abruptly rises, and then lowers. Pump A flow will stabilize significantly below Pump B flow. The Crew will lockup the RWR pump A scoop tube and take action to restore RWR flow mismatch to an acceptable level.

Service Water pump B will trip and Service Water pump A will fail to auto-start. The Crew will execute AOP-10 and manually start Service Water pump A.

Condensate pump A will trip. The Crew will execute AOP-41. The Crew will enter RAP-7.3.16 and OP-65 to lower Reactor power within the capacity of the remaining Condensate pumps. As power is lowered, the Crew will transfer Reboiler steam supply, secure a Condensate Booster pump and may secure a Circulating Water pump.

Once plant conditions are stable, the remaining Condensate pumps will trip. Reactor water level will lower due to the complete loss of Condensate and Feedwater, however automatic scrams and ARI will fail to insert control rods. The Crew will manually scram the Reactor to insert control rods. AOP-1 will be executed to stabilize the plant after the scram.

A coolant leak will develop inside Primary Containment. The Crew will execute AOP-39, EOP-2, and EOP-4. Containment Sprays will be required to mitigate degrading containment parameters. The HPCI injection valve, MOV-19, will fail to automatically open and will not be able to be manually opened. Combined with the loss of all Feedwater, this will limit high pressure injection capacity to less than the flow rate of the coolant leak. Reactor water level will continue to lower. An RPV Blowdown will be required based on low Reactor water level. As Reactor pressure lowers, the Crew will restore and maintain Reactor water level with low pressure systems.

The Scenario will be terminated when all control rods are inserted, the RPV Blowdown has been performed, and Reactor water level is being controlled above TAF with low pressure injection systems.

#### Shift Turnover

The Plant is operating at approximately 100% power.

APRM A is bypassed due to erratic indication.

CRD pump A is out of service for maintenance.

Feedwater level control is selected to level column A following calibrations affecting level column B.

When you take the shift, complete the following:

1. Swap Feedwater level control from level column A to level column B per OP-2A. Due to previous Feedwater level control issues, place Feedwater level control in MANUAL during the swap and restore Feedwater level control to AUTOMATIC after the swap.
2. Then, lower Reactor power to 95% with recirculation flow in preparation for Turbine Valve testing, per OP-65 and RAP-7.3.16.

| Critical Tasks/Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Critical Task #1: Given the need for a Reactor scram and failure of automatic actions to insert control rods, the crew will manually scram the Reactor, in accordance with AOP-1.</p> <p>Critical Task #2: Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain RPV water level above the Top of Active Fuel (TAF), the crew will initiate an RPV Blowdown before RPV water level lowers below -19", in accordance with EOP-2.</p> |

| EVENT NO. | EVENT SEQUENCE                                                        |
|-----------|-----------------------------------------------------------------------|
| 1.        | Swap Feedwater Level Control from Level Column A to B (Normal: BOP)   |
| 2.        | Lower Reactor Power to 95% with Recirculation Flow (Reactivity: BOP)  |
| 3.        | RWR MG A Speed Controller Failure Low (Instrument: BOP)               |
| 4.        | Service Water Pump Trip with Failure to Auto-Start (Component: BOP)   |
| 5.        | Trip of Condensate Pump A (Component: All)                            |
| 6.        | Trip of Condensate Pumps B and C (Component: All)                     |
| 7.        | Automatic Scram and ARI Fail to Insert Control Rods (Instrument: ATC) |
| 8.        | Coolant Leak Inside Containment (Major: All)                          |
| 9.        | HPCI Injection Valve Fails to Open (Component: All)                   |

**D. TERMINATION CUES:**

- All control rods are inserted
- RPV Blowdown has been performed
- Reactor water level is being controlled above TAF with low pressure injection systems



| INSTRUCTOR ACTIVITY                                                                | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                   | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Simulator in RUN<br>Recorder and Alarm Power<br>ON<br>Simulator Checklist Complete |           |                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |
| Provide Turnover (Attach. 1)                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                                             |                     |
| After the shift turnover, allow<br>no more than five minutes for<br>panel walkdown | All       | <ul style="list-style-type: none"> <li>Walkdown the control panels and assume the watch</li> </ul>                                                                                                                                                                                                                                                                                                                          | SAT / UNSAT / NA    |
|                                                                                    | SRO       | <ul style="list-style-type: none"> <li>Perform Crew Brief</li> <li>Direct BOP to swap Feedwater level columns per OP-2A</li> <li>Provide oversight</li> </ul>                                                                                                                                                                                                                                                               |                     |
|                                                                                    | BOP       | <ul style="list-style-type: none"> <li>Obtain OP-2A Section G.29</li> <li>Place Feedwater level control in MANUAL per Section G.40.2               <ul style="list-style-type: none"> <li>Balance RX WTR LVL CNTRL 06LC-83 controller</li> <li>Place RX WTR LVL CNTRL 06LC-83 controller in MAN</li> </ul> </li> <li>Place RX WTR LVL COLUMN SEL 06-S1 switch in B-LEVEL</li> <li>Observe RPV water level stable</li> </ul> | SAT / UNSAT / NA    |
|                                                                                    | BOP cont. | <ul style="list-style-type: none"> <li>Place Feedwater level control in AUTO per Section G.40.7               <ul style="list-style-type: none"> <li>Balance RX WTR LVL CNTRL 06LC-83 controller by adjusting SP ADJUST knob</li> </ul> </li> </ul>                                                                                                                                                                         |                     |

| INSTRUCTOR ACTIVITY                                                                                                                     | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                     | COMMENTS/EVALUATION |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                         |          | <ul style="list-style-type: none"> <li>Place RX WTR LVL CNTRL 06LC-83 controller in BAL               <ul style="list-style-type: none"> <li></li> </ul> </li> </ul>                                                                                                                                                                          |                     |
|                                                                                                                                         | SRO      | <ul style="list-style-type: none"> <li>Direct ATC to lower power to 95% with Recirc flow</li> <li>Provide oversight for reactivity manipulation</li> </ul>                                                                                                                                                                                    |                     |
| <b>Note:</b><br>Trigger 1 automatically inserts the RWR A speed controller failure low when RWR loop A flow is approximately 45.2 Kgpm. | BOP      | <ul style="list-style-type: none"> <li>Lower Recirc flow alternately with RWR MG A(B) SPEED CNTRL</li> <li>Monitor APRMs, CTP, Recirc flow, Reactor water level</li> <li>Recognize / report RWR A speed controller is malfunctioning</li> </ul>                                                                                               | SAT / UNSAT / NA    |
| <b>Note:</b><br>The decision to restore loop flow mismatch may be made from OP-27 precaution C.2.14 or Tech Specs.                      | SRO      | <ul style="list-style-type: none"> <li>Acknowledge report</li> <li>Direct lock-up of RWR A scoop tube per OP-27 Section G.6</li> <li>Enter AOP-8 (Loss or Reduction in Reactor Coolant Flow)</li> <li>Enter AOP-32 (Unexplained/Unanticipated Reactivity Change)</li> <li>Direct lowering RWR B flow to restore loop flow mismatch</li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                          | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                        | COMMENTS/EVALUATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Role Play:</b><br>If asked as Reactor<br>Engineering how to respond,<br>recommend restoring loop<br>flow mismatch by rapidly<br>lowering RWR loop B flow. |          |                                                                                                                                                                                                                                                                                                                                                                                  |                     |
|                                                                                                                                                              | BOP      | <ul style="list-style-type: none"> <li>Place RWR A SCOOP TUBE control switch to TRIP</li> <li>Place SCOOP TUBE A AUTO UNLOCK control switch in ON</li> <li>Lower RWR B flow to restore loop flow mismatch less than or equal to either 5% of rated core flow (if &gt;70% flow) or 10% of rated core flow (if &lt;70% flow)</li> </ul>                                            | SAT / UNSAT / NA    |
|                                                                                                                                                              | ATC      | <ul style="list-style-type: none"> <li>Monitor for Thermal Hydraulic Instabilities</li> <li>Monitor Feedwater response</li> </ul>                                                                                                                                                                                                                                                | SAT / UNSAT / NA    |
| <b>On Lead Examiner Cue:</b><br><b>ACTIVATE TRIGGER 2</b><br>Service Water pump B trips<br>Service Water pump A fails to<br>auto-start                       | BOP      | <ul style="list-style-type: none"> <li>Recognize / report annunciators:               <ul style="list-style-type: none"> <li>09-6-2-13, SERV WTR PMP 46P-1B OVERLOAD OR TRIP</li> <li>09-6-2-34, SERV WTR HDR PRESS LO</li> </ul> </li> <li>Recognize / report trip of Service Water pump B</li> <li>Recognize / report failure of Service Water pump A to auto-start</li> </ul> | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                       | COMMENTS/EVALUATION |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                                                                                                                                    | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge reports</li> <li>• Enter AOP-10 (Loss of Service Water Cooling)</li> <li>• Direct start of Service Water pump A</li> </ul>                                                                                                                                                 |                     |
| <b>Booth Operator:</b><br>If requested as NPO, maintenance, etc., wait 3 minutes and then report that Service Water pump B breaker has tripped on overcurrent, but there are no other abnormal indications at the Service Water pumps or breakers. | BOP       | <ul style="list-style-type: none"> <li>• Start Service Water pump A</li> <li>• Review AOP-10 actions for degraded Service Water</li> </ul>                                                                                                                                                                                      | SAT / UNSAT / NA    |
| <b>On Lead Examiner Cue: ACTIVATE TRIGGER 3</b><br>Condensate pump A trips                                                                                                                                                                         | BOP / ATC | <ul style="list-style-type: none"> <li>• Recognize / report annunciator 09-6-3-1, COND PMP 33P-8A OVERLOAD OR TRIP</li> <li>• Recognize / report trip of Condensate pump A</li> <li>• Monitor Condensate and Feedwater pressures and flows</li> <li>• Monitor Reactor water level, Feedwater flow, and Reactor power</li> </ul> | SAT / UNSAT / NA    |
| <b>Booth Operator:</b><br>If requested as NPO, maintenance, etc., wait 3 minutes and then report that Condensate pump A breaker has tripped on overcurrent and                                                                                     | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge report</li> <li>• Enter AOP-41 (Feedwater Malfunction)</li> <li>• Direct power reduction to approximately 65% power per OP-65 and RAP-7.3.16</li> </ul>                                                                                                                    |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                          | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p>the motor is hot to the touch.</p> <p>Crew may direct RWR A flow locally reduced. If directed to lower RWR A flow, use REMOTE RR07 "RECIRC PUMP A MIG SCOOP TUBE MANUAL ADJUSTMENT".</p>                                  |          | <ul style="list-style-type: none"> <li>• Provide oversight for reactivity manipulation</li> <li>• Direct Reboiler steam supply swapped to Main Steam per OP-72 Section G</li> <li>• Direct securing one Condensate Booster pump per OP-3 Section F</li> <li>• May direct securing one Circulating Water pump per OP-4 Section G</li> </ul>                                                                                                                                                                                                                          |                     |
| <p><b>Note:</b></p> <p>Due to RWR A speed control malfunction, use of recirculation flow for power reduction is limited.</p>                                                                                                 | ATC      | <ul style="list-style-type: none"> <li>• Lower Reactor power with recirculation flow, as available</li> <li>• Insert CRAM rods</li> <li>• Monitor Reactor power</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                          | SAT / UNSAT / NA    |
| <p><b>Role Plays:</b></p> <p>When dispatched to swap Reboiler steam supply, wait 1 minute, insert Trigger 20, then report task completion.</p> <p>When dispatched to check 31PCV-100 position, report 31PCV-100 is open.</p> | BOP      | <ul style="list-style-type: none"> <li>• Swap Reboiler steam supply to Main Steam per OP-72 Section G.4.1: <ul style="list-style-type: none"> <li>◦ Direct operator to place Reboiler Source Selector Switch in MAIN STEAM TO REBOILER</li> <li>◦ Verify open 31MOV-153</li> <li>◦ Direct operator to verify open 31PCV-100</li> <li>◦ Verify closed 31MOV-145A</li> <li>◦ Verify closed 31MOV-145B</li> </ul> </li> <li>• Secure one Condensate Booster pump per OP-3 Section F.1</li> <li>• May secure one Circulating Water pump per OP-4 Section G.5</li> </ul> | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                                                                                                                              | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                           | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>On Lead Examiner Cue:<br/>ACTIVATE TRIGGER 4</b><br/>Trip of Condensate pumps B and C</p>                                                                                                                                                                                                                                                                  | BOP / ATC | <ul style="list-style-type: none"> <li>• Recognize / report trip of Condensate pumps B and C</li> <li>• May recognize / report failure of automatic Reactor scram to insert control rods</li> </ul>                                                                                                                                                                                                                                                 | SAT / UNSAT / NA    |
| <p><b>Note:</b><br/>Preset malfunctions prevent automatic Reactor scram and ARI from inserting control rods.</p> <p><b>Note:</b><br/>RPV water level will likely go below 126.5" due to loss of Feedwater and scram. This will cause both HPCI and RCIC initiation signals. Preset malfunctions will cause the HPCI injection valve, MOV-19, to fail closed.</p> | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge report</li> <li>• Direct Reactor scram</li> <li>• Enter AOP-1 (Reactor Scram)</li> <li>• Enter EOP-2 (RPV Control) on low RPV water level</li> <li>• Direct RPV water level restored and maintained 177-222.5" using CRD and RCIC</li> <li>• Direct RPV pressure controlled 900-1000 psig using Turbine Bypass Valves</li> <li>• Enter AOP-15 (Isolation Verification and Recovery)</li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                         | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | COMMENTS/EVALUATION                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Critical Task #1</b>                                                                                                                                                                                                                     |          | Given the need for a Reactor scram and failure of automatic actions to insert control rods, the crew will manually scram the Reactor, in accordance with AOP-1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Pass / Fail</b>                          |
| <b>Critical Task #1 Standard:</b>                                                                                                                                                                                                           |          | All control rods inserted by:<br>Depressing manual Scram pushbuttons<br>Or<br>Placing Mode Switch to Shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                             |
|                                                                                                                                                                                                                                             | ATC      | <ul style="list-style-type: none"> <li>Depress manual Scram pushbuttons</li> <li>Place Mode Switch to Shutdown</li> <li>Report all control rods have inserted</li> <li>Enter AOP-1               <ul style="list-style-type: none"> <li>Fully insert IRMs and SRMs</li> <li>Observe Reactor power downscale on APRMs</li> <li>Observe SDIV vent and drain valves closed</li> <li>Ensure Main Turbine is tripped</li> <li>Verify 4 KV loads transfer to reserve power</li> <li>Transfer APRM/IRM recorders to IRMs</li> <li>Down-range IRMs</li> <li>Monitor Reactor pressure control on the Turbine Bypass Valves</li> </ul> </li> </ul> | SAT / UNSAT / NA<br><b>Critical Task #1</b> |
| <b>Booth Operator:</b><br>If requested as NPO, maintenance, etc. to investigate HPCI injection valve, wait 3 minutes and then report that there is an acid odor near the motor and the breaker is tripped.<br>If requested to manually open | BOP      | <ul style="list-style-type: none"> <li>Enter AOP-1               <ul style="list-style-type: none"> <li>Operate RCIC per OP-19 Section D</li> <li>Recognize / report failure of HPCI injection valve to open</li> <li>May attempt to manually open HPCI injection valve (23MOV-19)</li> <li>Trips HPCI</li> <li>May initiate SLC injection, as directed</li> </ul> </li> </ul>                                                                                                                                                                                                                                                           | SAT / UNSAT / NA                            |

| INSTRUCTOR ACTIVITY                                                                                  | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                     | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| HPCI injection valve, wait 2 minutes and report the valve is stuck closed.                           |           | <ul style="list-style-type: none"> <li>Verify Group 2 isolation per AOP-15</li> </ul>                                                                                                                                                                                                         |                     |
| <b>On Lead Examiner Cue:</b><br><b>ACTIVATE TRIGGER 5</b><br>Coolant leak inside Primary Containment | BOP / ATC | <ul style="list-style-type: none"> <li>Recognize / report degrading Primary Containment conditions (leakage, temperature, pressure).</li> </ul>                                                                                                                                               | SAT / UNSAT / NA    |
|                                                                                                      | SRO       | <ul style="list-style-type: none"> <li>Acknowledge report</li> <li>Enter AOP-39 (Loss of Coolant)</li> <li>Direct Control Room and Relay Room Ventilation isolated per OP-55B Section G within 30 minutes</li> <li>Direct TSC filtered ventilation started per Section D of OP-59B</li> </ul> |                     |



| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COMMENTS/EVALUATION |
|---------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     |           | <p>within 60 minutes</p> <ul style="list-style-type: none"> <li>• Re-enter EOP-2 (RPV Control) on high Drywell pressure</li> <li>• Enter EOP-4 (Primary Containment Control) on high Drywell pressure</li> <li>• May direct Core Spray and RHR injection Terminated and Prevented per EP-2.</li> <li>• When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 15 psig, direct initiation of Torus Spray</li> <li>• When Torus pressure exceeds 15 psig: <ul style="list-style-type: none"> <li>○ Verify Recirculation pumps tripped</li> <li>○ Direct trip of Drywell cooling fans</li> <li>○ Direct initiation of Drywell Spray</li> </ul> </li> </ul>                           |                     |
|                     | BOP / ATC | <ul style="list-style-type: none"> <li>• Isolate Control Room and Relay Room Ventilation per OP-55B Section G.1 <ul style="list-style-type: none"> <li>○ Place Control Room Ventilation ISOL &amp; PURGE CNTRL switch in ISOL</li> <li>○ Verify closed: <ul style="list-style-type: none"> <li>○ 70MOD-109</li> <li>○ 70MOD-105</li> <li>○ 70MOD-107</li> <li>○ 70MOD-108</li> </ul> </li> <li>○ Verify open: <ul style="list-style-type: none"> <li>○ 70MOD-110A</li> <li>○ 70MOD-110B</li> </ul> </li> <li>○ Verify one Control Room Emergency Air Supply fan running with discharge damper open</li> <li>○ Close 70DMPR-105</li> <li>○ Ensure closed all access doors to Control Room</li> </ul> </li> </ul> | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY | POSITION           | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COMMENTS/EVALUATION |
|---------------------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     |                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |
|                     | BOP / ATC<br>cont. | <ul style="list-style-type: none"> <li>• Isolate Relay Room Ventilation per OP-56 Section G               <ul style="list-style-type: none"> <li>○ Place Relay Room Ventilation control switches in ISOL:                   <ul style="list-style-type: none"> <li>○ ISOL &amp; PURGE CNTRL A</li> <li>○ ISOL &amp; PURGE CNTRL B</li> </ul> </li> <li>○ Verify closed:                   <ul style="list-style-type: none"> <li>○ 70MOV-105</li> <li>○ 70MOV-106</li> <li>○ 70MOD-115</li> </ul> </li> <li>○ Verify open:                   <ul style="list-style-type: none"> <li>○ 70MOD-104A</li> <li>○ 70MOD-104B</li> </ul> </li> <li>○ Ensure closed all access doors to Relay Room</li> </ul> </li> </ul> | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY | POSITION           | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | COMMENTS/EVALUATION |
|---------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     | BOP / ATC          | <ul style="list-style-type: none"> <li>• Terminate and Prevent injection from Core Spray and RHR as follows:<br/> <u>Core Spray</u> <ul style="list-style-type: none"> <li>◦ Core Spray Loop A <ul style="list-style-type: none"> <li>◦ Place 14MOV-11A AUTO ACTUATION BYPASS SW</li> <li>◦ 14A-S16A switch in bypass</li> <li>◦ Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on</li> <li>◦ Ensure closed OUTBD INJ VLV 14MOV-11A</li> <li>◦ Ensure PMP 14P-1A is stopped</li> </ul> </li> <li>◦ Core Spray Loop B <ul style="list-style-type: none"> <li>◦ Place 14MOV-11B AUTO ACTUATION BYPASS SW</li> <li>◦ 14A-S16B switch in bypass</li> <li>◦ Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on</li> <li>◦ Ensure closed OUTBD INJ VLV 14MOV-11B</li> <li>◦ Ensure PMP 14P-1B is stopped</li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA    |
|                     | BOP / ATC<br>cont. | <u>RHR</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | COMMENTS/EVALUATION |
|---------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     |           | <ul style="list-style-type: none"> <li>○ RHR Loop A <ul style="list-style-type: none"> <li>○ Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A</li> <li>○ Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on</li> <li>○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27A</li> <li>○ Ensure RHR Loop A pumps which are not required to be running are stopped</li> <li>○ Direct NPO to rotate Timers fully counterclockwise</li> </ul> </li> <li>○ RHR Loop B <ul style="list-style-type: none"> <li>○ Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B</li> <li>○ Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on</li> <li>○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27B</li> <li>○ Ensure RHR Loop B pumps which are not required to be running are stopped</li> <li>○ Direct NPO to rotate Timers fully counterclockwise</li> </ul> </li> </ul> |                     |
|                     | BOP / ATC | <ul style="list-style-type: none"> <li>• Initiate Torus Spray per OP-13B Posted Attachment 2 <ul style="list-style-type: none"> <li>○ Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL</li> <li>○ Verify white SPRAY PERM 10A-DS67A(B) light is on</li> <li>○ Ensure available RHR pumps in RHR Loop A(B) are running</li> <li>○ Open RHR TEST TORUS CLG &amp; SPRAY 10MOV-39A(B)</li> <li>○ Throttle TORUS SPRAY INBD VLV 10MOV-38A(B) to</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                            | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                   | POSITION        | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | COMMENTS/EVALUATION |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                                                                                                                       |                 | <p>establish desired torus spray flow rate</p> <ul style="list-style-type: none"> <li>○ When RHR Loop A(B) flow is greater than 1500 gpm, ensure closed MIN FLOW VLV 10-MOV-16A(B)</li> <li>○ Throttle RHR TEST &amp; TORUS CLG 10MOV-34A(B) to divert excess flow to the torus to maintain at least 6500 gpm RHR Loop A(B) flow with one RHR pump operating or at least 13000 gpm RHR Loop A(B) flow with two RHR pumps operating</li> <li>○ Establish RHRSW flow and temperature control</li> </ul> <ul style="list-style-type: none"> <li>• Establish RHRSW flow per OP-13C Posted Attachment 1</li> </ul> <ul style="list-style-type: none"> <li>○ Start one RHRSW pump</li> <li>○ Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm</li> <li>○ Start second RHRSW pump in selected loop</li> <li>○ RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm</li> </ul> |                     |
| <p><b>Note:</b><br/>When RPV water level lowers below 59.5", Torus and Drywell Spray are automatically secured as LPCI receives an initiation signal. The SRO will direct Torus and Drywell Spray re-established at a later time.</p> | BOP / ATC cont. | <ul style="list-style-type: none"> <li>○ If drywell or torus sprays are in service, then establish 4000 gpm per RHRSW pump</li> <li>○ Close HX A(B) BYP VLV 10MOV-66A(B)</li> </ul> <ul style="list-style-type: none"> <li>• Initiate Drywell Spray per OP-13B Posted Attachment 3 <ul style="list-style-type: none"> <li>○ Ensure RWR pumps are tripped</li> <li>○ Ensure Drywell cooling fans are tripped</li> <li>○ Verify Drywell temperature and pressure are within the Drywell Spray Initiation Limit</li> <li>○ Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL</li> <li>○ Verify white SPRAY PERM 10A-DS67A(B) light is on</li> <li>○ Ensure available RHR pumps in RHR Loop A(B) are</li> </ul> </li> </ul>                                                                                                                                                                                                      | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY     | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | COMMENTS/EVALUATION |
|-------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                         |          | <p>running</p> <ul style="list-style-type: none"> <li>Open DW SPRAY OUTBD VLV 10MOV-26A(B)</li> <li>Throttle DW SPRAY INBD VLV 10MOV-31A(B) to establish desired Drywell spray flow rate</li> <li>When RHR Loop A(B) flow is greater than 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A(B)</li> <li>Establish RHRSW flow and temperature control per OP-13C Posted Attachment 1 (see above)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                               |                     |
|                         | SRO      | <ul style="list-style-type: none"> <li>Determine available Group 1 high pressure injection systems (CRD, RCIC) are not capable of maintaining RPV water level</li> <li>Direct injection of SLC</li> <li>Determine RPV water level cannot be maintained above 0" (TAF)</li> <li>Transition to the Alternate RPV Level Control leg of EOP-2</li> <li>Direct ADS overridden</li> <li>Wait until RPV water level drops to 0" TAF</li> <li>Determine RPV injection source lined up and running</li> <li>Determine RPV water level cannot be restored and maintained above -19"</li> <li>Direct open 7 ADS valves</li> <li>Direct RPV water level restored and maintained 177 to 222.5" using available injection systems</li> <li>Transition back to EOP-2 normal RPV level leg</li> </ul> |                     |
| <b>Critical Task #2</b> |          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Pass / Fail</b>  |



**Termination Criteria:**

- All control rods are inserted
- RPV Blowdown has been performed
- Reactor water level is being controlled above TAF with low pressure injection systems



ATTACHMENT 1

| A. Shift Turnover                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The Plant is operating at approximately 100% power.</p> | <p>APRM A is bypassed due to erratic indication.</p>                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>CRD pump A is out of service for maintenance.</p>       | <p>Feedwater level control is selected to level column A following calibrations affecting level column B.</p>                                                                                                                                                                                                                                                                                                                                     |
| <p>When you take the shift, complete the following:</p>    | <ol style="list-style-type: none"><li>1. Swap Feedwater level control from level column A to level column B per OP-2A. Due to previous Feedwater level control issues, place Feedwater level control in MANUAL during the swap and restore Feedwater level control to AUTOMATIC after the swap.</li><li>2. Then, lower Reactor power to 95% with recirculation flow in preparation for Turbine Valve testing, per OP-65 and RAP-7.3.16.</li></ol> |

**JAMES A. FITZPATRICK NUCLEAR POWER PLANT**

**LOI-12-2 NRC EXAMINATION SCENARIO 2**

**TITLE:** **SCENARIO 2** **LOI-12-2 NRC EXAMINATION**

**SCENARIO NUMBER:** **NRC 2**

**PATH:** **STAND ALONE**

**Validation:** \_\_\_\_\_ **Training:** \_\_\_\_\_ **Operations:** \_\_\_\_\_

|     | CANDIDATES |
|-----|------------|
| CRS |            |
| ATC |            |
| BOP |            |

## RECORD OF CHANGES

[illegible]

B. **TITLE:** LOI-12-2 NRC EXAMINATION SCENARIO 2

B. **SCENARIO SETUP:**

2. IC-157

4. Special Instructions:

- a. The Plant is operating at approximately 85% power.
- b. RCIC is out of service for maintenance.
- c. Reactor power is to be raised to 100% with Recirculation flow.

5. Preset Conditions:

- a. Preset, M:RC03 RCIC System Turbine Trip
- b. Preset, R:EP04 Lake Ontario Water Temperature, 48
- c. TRIGGER 1, M:RD06:B CRD Hydraulic Pump Trip (B)
- d. TRIGGER 2, M:TU04E Main Turbine High Bearing #5 Vibration, Initial=21%, Final=27%, Ramp=5:00
- e. TRIGGER 2, M:TU04F Main Turbine High Bearing #6 Vibration, Initial=21%, Final=28%, Ramp=5:00
- f. TRIGGER 3, M:MC01 Main Condenser Air In Leakage, 30%
- g. Preset, M:RP01:AA RPS Automatic Scram Failure A Side Only
- h. Preset, M:RP01:BA RPS Manual Scram Failure A Side Only
- i. Preset, M:RP09 ARI Fails to Actuate
- j. TRIGGER 4, M:SL03:A SBLC pump A Relief 11-RV-39A Lifts
- k. TRIGGER 5, M:SL03:B SBLC pump B Relief 11-RV-39B Lifts
- l. TRIGGER 6, M:EG01 Main Generator Trip
- m. TRIGGER 7, M:TC04:A Turbine Bypass Valve Failure (A), 0%
- n. TRIGGER 7, M:TC04:B Turbine Bypass Valve Failure (B), 0%, Delay=15 sec
- o. TRIGGER 7, M:TC04:C Turbine Bypass Valve Failure (C), 0%, Delay=30 sec
- p. TRIGGER 25, M:IA01 Vent Scram Air Header, 100%, Ramp=30 sec
- q. Event Trigger 4, SLC Pump A Running, sl:pumpona==1
- r. Event Trigger 5, SLC Pump B Running, sl:pumponb==1
- s. Event Trigger 6, APRM Less than 42%, nmaprmfx(1)<0.42
- t. Event Trigger 7, APRM Less than 24%, nmaprmfx(1)<0.24

5. Consumable Forms and Procedures:

- ◆ Reactivity Maneuvering sheets
- ◆ AOP-1, AOP-31, AOP-66A, OP-69

C. **SCENARIO SUMMARY:**

The scenario will begin with the plant operating at 85% Power. The Crew will begin by raising Reactor power to 100% with Recirculation flow. During the power ascension, CRD pump B will trip. The Crew will enter AOP-69 and start CRD pump A.

As Reactor power is being raised, Turbine vibrations will develop. The Crew will enter AOP-66 to address the vibrations. The vibrations will subside as Reactor power is lowered, however the vibrations will have caused damage resulting in Main Condenser air in-leakage. Main Condenser vacuum will degrade. The Crew will enter AOP-31 and eventually insert a manual Reactor scram.

RPS B will fail to process the scram and ARI will also fail to insert control rods. The Crew will enter EOP-2 and EOP-3. The Crew will lower Recirculation flow to minimum and then trip the RWR pumps. The Crew will terminate and prevent injection except CRD, SLC and RCIC. The SLC pump discharge relief valves will both lift, diverting boron injection from the RPV. The Main Turbine will be available until power lowers to approximately 40%, when a spurious turbine trip occurs. As power lowers, Turbine Bypass Valves will begin failing closed, challenging RPV pressure control and Primary Containment control. The Crew will be able to manually insert control rods. Eventually, either pulling RPS fuses or venting the scram air header will result in all rods inserting.

The Scenario will be terminated when all control rods are inserted and RPV water level is being restored \ maintained 177-222.5".

| Shift Turnover                                                                                                                                                                                                                                                                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The Plant is operating at approximately 85% power.</p> <p>RCIC is out of service for maintenance (LCO 3.5.3, day 1 of planned 3 day maintenance window).</p> <p>When you take the shift, raise Reactor power to 100% with Recirculation flow per OP-65 and RAP-7.3.16.</p> |

| Critical Tasks/Standards                                                                                                                                                                                                                                                                                              |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Critical Task #1: Given a failure to scram with Reactor power above 2.5%, the crew will terminate and prevent all RPV injection except SLC, RCIC and CRD, in accordance with EOP-3.</p> <p>Critical Task #2: Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.</p> |

| EVENT NO. | EVENT SEQUENCE                                                                          |
|-----------|-----------------------------------------------------------------------------------------|
| 1.        | Raise Reactor Power to 100% with Recirculation Flow (Reactivity: BOP)                   |
| 2.        | Trip of CRD Pump B (Component: ATC)                                                     |
| 3.        | Turbine Vibrations (Component: BOP)                                                     |
| 4.        | Loss of Main Condenser Vacuum (Component: ATC)                                          |
| 5.        | Failure of RPS and ARI to Actuate (Major: All)                                          |
| 6.        | SLC Discharge Relief Valves Lift (Component: All)                                       |
| 7.        | Main Generator Trip and Turbine Bypass Valves Sequentially Fail Closed (Component: All) |

**D. TERMINATION CUES:**

- All control rods are inserted
- RPV water level is being restored \ maintained 177-222.5"



| INSTRUCTOR ACTIVITY                                                                | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                              | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Simulator in RUN<br>Recorder and Alarm Power<br>ON<br>Simulator Checklist Complete |          |                                                                                                                                                                                        |                     |
| Provide Turnover (Attach. 1)                                                       |          |                                                                                                                                                                                        |                     |
| After the shift turnover, allow<br>no more than five minutes for<br>panel walkdown | All      | <ul style="list-style-type: none"> <li>Walkdown the control panels and assume the watch</li> </ul>                                                                                     | SAT / UNSAT / NA    |
|                                                                                    | SRO      | <ul style="list-style-type: none"> <li>Perform Crew Brief</li> <li>Direct BOP to raise power to 100% with Recirc flow</li> <li>Provide oversight of reactivity manipulation</li> </ul> |                     |
|                                                                                    | BOP      | <ul style="list-style-type: none"> <li>Raise Recirc flow alternately with RWR MG A(B) SPEED CNTRL</li> <li>Monitor APRMs, CTP, Recirc flow, Reactor water level</li> </ul>             | SAT / UNSAT / NA    |
| <b>On Lead Examiner Cue:<br/>ACTIVATE TRIGGER 1</b><br>CRD pump B trips            | ATC      | <ul style="list-style-type: none"> <li>Recognize / report annunciators: <ul style="list-style-type: none"> <li>09-5-1-9, CRD CHARGING WTR PRESS LO</li> </ul> </li> </ul>              | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                       | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COMMENTS/EVALUATION |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                                                           |           | <ul style="list-style-type: none"> <li>o 09-5-1-40, CRD PMP 3P-16B OVERLOAD</li> <li>o 09-5-1-50, CRD PMP 39-16B TRIP</li> <li>• Recognize / report trip of CRD pump B</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                 |                     |
|                                                                                                                                                                           | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge report</li> <li>• Enter AOP-69 (Control Rod Drive Pump Trouble)</li> <li>• Direct start of CRD pump A</li> <li>• Direct continuation of Control Rod Pattern Adjustment</li> </ul>                                                                                                                                                                                                                                                                                                                            |                     |
| <b>Role Play;</b><br>If dispatched to investigate pump trip, wait 2 minutes, then report CRD pump B breaker is tripped and there are no abnormal indications at the pump. | ATC       | <ul style="list-style-type: none"> <li>• Execute AOP-69</li> <li>• Note override conditions for RPV pressure above 900 psig and required scram</li> <li>• Monitor ACCUM alarm lights on full core display</li> <li>• Ensure CRD FLOW CNTRL 03FIC-301 is in MAN</li> <li>• Rotate manual control knob on CRD FLOW CNTRL 03FIC-301 fully counterclockwise</li> </ul>                                                                                                                                                                                                | SAT / UNSAT / NA    |
|                                                                                                                                                                           | ATC cont. | <ul style="list-style-type: none"> <li>• Verify in-service CRD flow control valve (03FCV-19A or B) is closed</li> <li>• Start CRD PMP 03P-16A</li> <li>• Slowly adjust manual control knob on CRD FLOW CNTRL 03FIC-301 to establish 59 to 61 gpm on 03-FI-310 or 03FIC-301</li> <li>• Place CRD FLOW CNTRL 03FIC-301 in automatic as follows:               <ul style="list-style-type: none"> <li>o Balance controller by adjusting setpoint tape</li> <li>o Place controller in AUTO</li> <li>o Adjust setpoint to BETWEEN 59 and 61 gpm</li> </ul> </li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                       | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                      | COMMENTS/EVALUATION |
|---------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                           |           | <ul style="list-style-type: none"> <li>Continue Control Rod Pattern Adjustment</li> </ul>                                                                                                                                      |                     |
| <b>On Lead Examiner Cue:<br/>ACTIVATE TRIGGER 2</b><br>Turbine Vibrations | BOP / ATC | <ul style="list-style-type: none"> <li>Recognize / report high Turbine vibrations</li> <li>Monitor Turbine vibrations</li> <li>Report vibrations on bearing 5 &amp; 6 are greater than 9 mils but less than 12 mils</li> </ul> | SAT / UNSAT / NA    |
|                                                                           | SRO       | <ul style="list-style-type: none"> <li>Acknowledge report</li> <li>Enter AOP-66 (Main Turbine High Vibration)</li> <li>Direct power reduction per RAP-7.3.16 to lower vibrations to less than 9 mils</li> </ul>                |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                         | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                    | COMMENTS/EVALUATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>Booth Operator:</b><br>Once Reactor power is lowered to approximately 85%, ramp malfunctions TU04:E and TU04:F from current value to 15% over 2 minutes. | BOP       | <ul style="list-style-type: none"> <li>• Lower Recirc flow with RWR MG A(B) SPEED CNTRL</li> <li>• Monitor APRMs, CTP, Recirc flow, Reactor water level</li> <li>• Monitor Turbine vibrations</li> <li>• Report Turbine vibrations are less than 9 mils</li> </ul>           | SAT / UNSAT / NA    |
| <b>On Lead Examiner Cue: ACTIVATE TRIGGER 3</b><br>Loss of Main Condenser vacuum                                                                            | BOP / ATC | <ul style="list-style-type: none"> <li>• 09-3-1-28 Offgas Recombiner Trouble</li> <li>• Recognize / report lowering Main Condenser vacuum</li> </ul>                                                                                                                         | SAT / UNSAT / NA    |
|                                                                                                                                                             | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge reports</li> <li>• Enter AOP-31 (Loss of Condenser Vacuum)</li> <li>• Direct power reduction per RAP-7.3.16 to maintain Main Condenser vacuum within Normal Operating Region</li> <li>• Direct Reactor scram</li> </ul> |                     |
|                                                                                                                                                             | BOP       | <ul style="list-style-type: none"> <li>• Monitor Main Condenser vacuum</li> <li>• Trip Recombiner</li> <li>• Attempt to determine cause of vacuum degradation</li> <li>• Lower Recirc flow with RWR MG A(B) SPEED CNTRL if Core</li> </ul>                                   | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                                                             | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS/EVALUATION |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                                                                                                                                                                                 |           | Flow is >55%.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |
|                                                                                                                                                                                                                                                                                                 | ATC       | <ul style="list-style-type: none"> <li>• May insert CRAM rods</li> <li>• Depress manual Scram pushbuttons</li> <li>• Place Mode Switch to Shutdown</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | SAT / UNSAT / NA    |
|                                                                                                                                                                                                                                                                                                 | ATC cont. | <ul style="list-style-type: none"> <li>• Recognize / report failure to scram</li> <li>• Manually initiate ARI</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |
| <p><b>Note:</b><br/>As condenser vacuum degrades, the Turbine may trip, Turbine Bypass Valves may close, and MSIVs may go shut. Additionally, malfunctions will:</p> <ul style="list-style-type: none"> <li>o Trip the Main Generator when Reactor power lowers to approximately 42%</li> </ul> | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge report</li> <li>• Enter EOP-2 (RPV Control) on Reactor power above 2.5% or unknown when a scram is required</li> <li>• Determine the Reactor will NOT remain shutdown under all conditions without boron</li> <li>• Exit EOP-2</li> <li>• Enter EOP-3 (Failure to Scram)</li> <li>• Direct EP-3 Failure to Scram Actions</li> <li>• Direct bypassing MSIV low RPV water level isolation interlocks per EP-2</li> <li>• Direct terminate and prevent all injection except SLC, RCIC and CRD per EP-5</li> <li>• Direct RPV water level controlled between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI)</li> <li>• Direct RPV pressure controlled 900-1000 psig with Turbine Bypass Valves</li> <li>• May direct RPV pressure controlled 800-1000 psig with</li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                          | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS/EVALUATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <ul style="list-style-type: none"> <li>○ Sequentially fail closed 3 of the 4 Turbine Bypass Valves when Reactor power lowers to approximately 24%</li> </ul> |           | Turbine Bypass Valves and SRVs, as required                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |
|                                                                                                                                                              | ATC       | <ul style="list-style-type: none"> <li>• Perform EP-3 Failure to Scram Actions               <ul style="list-style-type: none"> <li>○ Ensure Rx Mode Switch in SHUTDOWN</li> <li>○ Ensure ARI initiated</li> <li>○ Run Recirc flow to minimum</li> <li>○ Determine Rx power greater than 2.5%</li> <li>○ Ensure Recirc pumps tripped</li> <li>○ Override ADS                   <ul style="list-style-type: none"> <li>○ Place ADS LOGIC OVERRIDE &amp; RESET LOGIC A 2E-S2A in OVERRIDE</li> <li>○ Place ADS LOGIC OVERRIDE &amp; RESET LOGIC B 2E-S2B in OVERRIDE</li> <li>○ Verify annunciator 09-4-1-27 ADS OVERRIDE SW IN OVERRIDE is in alarm</li> <li>○ Verify white ADS LOGIC OVERRIDDEN 2E-DS10 light is on</li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA    |
|                                                                                                                                                              | ATC cont. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |

| INSTRUCTOR ACTIVITY     | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COMMENTS/EVALUATION |
|-------------------------|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                         |          | <ul style="list-style-type: none"> <li>○ Obtain CRS concurrence to inject SLC</li> <li>○ Inject SLC</li> <li>○ Verify white SQUIB VLVS READY lights are on</li> <li>○ Note level on TK LVL 11LI-66</li> <li>○ Place SLC pup keylock switch in START SYS-A or START SYS-B</li> <li>○ Verify red SLC pump running light is on</li> <li>○ Verify SLC pump discharge pressure on DISCH PRESS 11PI-65 is greater than or equal to RPV pressure</li> <li>○ Verify the following: <ul style="list-style-type: none"> <li>○ CLN UP SUCT 12MOV-18 is closed</li> <li>○ CLN UP RETURN ISOL VALVE 12MOV-69 is closed</li> </ul> </li> <li>○ Recognize / report failure of SLC pump to inject</li> <li>○ Inject with other SLC pump</li> <li>○ Recognize / report failure of second SLC pump to inject</li> </ul> <ul style="list-style-type: none"> <li>• Insert IRMs and SRMs</li> <li>• Range IRMs as necessary</li> </ul> |                     |
| <b>Critical Task #1</b> |          | <b>Given a failure to scram with Reactor power above 2.5%, the crew will terminate and prevent all RPV injection except SLC, RCIC and CRD, in accordance with EOP-3.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>Pass / Fail</b>  |

| INSTRUCTOR ACTIVITY                                                                                                           | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COMMENTS/EVALUATION     |
|-------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>Critical Task #1 Standard:</b>                                                                                             |           | <b>Terminate and prevent all injection except SLC, RCIC and CRD per EP-5</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                         |
| <b>Booth Operator:</b><br>When directed to install MSIV low water level jumpers, wait 2 minutes and <b>run</b> MSIVLEVEL.cae. | BOP       | <ul style="list-style-type: none"> <li>• Direct NPO to bypass MSIV low RPV water level isolation interlocks per EP-2 Section 5.1</li> <li>• <b>Terminate and prevent all injection except SLC, RCIC and CRD per EP-5</b> <ul style="list-style-type: none"> <li>◦ Feedwater               <ul style="list-style-type: none"> <li>◦ If RFP A is running:                   <ul style="list-style-type: none"> <li>◦ Ensure RFP A FLOW CNTRL 06-84A is in MAN</li> <li>◦ Lower RFP A FLOW CNTRL 06-84A to minimum</li> <li>◦ Ensure open RFP A MIN FLOW 34FCV-135A</li> </ul> </li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA        |
|                                                                                                                               | BOP cont. | <ul style="list-style-type: none"> <li>◦ If RFP B is running:               <ul style="list-style-type: none"> <li>◦ Ensure RFP B FLOW CNTRL 06-84B is in MAN</li> <li>◦ Lower RFP BFLOW CNTRL 06-84B to minimum</li> <li>◦ Ensure open RFP B MIN FLOW 34FCV-135B</li> </ul> </li> <li>◦ Ensure closed:               <ul style="list-style-type: none"> <li>◦ RFP A DISCH 34MOV-100A</li> <li>◦ RFP B DISCH 34MOV-100B</li> </ul> </li> </ul>                                                                                                                                                                  | <b>Critical Task #1</b> |



| INSTRUCTOR ACTIVITY                                                                                             | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | COMMENTS/EVALUATION |
|-----------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>Note:</b><br/>RCIC is out of service as part of the scenario setup, so RCIC actions may not be taken.</p> |           | <ul style="list-style-type: none"> <li>o Ensure FDWTR STARTUP VLV 34FCV-137 in MANUAL</li> <li>o Ensure closed FDWTR STARTUP VLV 34FCV-137</li> <li>o HPCI</li> <li>o Trip HPCI by depressing TURB TRIP 23A-S19 pushbutton</li> <li>o RCIC</li> <li>o Place 13MOV-16 AUTO CONTROL BYPASS 13A-S2A keylock switch in BYPASS at panel 09-4</li> <li>o Verify white light above 13MOV-16 AUTO CONTROL BYPASS 13A-S2A keylock switch is on</li> <li>o Ensure closed OUTBD STM SUPP VLV 13MOV-16</li> </ul>                                                                                                                                                                                                                                                                                                                          |                     |
|                                                                                                                 | BOP cont. | <ul style="list-style-type: none"> <li>o Core Spray Loop A <ul style="list-style-type: none"> <li>o Place 14MOV-11A AUTO ACTUATION BYPASS SW 14A-S16A switch in bypass</li> <li>o Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on</li> <li>o Ensure closed OUTBD INJ VLV 14MOV-11A</li> <li>o Ensure PMP 14P-1A is stopped</li> </ul> </li> <li>o Core Spray Loop B <ul style="list-style-type: none"> <li>o Place 14MOV-11B AUTO ACTUATION BYPASS SW 14A-S16B switch in bypass</li> <li>o Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on</li> <li>o Ensure closed OUTBD INJ VLV 14MOV-11B</li> <li>o Ensure PMP 14P-1B is stopped</li> </ul> </li> <li>o RHR Loop A <ul style="list-style-type: none"> <li>o Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A</li> </ul> </li> </ul> |                     |

| INSTRUCTOR ACTIVITY     | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS/EVALUATION |
|-------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                         |           | <ul style="list-style-type: none"> <li>○ Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on</li> <li>○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27A</li> <li>○ Ensure RHR Loop A pumps which are not required to be running are stopped</li> </ul>                                                                                                                                                                                    |                     |
|                         |           | <ul style="list-style-type: none"> <li>○ RHR Loop B <ul style="list-style-type: none"> <li>○ Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B</li> <li>○ Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on</li> <li>○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27B</li> <li>○ Ensure RHR Loop B pumps which are not required to be running are stopped</li> </ul> </li> <li>• Report RPV water level is less than 110" to CRS</li> </ul> |                     |
|                         | BOP cont. |                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |
| <b>Critical Task #2</b> |           | <b>Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.</b>                                                                                                                                                                                                                                                                                                                                               | <b>Pass / Fail</b>  |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                       | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COMMENTS/EVALUATION                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <b>Critical Task #2 Standard:</b>                                                                                                                                                                                                                                                                                                                                                                         |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                             |
| <p><b>Role Play:</b> <i>When</i> Candidate attempts to pull Scram Fuses, inform Candidate that the panel door cannot be opened. Another operator has relieved you of this task.</p> <p><b>When</b> Candidate orders the Scram Air Header depressurized, wait 3 min and report that the valves cannot be opened to vent.</p> <p><b>Booth Operator:</b> when directed to reset ARI, insert Remote RP20.</p> | ATC       | <ul style="list-style-type: none"> <li>• <b>Perform EP-3 Backup Control Rod Insertion Actions</b> <ul style="list-style-type: none"> <li>○ De-energize scram solenoids per Subsection 5.2</li> <li>○ Determine fuses to be pulled based on lit RPS Scram Group lights</li> <li>○ Direct NPO to pull fuses 5A-F18B, 5A-F18F, 5A-F18D, and 5A-F18H</li> </ul> </li> <li>○ Direct NPO to vent scram air header per Subsection 5.3</li> <li>○ Direct NPO to reset ARI per Subsection 5.4</li> </ul> | SAT / UNSAT / NA<br><b>Critical Task #2</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                           | ATC cont. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                             |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                           | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | COMMENTS/EVALUATION |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>Booth Operator: (with Lead Examiner concurrence)</b></p> <p><b>When</b> RPV water level is controlled below 110" and control rod insertion is in progress:</p> <p><b>if</b> directed, pull RPS fuses by <b>running</b> SCRAMFUSEOUT.cae.</p> <p>*Inform ATC when pulling fuses.</p> <p><b>if</b> directed to vent Scram Air Header, <b>Activate Trigger 25</b>, Scram Air Header pressure to 0 psig</p> |          | <ul style="list-style-type: none"> <li>○ Insert Rods using RMCS per Subsection 5.7               <ul style="list-style-type: none"> <li>○ Ensure ARI is reset</li> <li>○ Place RWM keylock switch in BYPASS</li> <li>○ Select control rod on ROD SEL matrix</li> <li>○ Insert control rod using ROD MOVEMENT CNTRL or ROD EMERG IN NOTCH OVERRIDE</li> </ul> </li> <li>○ Raise dP using CRD cooling water per Subsection 5.8               <ul style="list-style-type: none"> <li>○ Direct NPO to close 03CRD-91</li> <li>○ Ensure open CRD DRV WTR PRESS VLV 03MOV-20</li> <li>○ Ensure closed CRD CLG WTR PRESS CNTRL VLV 03MOV-22</li> <li>○ Raise CRD system flow rate to maximum by adjusting CRD FLOW CNTRL 03FIC-301 in automatic or manual</li> </ul> </li> <li>• Report progress of control rod insertion to CRS</li> </ul> |                     |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COMMENTS/EVALUATION |
|---------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     | BOP       | <ul style="list-style-type: none"> <li>Control RPV water level between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI)               <ul style="list-style-type: none"> <li>Feedwater                   <ul style="list-style-type: none"> <li>If any Reactor feed pump is running:                       <ul style="list-style-type: none"> <li>Ensure feedwater pump discharge pressure is less than RPV pressure by adjusting reactor feed pump speed</li> </ul> </li> <li>Lineup injection flow path by performing on or both of the following:                       <ul style="list-style-type: none"> <li>Adjusting FDWTR STARTUP VLV 34FCV-137</li> <li>Ensure open or throttled open Reactor feed pump discharge valve for running pump (34MOV-100A or B)</li> </ul> </li> <li>Control feed flow to RPV by performing any of the following:                       <ul style="list-style-type: none"> <li>Adjust RFP speed</li> <li>Adjust FDWTR STARTUP VLV 34FCV-137</li> <li>Close feed pump discharge valves</li> </ul> </li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA    |
|                     | BOP cont. | <ul style="list-style-type: none"> <li>If both Reactor feed pumps are shutdown, and feedwater discharge header pressure is greater than RPV pressure, then control feed flow to RPV by performing one or both of the following:               <ul style="list-style-type: none"> <li>Throttling FDWTR STARTUP VLV 34FCV-137</li> <li>Throttling one or both of the following valves, only if APRMs are on scale:</li> </ul> </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                     |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | COMMENTS/EVALUATION |
|---------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     |           | <ul style="list-style-type: none"> <li>○ RFP A DISCH 34MOV-100A</li> <li>○ RFP B DISCH 34MOV-100B</li> <li>○ HPCI</li> <li>○ Preparation for injection: <ul style="list-style-type: none"> <li>○ Ensure SGT is running per OP-20</li> <li>○ Ensure open one of the following valves: <ul style="list-style-type: none"> <li>○ HPCI GLAND SEAL SUCT 01-125MOV-13A</li> <li>○ HPCI GLAND SEAL SUCT 01-125MOV-13B</li> </ul> </li> <li>○ Ensure HPCI FLOW CNTRL 23FIC-108-1 setpoint is adjusted to minimum</li> <li>○ Ensure HPCI FLOW CNTRL 23FIC-108-1 is in AUTO</li> </ul> </li> <li>○ Injection with initiation signal: <ul style="list-style-type: none"> <li>○ Depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton</li> <li>○ Verify annunciator 09-3-3-28 HPCI TURB TRIP SOLENOID ENERGIZED is clear</li> <li>○ Verify HPCI auto-initiation</li> <li>○ Control HPCI turbine speed in manual or automatic</li> <li>○ Periodically verify HPCI turbine speed is greater than 2100 rpm</li> </ul> </li> </ul> |                     |
|                     | BOP cont. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |
|                     | ATC       | <ul style="list-style-type: none"> <li>• Report all control rods are inserted</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                | COMMENTS/EVALUATION |
|---------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     | SRO      | <ul style="list-style-type: none"> <li>• Acknowledge report</li> <li>• Exit EOP-3</li> <li>• Enter EOP-2</li> <li>• Direct RPV water level restored and maintained 177-222.5"</li> </ul> |                     |
|                     | BOP      | <ul style="list-style-type: none"> <li>• Begins restoring and \ or maintaining RPV water level 177-222.5"</li> </ul>                                                                     | SAT / UNSAT / NA    |

**Termination Criteria:**

- All control rods are inserted
- Reactor water level is being restored \ maintained 177-222.5"



ATTACHMENT 1

| B. Shift Turnover |                                                                                                                                                                                                                                                                               |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | <p>The Plant is operating at approximately 85% power.</p> <p>RCIC is out of service for maintenance (LCO 3.5.3, day 1 of planned 3 day maintenance window).</p> <p>When you take the shift, raise Reactor power to 100% with Recirculation flow per OP-65 and RAP-7.3.16.</p> |

**JAMES A. FITZPATRICK NUCLEAR POWER PLANT**

**LOI-12-2 NRC EXAMINATION SCENARIO 3**

**TITLE:** **SCENARIO 3** **LOI-12-2 NRC EXAMINATION**

**SCENARIO NUMBER:** **NRC 3**

**PATH:** **STAND ALONE**

**Validation:** \_\_\_\_\_ **Training:** \_\_\_\_\_ **Operations:** \_\_\_\_\_

|     | CANDIDATES |
|-----|------------|
| CRS |            |
| ATC |            |
| BOP |            |

## RECORD OF CHANGES

[illegible]

C. **TITLE:** LOI-12-2 NRC EXAMINATION SCENARIO 3

B. **SCENARIO SETUP:**

3. IC-158

6. Special Instructions:

- a. The Plant is operating at approximately 5% power.
- b. A Plant start-up is in progress.
- c. RFP A is out of service for maintenance (Red tags on the following: 101A, 100A, Trip P\B, Turning Gear, Hyd Coupler, AC and DC Oil Pumps).
- d. APRM A & B recorder selector switch in APRM position

7. Preset Conditions:

- a. Preset, HP11, 23MOV-15 Auto Isolation failure
- b. Preset, AD07A-K, All SRVs fail to open
- c. Preset, RD10, Control Rod 50-27 Stuck
- d. TRIGGER 2, OR EDZDI11HOEB01 Bus 10400-10600 Breaker 10614 Trip
- e. TRIGGER 4, ED21:D, 600VAC Emerg Bus 12600 Failure
- f. TRIGGER 4, R: EP09, Seismic Event
- g. TRIGGER 6, HP06, HPCI Steam Leak Initial 0.4% Ramp 10 min. to 2%
- h. TRIGGER 7, R: HP03, 23MOV-15 Ckt Bkr
- i. TRIGGER 10, R: DG23:B, EDG-B Local Maintenance Switch, Maint
- j. TRIGGER 11, R: DG23:D, EDG-D Local Maintenance Switch, Maint
- k. TRIGGER 12, R: DG23:A, EDG-A Local Maintenance Switch, Maint
- l. TRIGGER 12, R: DG23:C, EDG-C Local Maintenance Switch, Maint
- m. TRIGGER 13, R: SW21, EDG Manual Isolation VVS ESW-2A/2B, 100%
- n. Assure Trigger 7 is tied to EVENT TRIGGER MOV-15 – CLOSED
- o. Event Trigger 30, rdpdrvdp>290, dmf RD10:50:27

6. Consumable Forms and Procedures:

- ◆ Reactivity Maneuvering sheets
- ◆ AOP-1
- ◆ AOP-14
- ◆ AOP-19
- ◆ AOP-19B

C. **SCENARIO SUMMARY:**

The scenario will begin at approximately 5% power with a Plant start-up in progress. The crew will begin the shift by pulling two control rods from position 00 to 12. The second control rod will not move at normal drive water pressure. The crew will raise drive water pressure and successfully withdraw the control rod.

The crew will then place the Mode Switch in RUN and withdraw IRMs per OP-65. Following transition to mode 1, a degraded voltage condition on the 10600 Bus occurs. This results in both EDGs 'B' and 'D' starting and paralleling onto the 10600 Bus. AOP-19 (Loss of 10600 Bus) will be entered. Following the auto start of the EDGs, a report from the field states that EDG B has a Low Lube Oil Pressure which is an automatic trip of EDG 'B' with a LOCA signal not present. However, EDG 'B' is still running and the Operator should recognize this and shutdown EDG 'B'.

Next, a Seismic Event occurs and L26 de-energizes. AOP-14 (Earthquake) is entered and AOP-19B (Loss of Switchgear L26) will be entered which requires EDG 'D' to be shutdown. This results in a complete loss of the 10600 Bus and AOP-19 will be re-addressed. Additionally, AOP-60 (Loss of RPS Bus B Power) will be entered.

While the Electric Plant transient is being addressed, an unisolable steam leak from the HPCI steam line becomes evident. This results in rising Reactor Building area temperatures. EOP-5 will be entered. EOP-5 actions will require EOP-2 entry and a manual Scram ordered before any area exceeds its Maximum Safe temperature.

The HPCI steam leak degrades resulting in two area temperatures exceeding their Max Safe values. When this occurs, an Emergency Depressurization is required to be performed. When SRVs are attempted to be opened, none will operate. This requires Group 2 Pressure Control Systems to be used for Emergency Depressurization.

The Scenario will be terminated when the RPV is being rapidly depressurized with Group 2 Pressure Control Systems and RPV level is in the assigned band.

#### Shift Turnover

The Plant is operating at approximately 5% power with a start-up in progress.

RFP A is out of service for maintenance.

When you take the shift, complete the following:

3. Withdraw the next two control rods in the start-up sequence (26-51 and 50-27, from position 00 to 12).
4. Then, perform OP-65 steps D.20.2 through D.20.4 to place the Mode Switch to RUN and withdraw IRMs.
5. Then, continue control rod withdrawals per the start-up sequence.

| Critical Tasks/Standards                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Critical Task #1: Given the plant operating at power with an unisolable primary system discharging into Secondary Containment, the crew will insert a manual Reactor scram, in accordance with EOP-5.</p>                                                   |
| <p>Critical Task #2: Given an unisolable primary system discharging into Secondary Containment, two areas exceeding Maximum Safe Temperatures, and failure of multiple SRVs to open, the crew will rapidly depressurize the RPV, in accordance with EOP-2.</p> |

| EVENT NO. | EVENT SEQUENCE                                                     |
|-----------|--------------------------------------------------------------------|
| 1.        | Continue Raising Reactor Power with Control Rods (Reactivity: ATC) |
| 2.        | Stuck Control Rod (Component: ATC)                                 |
| 3.        | Transition to Mode 1 (Normal: ATC)                                 |
| 4.        | Degraded 10600 Voltage (Component: BOP)                            |
| 5.        | EDG B Low Lube Oil Pressure (Component: BOP)                       |
| 6.        | Seismic Event with Loss of L26 (Component: BOP)                    |
| 7.        | HPCI Steam Leak (Major: All)                                       |
| 8.        | HPCI Fails to Isolate (Component: All)                             |
| 9.        | SRVs Fail to Open (Component: All)                                 |

**D. TERMINATION CUES:**

- All control rods are inserted
- RPV is being rapidly depressurized with Group 2 Pressure Control Systems
- Reactor water level is controlled 177-222.5"



| INSTRUCTOR ACTIVITY                                                                | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                 | COMMENTS/EVALUATION |
|------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Simulator in RUN<br>Recorder and Alarm Power<br>ON<br>Simulator Checklist Complete |           |                                                                                                                                                                                                                                                                                                                                                                                                           |                     |
| Provide Turnover (Attach. 1)                                                       |           |                                                                                                                                                                                                                                                                                                                                                                                                           |                     |
| After the shift turnover, allow<br>no more than five minutes for<br>panel walkdown | All       | <ul style="list-style-type: none"> <li>Walkdown the control panels and assume the watch</li> </ul>                                                                                                                                                                                                                                                                                                        | SAT / UNSAT / NA    |
|                                                                                    | SRO       | <ul style="list-style-type: none"> <li>Perform Crew Brief</li> <li>Direct ATC to continue Rx Startup</li> <li>Provide oversight of reactivity manipulation</li> <li>Direct Mode Switch placed in RUN</li> </ul>                                                                                                                                                                                           |                     |
|                                                                                    | ATC       | <ul style="list-style-type: none"> <li>Withdraw Control Rod 26-51 to position 12 per OP-26</li> <li>Attempt to withdrawal Control Rod 50-27</li> <li>Report Control Rod 50-27 failed to move at position 00</li> <li>Raise CRD drive water differential pressure in 50 psid increments per OP-25, Section E.6</li> <li>Attempt to withdraw Control Rod with differential pressure at ~300 psid</li> </ul> | SAT / UNSAT / NA    |
|                                                                                    | ATC cont. |                                                                                                                                                                                                                                                                                                                                                                                                           |                     |

| INSTRUCTOR ACTIVITY                                                                     | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS/EVALUATION |
|-----------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                         |           | <ul style="list-style-type: none"> <li>• Report Control Rod moved out</li> <li>• Restore Drive Water dP to original value (~260)</li> <li>• Continue withdrawal of Rod 50-27 to 12.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |
|                                                                                         | ATC       | <ul style="list-style-type: none"> <li>• Rotate Mode Switch clockwise to RUN</li> <li>• Place Channel Selector switches in APRM/RBM</li> <li>• Withdraw IRMs to full out as follows: <ul style="list-style-type: none"> <li>◦ Ensure POWER ON light is on</li> <li>◦ Ensure IRM(s) that will be withdrawn is(are) selected</li> <li>◦ Ensure IRM SELECT light(s) is (are) off for IRM(s) that will not be withdrawn</li> <li>◦ Verify IRM RETRACT PERMIT light(s) is (are) on for IRM(s) that will be withdrawn</li> <li>◦ Depress DRIVE OUT/DRIVING OUT pushbutton</li> <li>◦ Verify DRIVE OUT light is on</li> <li>◦ Verify DRIVING OUT light comes on</li> <li>◦ WHEN IRM(s) is (are) at desired position OR detector OUT light comes on, depress DRIVE OUT/DRIVING OUT pushbutton</li> <li>◦ Verify the following lights are off: <ul style="list-style-type: none"> <li>◦ DRIVE OUT</li> <li>◦ DRIVING OUT</li> <li>◦ WHEN operation of IRMs is no longer desired, ensure IRMs are de-selected</li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA    |
| <b>On Lead Examiner Cue:</b><br><b>ACTIVATE TRIGGER 2</b><br>Degraded Bus 10600 Voltage | BOP / ATC | <ul style="list-style-type: none"> <li>• Recognize / report trip of Bus 10600 normal supply breaker</li> <li>• Recognize / report start of EDGs B and D</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | COMMENTS/EVALUATION |
|---------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     | SRO       | <ul style="list-style-type: none"> <li>• Acknowledge reports</li> <li>• Place start-up on hold</li> <li>• Enter AOP-19 (Loss of 10600 Bus)</li> <li>• Enter AOP-60 (Loss RPS B)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                     |
|                     | BOP       | <ul style="list-style-type: none"> <li>• Execute AOP-19</li> <li>• Execute AOP-60</li> <li>• Dispatches NPO to verify proper EDG operation and to restore RBC temp</li> <li>• Stop DW Cooling Fans 68FN-2D and 4A</li> <li>• Exit AOP-19 and enter AOP-60 (Loss of RPS Bus B Power)</li> <li>• Verify SBTG B start per OP-20 Section G.6               <ul style="list-style-type: none"> <li>○ Verify the following:                   <ul style="list-style-type: none"> <li>○ White light for AIR HTR 01-125E-5B is on</li> <li>○ Red light for AIR HTR 01-125E-5B is on</li> <li>○ BELOW EL 369' SUCT 01-125MOV-12 is open</li> <li>○ TRAIN B CLG VLV 01-125MOV-100B is closed</li> <li>○ TRAIN B INLET 01-125MOV-14B is open</li> </ul> </li> <li>○ FN DISCH 01-125MOV-15B is open</li> <li>○ TRAIN B FN 01-125FN-1B is running</li> </ul> </li> <li>○ If SGT Train A is shutdown, then verify flow rate on SGT FLOW 01-125FI-106A:               <ul style="list-style-type: none"> <li>○ RB un-isolated – Approximately 6000 scfm</li> <li>○ RB isolated – Approximately 5600 to 5800 scfm</li> </ul> </li> <li>• Verify RWCU isolation per OP-28 Section G.2               <ul style="list-style-type: none"> <li>○ Ensure the following pumps are stopped at panel 09-4:</li> </ul> </li> </ul> | SAT / UNSAT / NA    |
|                     | BOP cont. |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | COMMENTS/EVALUATION |
|---------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                     |           | <ul style="list-style-type: none"> <li>○ CLN UP PMP 12P-1A</li> <li>○ CLN UP PMP 12P-1B</li> <li>○ Dispatch NPO to perform field actions for RWCU isolation</li> <li>○ Ensure closed the following valves: <ul style="list-style-type: none"> <li>○ CLN UP SUCT 12MOV-15</li> <li>○ CLN UP SUCT 12MOV-18</li> <li>○ CLN UP RETURN ISOL VLV 12MOV-69</li> <li>○ FILTER DEMIN BYP 12MOV-74</li> <li>○ CLN UP BLOWDOWN FLOW CNTRL 12FCV-55</li> <li>○ BLOWDOWN ORIFICE BYP 12MOV-53</li> <li>○ BLOWDOWN TO MAIN CND SR 12MOV-56</li> <li>○ BLOWDOWN TO RDW 12MOV-57</li> </ul> </li> <li>• Isolate RB Ventilation per OP-51A Section G.1: <ul style="list-style-type: none"> <li>○ Ensure SBTG is running per OP-20</li> </ul> </li> </ul>                 |                     |
|                     | BOP cont. | <ul style="list-style-type: none"> <li>○ Depress the following pushbuttons at panel 09-75: <ul style="list-style-type: none"> <li>○ RB VENT ISOL A</li> <li>○ RB VENT ISOL B</li> </ul> </li> <li>○ Verify isolation per Subsection G.2: <ul style="list-style-type: none"> <li>○ INBD SUPP ISOL 66AOV-100A - Closed</li> <li>○ OUTBD EXH ISOL 66AOV-101A - Closed</li> <li>○ BELOW EL 369' RECIRC 66AOD-105 -Open</li> <li>○ EL 369' RECIRC 66AOD-108 - Open</li> <li>○ OUTBD SUPP ISOL 66AOV-100B - Closed</li> <li>○ INBD EXH ISOL 66AOV-101B - Closed</li> <li>○ SUPP FN 66FN-5A, 5B, 5C (two of three) - On</li> <li>○ BELOW EL 369' EXH FN 66FN-12A OR 66FN-12B - On</li> <li>○ EL 369' EXH FN 66FN-13A AND 66FN-13B - Off</li> </ul> </li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                                                                                                                                           | POSITION | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                      | COMMENTS/EVALUATION |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                                                                                               |          | <ul style="list-style-type: none"> <li>TK EXH FN 66FN-35 - Off</li> <li>CRESC SUPP FN 66FN-26A OR 66FN-26B - On</li> <li>STANDBY GAS TREATMENT - Running per OP-20</li> <li>Reactor building to atmosphere differential pressure               <ul style="list-style-type: none"> <li>-0.25 to -2.50 in. water gauge</li> </ul> </li> <li>Notify Chemistry of RWCU, Drywell CAMS and RB Vent Rad Monitor isolations</li> </ul> |                     |
| <b>On Lead Examiner Cue:</b><br><b>Role Play:</b><br>As NPO at EDG B panel, report that EDG B has a Lube Oil pressure of 12 psig indicated on 93PS-3B ("Low Lube Oil Pressure Alarm" is in.). | BOP      | <ul style="list-style-type: none"> <li>Receive report of low lube oil pressure (&lt;20 psig)</li> <li>Recognize this a trip since EDG did <b>NOT</b> start on ECCS signal</li> <li>Inform SRO of EDG condition</li> </ul>                                                                                                                                                                                                      | SAT / UNSAT / NA    |
|                                                                                                                                                                                               | SRO      | <ul style="list-style-type: none"> <li>Acknowledge report</li> <li>Direct Emergency Shutdown of EDG B</li> </ul>                                                                                                                                                                                                                                                                                                               |                     |
| <b>Booth Operator:</b><br>When NPO directed to take EDG B Control Sw to MAINT, insert Remote DG23:B to Maint. (Trigger 10)                                                                    | BOP      | <ul style="list-style-type: none"> <li>Coordinate with NPO to perform an Emergency Shutdown of EDG B per OP-22 Section G.17:               <ul style="list-style-type: none"> <li>Ensure EDG (B) load breaker (71-10602) is tripped and placed in PULL TO LOCK position</li> </ul> </li> </ul>                                                                                                                                 | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                        | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | COMMENTS/EVALUATION |
|----------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                                                                                                            |           | <ul style="list-style-type: none"> <li>o Ensure EDG tie breaker (10604) is tripped</li> <li>o Place EDG (B) CONTROL SWITCH in MAINT at panel 93ECP-(B)</li> <li>o Place EDG (B) CNTRL switch to STOP at panel 09-8</li> <li>• Report EDG (B) is shutdown</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |
| <b>On Lead Examiner Cue: ACTIVATE TRIGGER 4</b><br>Seismic event and L26 fault                                             | BOP / ATC | <ul style="list-style-type: none"> <li>• Recognize / report seismic alarm</li> <li>• Recognize / report L26 is de-energized</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | SAT / UNSAT / NA    |
|                                                                                                                            | SRO       | <ul style="list-style-type: none"> <li>• Enter AOP-19B (Loss of Switchgear L26)</li> <li>• Re-enter AOP-60 (Loss of RPS Bus B Power)</li> <li>• Re-enter AOP-19 (Loss of 10600 Bus)</li> <li>• Enter AOP-14 (Earthquake)</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                     |
| <b>Booth Operator:</b><br>When NPO directed to take EDG D Control Sw to MAINT, insert Remote DG23:D to Maint. (Trigger 11) | BOP       | <ul style="list-style-type: none"> <li>• Execute AOP-19B:               <ul style="list-style-type: none"> <li>o Shutdown EDG D                   <ul style="list-style-type: none"> <li>o Ensure EDG (D) load breaker (71-10612) is tripped and placed in PULL TO LOCK position</li> <li>o Ensure EDG tie breaker (10604) is tripped</li> <li>o Place EDG (D) CONTROL SWITCH in MAINT at panel 93ECP-(D)</li> <li>o Place EDG (D) CNTRL switch to STOP at panel 09-8</li> </ul> </li> <li>o Supply cooling water to B &amp; D EDGs from ESW Pump 46P-2A per OP-22 Section G.24:                   <ul style="list-style-type: none"> <li>o Verify EDGs A and C are shutdown</li> <li>o Verify ESW Pump 46P-2B is not available</li> </ul> </li> </ul> </li> </ul> | SAT / UNSAT / NA    |

| INSTRUCTOR ACTIVITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | COMMENTS/EVALUATION |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <p><b>Booth Operator:</b><br/>When NPO directed to take EDG A and C Control Sw to MAINT, insert Remote DG23:A and DG:23C to Maint. (Trigger 12)</p> <p>When NPO directed to realign ESW valves, wait 3 minutes, insert Remote SW21 to 100% (Trigger 13).</p> <p><b>Role Play:</b><br/>If dispatched as NPO, wait 2 minutes and report 27SOV-129A is open.</p> <p><b>Role Play:</b><br/>If called as NMP2 or National Earthquake Information Center, report that you have detected a seismic event of greater than 0.01g but less than 0.08g.</p> | BOP cont. | <ul style="list-style-type: none"> <li>○ Verify ESW Pump 46P-2A is available</li> <li>○ Place the following switches in MAINT to prevent EDG operation: <ul style="list-style-type: none"> <li>○ EDG A CONTROL SWITCH at panel 93ECP-A</li> <li>○ EDG C CONTROL SWITCH at panel 93ECP-C</li> </ul> </li> <li>○ Dispatch NPO to: <ul style="list-style-type: none"> <li>○ Unlock and close 46ESW-3A</li> <li>○ Open the following valves: <ul style="list-style-type: none"> <li>○ 46ESW-2A</li> <li>○ 46ESW-2B</li> </ul> </li> <li>○ Ensure ESW Pump 46P-2A is running</li> <li>○ Ensure closed the following valves: <ul style="list-style-type: none"> <li>○ ESW SYS B INJ VLV 46MOV-101B</li> <li>○ ESW SYS B TEST VLV 46MOV-102B</li> </ul> </li> </ul> </li> <li>• Re-execute AOP-60, as necessary</li> <li>• Re-execute AOP-19, as necessary</li> <li>• Execute AOP-14 <ul style="list-style-type: none"> <li>○ Dispatch plant operators for inspections</li> <li>○ Dispatch plant operator to ensure open 27SOV-129A or 27SOV-129B</li> <li>○ Call NMP2 and/or National Earthquake Information Center for confirmation of seismic activity</li> <li>○ Direct I&amp;C to analyze seismic tapes</li> </ul> </li> </ul> |                     |

| INSTRUCTOR ACTIVITY                                                                     | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | COMMENTS/EVALUATION |
|-----------------------------------------------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>On Lead Examiner Cue:</b><br><b>ACTIVATE TRIGGER 6</b><br>Unisolable HPCI steam leak | BOP / ATC | <ul style="list-style-type: none"> <li>Recognize / report rising RB pressure</li> <li>Recognize / report rising HPCI area temperatures</li> <li>Recognize / report HPCI alarms               <ul style="list-style-type: none"> <li>09-3-3-2 DIV I AMBIENT TEMP HI</li> <li>09-3-3-33 HPCI ISOL TRIP INITIATED</li> </ul> </li> <li>Dispatches NPO to inspect drywell entrance</li> <li>Recognize / report 23MOV-15 (INBD STM SUPP VLV) does not isolate automatically</li> <li>Manually attempt to close 23MOV-15</li> <li>Report 23MOV-15 can not be closed due to MOV being de-energized</li> </ul> | SAT / UNSAT / NA    |
| <b>Critical Task #1</b>                                                                 |           | Given the plant operating at power with an unisolable primary system discharging into Secondary Containment, the crew will insert a manual Reactor scram, in accordance with EOP-5.                                                                                                                                                                                                                                                                                                                                                                                                                    | Pass / Fail         |
| <b>Critical Task #1 Standard:</b>                                                       |           | Manual Scram pushbuttons (preferred) depressed<br>OR<br>Mode Switch placed in Shutdown                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                     |
|                                                                                         | SRO       | <ul style="list-style-type: none"> <li>Acknowledge reports</li> <li>Enter EOP-5 (Secondary Containment Control)</li> <li>Direct maximizing Reactor Building area cooling</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                    |                     |



| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | COMMENTS/EVALUATION                         |
|---------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
|                     |           | <ul style="list-style-type: none"> <li>• Direct local area evacuation of Reactor Building</li> <li>• Set benchmark for HPCI area temperatures</li> <li>• Enter EOP-2</li> <li>• Direct manual Reactor scram</li> <li>• Direct Reactor pressure control 900 to 1000 psig</li> <li>• Direct RPV level control 177-222.5 inches</li> <li>• Direct a Reactor cooldown &lt;100°F/hr</li> <li>• Monitor for 2 Max Safe values</li> <li>• May anticipate Emergency Depressurization and rapidly depressurize RPV with Turbine Bypass Valves</li> </ul> |                                             |
|                     | ATC       | <ul style="list-style-type: none"> <li>• <b>Depress manual Scram pushbuttons</b></li> <li>• <b>Place Mode Switch to Shutdown</b></li> <li>• Report all control rods have inserted</li> <li>• Enter AOP-1               <ul style="list-style-type: none"> <li>○ Fully insert IRMs and SRMs</li> <li>○ Observe Reactor power downscale on APRMs</li> </ul> </li> </ul>                                                                                                                                                                           | SAT / UNSAT / NA<br><b>Critical Task #1</b> |
|                     | ATC cont. | <ul style="list-style-type: none"> <li>○ Observe SDIV vent and drain valves closed</li> <li>○ Ensure Main Turbine is tripped</li> <li>○ Verify 4 KV loads transfer to reserve power</li> <li>○ Transfer APRM/IRM recorders to IRMs</li> <li>○ Down-range IRMs</li> <li>○ Monitor Reactor pressure control on the Turbine Bypass</li> </ul>                                                                                                                                                                                                      |                                             |

| INSTRUCTOR ACTIVITY               | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | COMMENTS/EVALUATION |
|-----------------------------------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|                                   |           | Valves <ul style="list-style-type: none"> <li>May open Turbine Bypass Valves to initiate cooldown or rapidly depressurize RPV in anticipation of Emergency Depressurization</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                        |                     |
|                                   | BOP       | <ul style="list-style-type: none"> <li>Announce Reactor Building Evacuation</li> <li>Enter AOP-1               <ul style="list-style-type: none"> <li>Control RPV water level between 177 and 222.5" using any of the following methods:                   <ul style="list-style-type: none"> <li>Adjust feedwater level control auto-setpoint</li> <li>Take manual control of reactor feed pump and adjust FDWTR STARTUP VLV (34FCV-137)</li> <li>Operate RCIC per OP-19 Section D</li> <li>Operate HPCI per OP-15 Section D</li> </ul> </li> </ul> </li> <li>Verify Group 2 isolation per AOP-15</li> </ul> | SAT / UNSAT / NA    |
|                                   | BOP / ATC | <ul style="list-style-type: none"> <li>Update crew on RB area temperatures</li> <li>Report two area temperatures above Max Safe Value</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                              | SAT / UNSAT / NA    |
| <b>Critical Task #2</b>           |           | Given an unisolable primary system discharging into Secondary Containment, two areas exceeding Maximum Safe Temperatures, and failure of multiple SRVs to open, the crew will rapidly depressurize the RPV, in accordance with EOP-2.                                                                                                                                                                                                                                                                                                                                                                         | Pass / Fail         |
| <b>Critical Task #2 Standard:</b> |           | Rapidly depressurize the RPV using one or more Group 2 Pressure Control Systems.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |

| INSTRUCTOR ACTIVITY | POSITION  | OPERATOR ACTIONS/STANDARD                                                                                                                                                                                                                                                                                                                                        | COMMENTS/EVALUATION                                    |
|---------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
|                     | SRO       | <ul style="list-style-type: none"> <li>• Recognize / acknowledge two area temperatures above Max Safe Value</li> <li>• Enter Emergency Depressurization leg of EOP-2</li> <li>• Direct 7 ADS valves opened</li> <li>• Acknowledge SRVs fail to open</li> <li>• Direct rapid depressurization of RPV with one or more Group 2 Pressure Control Systems</li> </ul> |                                                        |
|                     | BOP / ATC | <ul style="list-style-type: none"> <li>• Attempts to opens 7 ADS valves</li> <li>• Reports no ADS valves open</li> <li>• Reports no SRVs will open</li> <li>• <b>Rapidly depressurize RPV using one or more Group 2 Pressure Control System</b></li> </ul>                                                                                                       | <p>SAT / UNSAT / NA</p> <p><b>Critical Task #2</b></p> |

#### Termination Criteria:

- All control rods are inserted
- RPV is being rapidly depressurized with Group 2 Pressure Control Systems
- Reactor water level is controlled 177-222.5"

## ATTACHMENT 1

| <b>C. Shift Turnover</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The Plant is operating at approximately 5% power with a start-up in progress.</p> <p>RFP A is out of service for maintenance.</p> <p>When you take the shift, complete the following:</p> <ol style="list-style-type: none"><li>1. Withdraw the next two control rods in the start-up sequence (26-51 and 50-27, from position 00 to 12).</li><li>2. Then, perform OP-65 steps D.20.2 through D.20.4 to place the Mode Switch to RUN and withdraw IRMs.</li><li>3. Then, continue control rod withdrawals per the start-up sequence.</li></ol> |