ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO	14-2 NRC RO COO1	TASK TITLE: Perform RHR Lineup Verification Per ST-2AN
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.1.31 (4.6)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________ LOGIN ID:

JPM Completion Perform

Location: Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

CANDIDATE REVIEW:

____
SIGNATURE

REVIEWED BY: ______________________ DOC. COMPLETE: ______________________
PROGRAM ADMINISTER

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO	14-2 NRC RO COO1	TASK TITLE: Perform RHR Lineup Verification Per ST-2AN
APPL. TO	JPM NUMBER	

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update _____ By: _____
Date Int

Previous Revision Date:

RO	14-2 NRC RO COO1	TASK TITLE: Perform RHR Lineup Verification Per ST-2AN
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-2AN, RHR Loop A Monthly Operability Test

III. TOOLS AND EQUIPMENT

- None

IV. SET UP REQUIREMENTS

A. Provide a copy of ST-2AN completed up to step 8.1.
B. Reset the simulator to an IC (IC-66) with RHR in a normal standby lineup, except for the following:
   a. 10MOV-16A, MIN FLOW VLV, is closed.
   b. 10MOV-66A, HX A BYP VLV, is closed.
   c. 10MOV-57, RHR DISCH TO RADW, is open.
   d. 10MOV-18, SHUTDOWN CLG SUCT, is open.

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 <u>not</u> actually performed.
C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, placekeeping and three-point communication.
D. 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

A. ST-2AN, RHR Loop A Monthly Operability Test, is in progress.
B. Other operators have prepared ST-2AN up to Section 8.1.
C. RHR Loop A level switches are operable.
D. RHR Loop A is in the standby LPCI lineup.

VII. INITIATING CUE

Inform the candidate, "Complete ST-2AN Sections 8.1 and 8.2."

RO 14-2 NRC RO COO1

TASK TITLE: Perform RHR Lineup Verification

- CRITICAL STEP

	STEP	STANDARD	EVALUATION / COMMENT
1.	IF 10LS-100 (RHR loop A containment spray line level switch) and 10LS-101 (RHR loop' A LPCI keep-full level switch) are operable, THEN perform the following: Verify RHR Loop A keep-full level switch alarms are clear by one of the following methods: • Verify lights for 10LS-100 and 10LS-101 are off on alarm module 10-74-1-44 inside panel AR-8 in relay room • Verify associated EPIC points (EPIC-D-129 and EPIC-D-130) indicate NORMAL	Contacts Operator in Relay Room to verify lights for 10LS-100 and 10LS-101 are OFF on alarm module 10-74-1-44 inside panel AR-8 **EVALUTOR ROLE PLAY:** Inform the Candidate that the lights for 10LS-100 and 10LS-101 are OFF. -OR- Utilizes any EPIC station and verifies points EPIC-D-129 and EPIC-D-130 indicate NORMAL	SAT / UNSAT
2.	Mark Steps 8.1.2 through 8.1.10 N/A	Marks Steps 8.1.2 through 8.1.10 N/A	SAT / UNSAT
*3.	IF RHR Loop A is in standby LPCI lineup per OP-13, Section E, THEN perform the following: Verify the following lineup at panel 09-3: • MAN INJ VLV 10RHR-81A – Open • RHR HX A DISCH TO TORUS OR RCIC 10AOV-71A – Closed • VLV CNTRL 10AOV-7IA 10A-S41A - CLOSE • LPCI OUTBD INJ VLV 10MOV-27A - Open	Verifies the following lineup at panel 09-3 and documents in ST-2AN: • MAN INJ VLV 10RHR-81A – Open • RHR HX A DISCH TO TORUS OR RCIC 10AOV-71A – Closed • VLV CNTRL 10AOV-71A 10A-S41A - CLOSE • LPCI OUTBD INJ VLV 10MOV-27A - Open	**CRITICAL STEP** **(bolded items only)** SAT / UNSAT

TASK TITLE: **Perform RHR Lineup Verification**

	STEP	STANDARD	EVALUATION / COMMENT
3. (cont.)	Verify the following lineup at panel 09-3 (cont.): • LPCI INBD INJ VLV 10MOV-25A – Closed • MIN FLOW VLV 10MOV-16A – Open • DW SPRAY OUTBD VLV 10MOV-26A – Closed • DW SPRAY INBD VLV 10MOV-31A – Closed • HX A INLET VLV 10MOV-65A - Open • HX A OUTLET VLV 10MOV-12A – Open • HX A BYP VLV 10MOV-66A – Open • RHR TEST TORUS CLG & SPRAY 10MOV-39A – Closed • TORUS SPRAY INBD VLV 10MOV-38A – Closed	Verifies the following lineup at panel 09-3 and documents in ST-2AN (cont.): • LPCI INBD INJ VLV 10MOV-25A – Closed • *** MIN FLOW VLV 10MOV-16A – *Closed*** **EVALUATOR NOTE:** The bolded items in this step are improperly aligned. Should the Candidate inform the CRS that the ST cannot be continued due to the improperly aligned item, inform the Candidate the deviation has been noted, continue with the ST, and the deviation will be corrected by another Operator later. • DW SPRAY OUTBD VLV 10MOV-26A – Closed • DW SPRAY INBD VLV 10MOV-31A – Closed • HX A INLET VLV 10MOV-65A - Open • HX A OUTLET VLV 10MOV-12A – Open • ***HX A BYP VLV 10MOV-66A – *Closed*** • RHR TEST TORUS CLG & SPRAY 10MOV-39A – Closed • TORUS SPRAY INBD VLV 10MOV-38A – Closed	**CRITICAL STEP** **(bolded items only)** SAT / UNSAT

TASK TITLE: **Perform RHR Lineup Verification**

	STEP	STANDARD	EVALUATION / COMMENT
3. (cont.)	Verify the following lineup at panel 09-3 (cont.): • RHR TEST & TORUS CLG 10MOV-34A – Closed • RHRSW TO RHR 10MOV-148A – Closed • TORUS SUCT VLV 10MOV-13A – Open • SHUTDOWN CLG SUCT VLV 10MOV-15A – Closed • TORUS SUCT VLV 10MOV-13C – Open • SHUTDOWN CLG SUCT VLV 10MOV-15C – Close • RHRSW DISCH VLV FROM HX A 10MOV-89A – Closed • HX A INBD VENT VLV 10MOV-166A – Closed • HX A OUTBD VENT VLV 10MOV-167A – Closed • RHRSW TO RHR 10MOV-149A – Closed • RHR DISCH TO RADW 10MOV-67 – Closed • SHUTDOWN CLG SUCT 10MOV-17 – Closed	Verifies the following lineup at panel 09-3 and documents in ST-2AN (cont.): • RHR TEST & TORUS CLG 10MOV-34A – Closed • RHRSW TO RHR 10MOV-148A -- Closed • TORUS SUCT VLV 10MOV-13A -- Open • SHUTDOWN CLG SUCT VLV 10MOV-15A – Closed • TORUS SUCT VLV 10MOV-13C -- Open • SHUTDOWN CLG SUCT VLV 10MOV-15C – Close • RHRSW DISCH VLV FROM HX A 10MOV-89A – Closed • HX A INBD VENT VLV 10MOV-166A – Closed • HX A OUTBD VENT VLV 10MOV-167A – Closed • RHRSW TO RHR 10MOV-149A – Closed • RHR DISCH TO RADW 10MOV-67 – Closed • SHUTDOWN CLG SUCT 10MOV-17 – Closed	**CRITICAL STEP** **(bolded items only)** SAT / UNSAT

TASK TITLE: **Perform RHR Lineup Verification**

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Verify the following lineup at panel 09-4: • RHR DISCH TO RADW 10MOV-57 – Closed • SHUTDOWN CLG SUCT 10MOV-18 – Closed	Verifies the following lineup at panel 09-4 and documents in ST-2AN (cont.): • ***RHR DISCH TO RADW 10MOV-57 – *Open*** • ***SHUTDOWN CLG SUCT 10MOV-18 – *Open*** **EVALUATOR NOTE:** The bolded items above are improperly aligned. Should the Candidate inform the CRS that the ST cannot be continued due to the improperly aligned item, inform the Candidate the deviation has been noted, continue with the ST, and the deviation will be corrected by another Operator later.	**CRITICAL STEP** **(bolded items only)** SAT / UNSAT
	EVALUATOR: Terminate the task at this point.		

Task Standard: RHR lineup verification performed. Improper lineup of minimum flow valve, heat exchanger bypass valve, discharge valve to Radwaste, and shut down cooling isolation valve identified.

HANDOUT

- ST-2AN, RHR Loop A Monthly Operability Test, is in progress.
- Other operators have prepared ST-2AN up to Section 8.1.
- RHR Loop A level switches are operable.
- RHR Loop A is in the standby LPCI lineup.

Complete ST-2AN Sections 8.1 and 8.2.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

APPL. TO	JPM NUMBER	TASK TITLE:
RO	NRC 14-2 RO COO2	Re-activation of RO License

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.1.4 (3.3)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: ____________________ OPERATIONS REVIEW: ____________________

APPROVED: ____________________

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CANDIDATE NAME: ____________________

JPM Completion Location: Perform Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

CANDIDATE REVIEW: ______________________________
SIGNATURE

REVIEWED BY: ______________________________ DOC. COMPLETE: ____________________
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

RO	NRC 14-2 RO COO2	TASK TITLE:	Re-activation of RO License
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

RO	NRC 14-2 RO COO2	TASK TITLE: Re-activation of RO License
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ODSO-30, Maintenance of NRC Licenses and STA Qualifications

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. None

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.

VI. TASK CONDITIONS

A. You are a Reactor Operator (RO) and your RO license became inactive on July 1, 2014.

B. You have been directed to re-activate your license during the 3rd quarter to stand an RO watch on October 4, 2014.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Complete the following worksheet regarding re-activation of your license. Consider each item separately and circle the correct response for each item as follows:

Yes - This **IS** required for license re-activation and it meets the standard.

No – This **IS** required for license re-activation, but it does **NOT** meet the standard.

N/R – This is **NOT** required for license re-activation."

EVALUATOR: Provide the candidate with the attached handout and worksheet. Provide ODSO-30 if requested.

	STEP	STANDARD	EVALUATION / COMMENT
*1.	Evaluates worksheet step 1 regarding requalification training.	Circles Yes for worksheet step 1. **EVALUATOR NOTE:** This step meets the required standard of being current in requal, which includes passing all exams with at least an 80%.	**CRITICAL STEP** SAT / UNSAT
*2.	Evaluates worksheet step 2 regarding a plant tour.	Circles No for worksheet step 2. **EVALUATOR NOTE:** This step does not meet the required standard of the plant tour being supervised by an SRO.	**CRITICAL STEP** SAT / UNSAT
*3.	Evaluates worksheet step 3 regarding proposed under-instruction watch Schedule A.	Circles No for worksheet step 3 Schedule A. **EVALUATOR NOTE:** The RB NPO position does not count towards the required 40 hours on-shift, leaving only 36 hours.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Evaluates worksheet step 3 regarding proposed under-instruction watch Schedule B.	Circles No for worksheet step 3 Schedule B. **EVALUATOR NOTE:** This step does not meet the required standard of the 40 hours of on-shift time being performed in the same calendar quarter.	**CRITICAL STEP** SAT / UNSAT
*5.	Evaluates worksheet step 3 regarding proposed under-instruction watch Schedule C.	Circles Yes for worksheet step 3 Schedule C. **EVALUATOR NOTE:** This step meets the required standard of 4 12-hour shifts during the same calendar quarter.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

EVALUATOR'S KEY

1. You have attended all requal training and passed all quizzes/exams. However your written grade average is 84% and you are on a PIP until it is greater than 85%. This is not expected until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

2. On your own time, you and a friend (who has an active RO license) came in and took a complete tour of the plant. Neither the Shift Manager nor the Control Room Supervisor were aware of this.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

3. Below are three proposed schedules for you to stand the watch under instruction.

	Date	Position	Hours	Attend All Turnovers?
Schedule A	Sept 12	SNO	12	Yes
	Sept 13	SNO	12	Yes
	Sept 20	RB NPO	12	Yes
	Sept 21	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule B	Sept 28	SNO2	12	Yes
	Sept 29	SNO	12	Yes
	Sept 30	SNO	12	Yes
	Oct 01	SNO	12	Yes
	Oct 02	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule C	Sept 22	SNO	12	Yes
	Sept 23	SNO	12	Yes
	Sept 24	RB NPO	8	No (last 4 hrs of shift in Work Control)
	Sept 25	SNO	12	Yes
	Sept 27	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

HANDOUT

- **You are a Reactor Operator (RO) and your RO license became inactive on July 1, 2014.**
- **You have been directed to re-activate your license during the 3rd quarter to stand an RO watch on October 4, 2014.**

Complete the following worksheet regarding re-activation of your license. Consider each item separately and circle the correct response for each item as follows:

Yes - This **IS** required for license re-activation and it meets the standard.

No – This **IS** required for license re-activation, but it does **NOT** meet the standard.

N/R – This is **NOT** required for license re-activation.

WORKSHEET

1. You have attended all requal training and passed all quizzes/exams. However your written grade average is 84% and you are on a PIP until it is greater than 85%. This is not expected until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

2. On your own time, you and a friend (who has an active RO license) came in and took a complete tour of the plant. Neither the Shift Manager nor the Control Room Supervisor were aware of this.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

3. Below are three proposed schedules for you to stand the watch under instruction.

	Date	Position	Hours	Attend All Turnovers?
Schedule A	Sept 12	SNO	12	Yes
	Sept 13	SNO	12	Yes
	Sept 20	RB NPO	12	Yes
	Sept 21	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule B	Sept 28	SNO2	12	Yes
	Sept 29	SNO	12	Yes
	Sept 30	SNO	12	Yes
	Oct 01	SNO	12	Yes
	Oct 02	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule C	Sept 22	SNO	12	Yes
	Sept 23	SNO	12	Yes
	Sept 24	RB NPO	8	No (last 4 hrs of shift in Work Control)
	Sept 25	SNO	12	Yes
	Sept 27	SNO	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO	NRC 14-2 RO EC	TASK TITLE:	Perform ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.2.12 (3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ____________

ESTIMATED COMPLETION TIME: 45 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion Location: Perform Classroom

DATE PERFORMED: ____________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

CANDIDATE REVIEW: ______________________________
SIGNATURE

REVIEWED BY: ______________________________ DOC. COMPLETE: ______________________
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

RO	NRC 14-2 RO EC	TASK TITLE:	Perform ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

RO	NRC 14-2 RO EC	TASK TITLE: Perform ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-23C, Jet Pump Operability Test for Two Loop Operation

III. TOOLS AND EQUIPMENT

A. Calculator

IV. SET UP REQUIREMENTS

A. Prepare a copy of ST-23C filled out up to step 8.1.

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.

VI. TASK CONDITIONS

A. ST-23C, Jet Pump Operability Test for Two Loop Operation (EPIC Available), is in progress.

B. The required data for completing ST-23C is included on the provided handout.

C. Baseline data collection is complete and an "established pattern" exists.

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Perform ST-23C steps 8.1 through 8.4. Then assess the results against the Level 1 Acceptance Criteria of section 10.1.1 and 10.1.2 by completing the provided worksheet."

EVALUATOR: Provide the candidate with the attached handout, worksheet, and the prepared copy of ST-23C.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Record data for ST-23C step 8.1.	Records data for ST-23C section 8.1 per the provided key. **EVALUATOR NOTE:** It is acceptable for all values to be rounded to the nearest whole number.	SAT / UNSAT
2.	Calculate the value for ST-23C step 8.2.	Calculates and records a value of 6.5 Mlbm/hr per the provided key.	SAT / UNSAT
3.	Record data for ST-23C step 8.3 on Attachment 5.	Records data for ST-23C step 8.3 on Attachment 5 per the provided key. **EVALUATOR NOTE:** It is acceptable for all values to be rounded to the nearest whole number.	SAT / UNSAT
4.	Record data for ST-23C step 8.4 on Attachment 2.	Record data for ST-23C step 8.4 on Attachment 2 per the provided key. **EVALUATOR NOTE:** It is acceptable for all values to be rounded to the nearest whole number.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*5.	Assess Level 1 Acceptance Criteria 10.1.1.	Determines Level 1 Acceptance Criteria 10.1.1 is UNSAT and provides brief description of why (see provided key). **EVALUATOR NOTE:** Level 1 Acceptance Criteria 10.1.1 is NOT met because total core flow is greater than 70% and Recirculation loop jet pump flow mismatch is greater than 3.85 Mlbm/hr (5%).	**CRITICAL STEP** SAT / UNSAT
*6.	Assess Level 1 Acceptance Criteria 10.1.2.	Determines Level 1 Acceptance Criteria 10.1.2 is UNSAT and provides brief description of why (see provided key). **EVALUATOR NOTE:** Level 1 Acceptance Criteria 10.1.2 is NOT met because both: • Loop A flows are greater than 5% from predicted on Attachments 3 and 4 AND • Jet Pump 3 and 4 dPs are greater than 20% below established values.	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Init

8.0 **PROCEDURE**

8.1 Record the following:

8.1.1 Total Core Flow 93.5 (% rated) EPIC-A-3330 TH

8.1.2 Loop A Jet Pump Flow 32.5 Mlbm/hr 02-3FI-92A TH

8.1.3 Loop B Jet Pump Flow 39.0 Mlbm/hr 02-3FI-92B TH

8.1.4 A Pump Speed = 60 x $3\sqrt{\text{pump power}}$ - 1.3 =

60 x $3\sqrt{2.63}$ - 1.3 = 81.5 % A-399 TH

8.1.5 B Pump Speed = 58.5 x $3\sqrt{\text{pump power}}$ + 1.9 =

58.5 x $3\sqrt{2.61}$ + 1.9 = 82.4 % A-400 TH

8.1.6 A Recirc Loop Flow 17.422 Mlbm/hr EPIC-A-3317 TH

8.1.7 B Recirc Loop Flow 16.602 Mlbm/hr EPIC-A-3318

TH

8.2 Calculate the absolute value of:

|(8.1.2) - (8.1.3)| = 6.5 Mlbm/hr TH

ATTACHMENT 2 Page 1 of 1

ST 23C DATA FOR REACTOR ENGINEERING SUPPORT

Today / 0730
Date/Time

A.	Recirc Loop A flow (EPIC-A-3317)	17.422	Mlbm/hr
B.	Recirc Loop B flow (EPIC-A-3318)	16.602	Mlbm/hr
C.	Rx Total Core Flow (EPIC-A-0414)	71.4	Mlbm/hr
D.	EPIC-A-6254, WTSUB	72.9	Mlbm/hr
E.	Recirc Pump A Speed (02-184SI-16A1 at panel 09-4)	82.46	%
F.	Recirc Pump B Speed (02-184SI-16B1 at panel 09-4)	82.50	%
G.	Recirc Pump A Speed A-399 Calc.	81.5	%
H.	Recirc Pump B Speed A-400 Calc	82.4	%
I.	RWR Loop A Jet Pump Flow (02-3FI-92A at panel 09-4)	32.5	lbs/hr x 10^6
J.	RWR Loop B Jet Pump Flow (02-3FI-92B at panel 09-4)	39.0	lbs/hr x 10^6
K.	Double Tapped JP 1 Flow (02-3FI-87A at panel 09-4)	3.45	lbs/hr x 10^6
L.	Double Tapped JP 6 Flow (02-3FI-87C at panel 09-4)	3.3	lbs/hr x 10^6
M.	Double Tapped JP 11 Flow (02-3FI-87B at panel 09-4)	4.0	lbs/hr x 10^6
N.	Double Tapped JP 16 Flow (02-3FI-87D at panel 09-4)	4.1	lbs/hr x 10^6
O.	EPIC-A-3382 RECIRC LOOP A AVE JET PMP %PSID	31.01	%psid
P.	EPIC-A-3381 RECIRC LOOP B AVE JET PMP %PSID	48.71	%psid
Q.	EPIC-A-405 RX CORE DIFF PRES	17.6	psid
R.	EPIC-A-3390 P6 10 MIN AVG CORE THERMAL POWER	2437.8	mwth

ATTACHMENT 5

LOOP AVERAGE dP vs. JET PUMP dP

LOOP A AVG % PSID	JP 1 -20%	JP 1 +20%	JP 2 -20%	JP 2 +20%	JP 3 -20%	JP 3 +20%	JP 4 -20%	JP 4 +20%	JP 5 -20%	JP 5 +20%
5	4.4	6.6	4.0	6.0	3.6	5.5	4.2	6.3	4.9	7.3
6	5.3	7.9	4.8	7.2	4.4	6.6	5.0	7.5	5.8	8.7
7	6.1	9.2	5.6	8.4	5.1	7.7	5.8	8.6	6.7	10.1
8	7.0	10.5	6.4	9.6	5.9	8.8	6.6	9.8	7.6	11.5
9	7.8	11.7	7.2	10.8	6.6	9.9	7.3	11.0	8.8	12.9
10	8.7	13.0	8.0	12.0	7.4	11.0	8.1	12.2	9.5	14.2
11	9.5	14.3	8.8	13.2	8.1	12.2	8.9	13.4	10.4	15.6
12	10.3	15.5	9.6	14.4	8.9	13.3	9.7	14.5	11.3	17.0
13	11.2	16.8	10.4	15.6	9.6	14.4	10.5	15.7	12.2	18.4
14	12.0	18.0	11.2	16.8	10.4	15.5	11.2	16.9	13.2	19.7
15	12.9	19.3	12.0	18.0	11.1	16.7	12.0	18.0	14.1	21.1
16	13.7	20.5	12.8	19.2	11.9	17.8	12.8	19.2	15.0	22.5
17	14.5	21.8	13.6	20.4	12.6	18.9	13.6	20.3	15.9	23.8
18	15.3	23.0	14.4	21.6	13.4	20.0	14.3	21.5	16.8	25.2
19	16.2	24.3	15.2	22.8	14.1	21.2	15.1	22.6	17.7	26.5
20	17.0	25.5	16.0	24.0	14.9	22.3	15.9	23.8	18.6	27.9
21	17.8	26.7	16.8	25.2	15.6	23.4	16.8	24.9	19.5	29.2
22	18.6	28.0	17.6	26.4	16.4	24.6	17.4	26.1	20.4	30.6
23	19.5	29.2	18.4	27.6	17.1	25.7	18.1	27.2	21.3	31.9
24	20.3	30.4	19.2	28.7	17.9	26.8	18.9	28.3	22.2	33.3
25	21.1	31.7	20.0	29.9	18.6	28.0	19.7	29.5	23.1	34.6
26	21.9	32.9	20.8	31.1	19.4	29.1	20.4	30.6	24.0	35.9
27	22.8	34.1	21.5	32.3	20.1	30.2	21.2	31.7	24.9	37.3
28	23.6	35.4	22.3	33.5	20.9	31.4	21.9	32.9	25.8	38.6
29	24.4	36.6	23.1	34.7	21.7	32.5	22.7	34.0	26.6	40.0
30	25.2	37.8	23.9	35.9	22.4	33.6	23.4	35.1	27.5	41.3
31	26.0	39.0	24.7	37.1	23.2	34.8	24.2	36.3	28.4	42.6
32	26.8	40.3	25.5	38.3	23.9	35.9	24.9	37.4	29.3	44.0
33	27.7	41.5	26.3	39.5	24.7	37.0	25.7	38.5	30.2	45.3
34	28.5	42.7	27.1	40.6	25.5	38.2	26.4	39.6	31.1	46.6
35	29.3	43.9	27.9	41.8	26.2	39.3	27.2	40.8	32.0	47.9
36	30.1	45.1	28.7	43.0	27.0	40.5	27.9	41.9	32.9	49.3
37	30.9	46.4	29.5	44.2	27.7	41.6	28.7	43.0	33.7	50.6
38	31.7	47.6	30.3	45.4	28.5	42.7	29.4	44.1	34.6	51.9
39	32.5	48.8	31.1	46.6	29.2	43.9	30.2	45.2	35.5	53.2
40	33.3	50.0	31.8	47.8	30.0	45.0	30.9	46.4	36.4	54.6
41	34.1	51.2	32.6	49.0	30.8	46.2	31.7	47.5	37.3	55.9
42	35.0	52.4	33.4	50.1	31.5	47.3	32.4	48.6	38.1	57.2
43	35.8	53.6	34.2	51.3	32.3	48.4	33.1	49.7	39.0	58.5
44	36.6	54.9	35.0	52.5	33.1	49.6	33.9	50.8	39.9	59.8
45	37.4	56.1	35.8	53.7	33.8	50.7	34.6	51.9	40.8	61.2
46	38.2	57.3	36.6	54.9	34.6	51.9	35.4	53.1	41.7	62.5
47	39.0	58.5	37.4	56.1	35.3	53.0	36.1	54.2	42.5	63.8
48	39.8	59.7	38.2	57.3	36.1	54.1	36.8	55.3	43.4	65.1
49	40.6	60.9	39.0	58.5	36.9	55.3	37.6	56.4	44.3	66.4
50	41.4	62.1	39.8	59.6	37.6	56.4	38.3	57.5	45.2	67.7
51	42.2	63.3	40.6	60.8	38.4	57.6	39.1	58.6	46.0	69.1
52	43.0	64.5	41.3	62.0	39.1	58.7	39.8	59.7	46.9	70.4
53	43.8	65.7	42.1	63.2	39.9	59.9	40.5	60.8	47.8	71.7
54	44.6	66.9	42.9	64.4	40.7	61.0	41.3	61.9	48.7	73.0
55	45.4	68.1	43.7	65.6	41.4	62.2	42.0	63.0	49.5	74.3
56	46.2	69.3	44.5	66.8	42.2	63.3	42.7	64.1	50.4	75.6
57	47.0	70.6	45.3	67.9	43.0	64.4	43.5	65.2	51.3	76.9
58	47.8	71.8	46.1	69.1	43.7	65.6	44.2	66.3	52.1	78.2
59	48.6	73.0	46.9	70.3	44.5	66.7	45.0	67.4	53.0	79.5
60	49.4	74.2	47.7	71.5	45.3	67.9	45.7	68.5	53.9	80.8

Record dp for Loop A average and each jet pump using EPIC-A data points

3382 AVG	942 JP-1	944 JP-2	946 JP-3	948 JP-4	950 JP-5
31.01	*32.0*	*33.2*	*16.4*	*24.0*	*35.3*

Init *TH*

ATTACHMENT 5

LOOP AVERAGE dP vs. JET PUMP dP

LOOP A AVG % PSID	JP 6 -20%	JP 6 +20%	JP 7 -20%	JP 7 +20%	JP 8 -20%	JP 8 +20%	JP 9 -20%	JP 9 +20%	JP 10 -20%	JP 10 +20%
5.0	4.6	7.0	4.1	6.2	3.8	5.7	3.6	5.5	3.9	5.6
6.0	5.6	8.3	4.9	7.4	4.5	6.8	4.4	6.6	4.6	7.0
7.0	6.5	9.7	5.7	8.6	5.3	7.9	5.1	7.7	5.4	8.1
8.0	7.4	11.0	6.5	9.8	6.0	9.1	5.9	8.8	6.2	9.3
9.0	8.3	12.4	7.3	11.0	6.8	10.2	6.6	9.9	7.0	10.5
10.0	9.2	13.7	8.1	12.2	7.6	11.3	7.4	11.0	7.8	11.7
11.0	10.1	15.1	8.9	13.4	8.3	12.5	8.1	12.2	8.6	12.9
12.0	10.9	16.4	9.7	14.6	9.1	13.6	8.9	13.3	9.4	14.1
13.0	11.8	17.8	10.5	15.7	9.8	14.7	9.6	14.4	10.2	15.3
14.0	12.7	19.1	11.3	16.9	10.6	15.8	10.3	15.5	11.0	16.5
15.0	13.6	20.4	12.1	18.1	11.3	17.0	11.1	16.6	11.8	17.7
16.0	14.5	21.7	12.9	19.3	12.0	18.1	11.8	17.8	12.6	18.9
17.0	15.4	23.1	13.6	20.5	12.8	19.2	12.6	18.9	13.4	20.1
18.0	16.3	24.4	14.4	21.6	13.5	20.3	13.3	20.0	14.2	21.3
19.0	17.2	25.7	15.2	22.8	14.3	21.4	14.1	21.2	15.0	22.5
20.0	18.0	27.1	16.0	24.0	15.0	22.6	14.9	22.3	15.8	23.8
21.0	18.9	28.4	16.8	25.2	15.8	23.7	15.6	23.4	16.6	25.0
22.0	19.8	29.7	17.6	26.3	16.5	24.8	16.4	24.5	17.5	26.2
23.0	20.7	31.0	18.3	27.5	17.3	25.9	17.1	25.7	18.3	27.4
24.0	21.6	32.3	19.1	28.7	18.0	27.1	17.9	26.8	19.1	28.6
25.0	22.4	33.7	19.9	29.8	18.8	28.2	18.6	27.9	19.9	29.8
26.0	23.3	35.0	20.7	31.0	19.5	29.3	19.4	29.1	20.7	31.0
27.0	24.2	36.3	21.5	32.2	20.3	30.4	20.1	30.2	21.5	32.3
28.0	25.1	37.6	22.2	33.3	21.0	31.5	20.9	31.3	22.3	33.5
29.0	25.9	38.9	23.0	34.5	21.8	32.7	21.6	32.5	23.1	34.7
30.0	26.8	40.2	23.8	35.7	22.5	33.8	22.4	33.6	23.9	35.9
31.0	27.7	41.5	24.6	36.8	23.3	34.9	23.2	34.7	24.8	37.1
32.0	28.6	42.8	25.3	38.0	24.0	36.0	23.9	35.9	25.6	38.4
33.0	29.4	44.1	26.1	39.2	24.8	37.1	24.7	37.0	26.4	39.6
34.0	30.3	45.5	26.9	40.3	25.5	38.3	25.4	38.1	27.2	40.8
35.0	31.2	46.8	27.7	41.5	26.2	39.4	26.2	39.3	28.0	42.0
36.0	32.0	48.1	28.4	42.6	27.0	40.5	26.9	40.4	28.8	43.3
37.0	32.9	49.4	29.2	43.8	27.7	41.6	27.7	41.5	29.7	44.5
38.0	33.8	50.7	30.0	45.0	28.5	42.7	28.5	42.7	30.5	45.7
39.0	34.7	52.0	30.7	46.1	29.2	43.8	29.2	43.8	31.3	46.9
40.0	35.5	53.3	31.5	47.3	30.0	45.0	30.0	45.0	32.1	48.2
41.0	36.4	54.6	32.3	48.4	30.7	46.1	30.7	46.1	32.9	49.4
42.0	37.3	55.9	33.1	49.6	31.5	47.2	31.5	47.2	33.8	50.6
43.0	38.1	57.2	33.8	50.7	32.2	48.3	32.3	48.4	34.6	51.9
44.0	39.0	58.5	34.6	51.9	33.0	49.4	33.0	49.5	35.4	53.1
45.0	39.9	59.8	35.4	53.0	33.7	50.6	33.8	50.7	36.2	54.3
46.0	40.7	61.1	36.1	54.2	34.4	51.7	34.5	51.8	37.0	55.5
47.0	41.6	62.4	36.9	55.3	35.2	52.8	35.3	52.9	37.9	56.8
48.0	42.5	63.7	37.7	56.5	35.9	53.9	36.1	54.1	38.7	58.0
49.0	43.3	65.0	38.4	57.7	36.7	55.0	36.8	55.2	39.5	59.2
50.0	44.2	66.3	39.2	58.8	37.4	56.1	37.6	56.4	40.3	60.5
51.0	45.1	67.6	40.0	60.0	38.2	57.3	38.3	57.5	41.1	61.7
52.0	45.9	68.9	40.7	61.1	38.9	58.4	39.1	58.6	42.0	62.9
53.0	46.8	70.2	41.5	62.3	39.7	59.5	39.9	59.8	42.8	64.2
54.0	47.6	71.5	42.3	63.4	40.4	60.6	40.6	60.9	43.6	65.4
55.0	48.5	72.8	43.0	64.5	41.1	61.7	41.4	62.1	44.4	66.7
56.0	49.4	74.1	43.8	65.7	41.9	62.8	42.1	63.2	45.3	67.9
57.0	50.2	75.3	44.6	66.8	42.6	64.0	42.9	64.4	46.1	69.1
58.0	51.1	76.6	45.3	68.0	43.4	65.1	43.7	65.5	46.9	70.4
59.0	52.0	77.9	46.1	69.1	44.1	66.2	44.4	66.7	47.7	71.6
60.0	52.8	79.2	46.9	70.3	44.9	67.3	45.2	67.8	48.6	72.8

Record dp for Loop A average and each jet pump using EPIC-A data points

3382 AVG	952 JP-6	954 JP-7	956 JP-8	958 JP-9	960 JP-10
31.01	*30.3*	*35.1*	*34.8*	*34.0*	*35.0*

Init *TH*

ATTACHMENT 5

LOOP AVERAGE dP vs. JET PUMP dP

LOOP B AVG % PSID	JP 11 -20%	JP 11 +20%	JP 12 -20%	JP 12 +20%	JP 13 -20%	JP 13 +20%	JP 14 -20%	JP 14 +20%	JP 15 -20%	JP 15 +20%
5.0	4.0	6.0	4.1	6.1	3.8	5.6	3.8	5.8	4.2	6.3
6.0	4.8	7.3	4.9	7.3	4.5	6.8	4.6	6.9	5.1	7.6
7.0	5.6	8.5	5.7	8.5	5.3	7.9	5.4	8.0	5.9	8.9
8.0	6.4	9.7	6.5	9.7	6.1	9.1	6.1	9.2	6.8	10.2
9.0	7.2	10.9	7.3	10.9	6.8	10.3	6.9	10.3	7.6	11.4
10.0	8.1	12.1	8.1	12.1	7.6	11.4	7.6	11.5	8.5	12.7
11.0	8.9	13.3	8.9	13.3	8.4	12.6	8.4	12.6	9.3	14.0
12.0	9.7	14.5	9.7	14.5	9.2	13.7	9.1	13.7	10.2	15.3
13.0	10.5	15.7	10.5	15.7	9.9	14.9	9.9	14.9	11.1	16.6
14.0	11.3	16.9	11.2	16.9	10.7	16.1	10.7	16.0	11.9	17.9
15.0	12.1	18.1	12.0	18.1	11.5	17.2	11.4	17.1	12.6	19.2
16.0	12.9	19.3	12.8	19.2	12.3	18.4	12.2	18.3	13.7	20.5
17.0	13.7	20.5	13.6	20.4	13.1	19.6	12.9	19.4	14.5	21.8
18.0	14.5	21.7	14.4	21.6	13.8	20.8	13.7	20.5	15.4	23.1
19.0	15.3	22.9	15.2	22.8	14.6	21.9	14.4	21.7	16.2	24.4
20.0	16.1	24.1	16.0	24.0	15.4	23.1	15.2	22.8	17.1	25.7
21.0	16.9	25.3	16.8	25.2	16.2	24.3	15.9	23.9	18.0	27.0
22.0	17.7	26.6	17.6	26.4	17.0	25.5	16.7	25.0	18.8	28.3
23.0	18.5	27.8	18.4	27.5	17.8	26.6	17.5	26.2	19.7	29.6
24.0	19.3	29.0	19.1	28.7	18.5	27.8	18.2	27.3	20.6	30.9
25.0	20.1	30.2	19.9	29.9	19.3	29.0	19.0	28.4	21.4	32.2
26.0	20.9	31.4	20.7	31.1	20.1	30.2	19.7	29.6	22.3	33.5
27.0	21.7	32.6	21.5	32.3	20.9	31.4	20.5	30.7	23.2	34.8
28.0	22.5	33.8	22.3	33.4	21.7	32.5	21.2	31.8	24.1	36.1
29.0	23.3	35.0	23.1	34.6	22.5	33.7	22.0	33.0	24.9	37.4
30.0	24.1	36.2	23.9	35.8	23.3	34.9	22.7	34.1	25.8	38.7
31.0	24.9	37.4	24.6	37.0	24.1	36.1	23.5	35.2	26.7	40.0
32.0	25.7	38.6	25.4	38.1	24.8	37.3	24.2	36.3	27.5	41.3
33.0	26.5	39.8	26.2	39.3	25.6	38.5	25.0	37.5	28.4	42.6
34.0	27.4	41.0	27.0	40.5	26.4	39.6	25.7	38.6	29.3	43.9
35.0	28.2	42.2	27.8	41.7	27.2	40.8	26.5	39.7	30.1	45.2
36.0	29.0	43.4	28.6	42.8	28.0	42.0	27.2	40.8	31.0	46.5
37.0	29.8	44.6	29.3	44.0	28.8	43.2	28.0	42.0	31.9	47.8
38.0	30.6	45.8	30.1	45.2	29.6	44.4	28.7	43.1	32.8	49.1
39.0	31.4	47.1	30.9	46.4	30.4	45.6	29.5	44.2	33.6	50.5
40.0	32.2	48.3	31.7	47.5	31.2	46.8	30.2	45.3	34.5	51.8
41.0	33.0	49.5	32.5	48.7	32.0	48.0	31.0	46.5	35.4	53.1
42.0	33.8	50.7	33.2	49.9	32.8	49.1	31.7	47.6	36.3	54.4
43.0	34.6	51.9	34.0	51.0	33.6	50.3	32.5	48.7	37.1	55.7
44.0	35.4	53.1	34.8	52.2	34.4	51.5	33.2	49.8	38.0	57.0
45.0	36.2	54.3	35.6	53.4	35.1	52.7	34.0	51.0	38.9	58.3
46.0	37.0	55.5	36.4	54.6	35.9	53.9	34.7	52.1	39.8	59.6
47.0	37.8	56.7	37.2	55.7	36.7	55.1	35.5	53.2	40.6	60.9
48.0	38.6	57.9	37.9	56.9	37.5	56.3	36.2	54.3	41.5	62.3
49.0	39.4	59.1	38.7	58.1	38.3	57.5	37.0	55.5	42.4	63.6
50.0	40.2	60.3	39.5	59.2	39.1	58.7	37.7	56.6	43.3	64.9
51.0	41.0	61.5	40.3	60.4	39.9	59.9	38.5	57.7	44.1	66.2
52.0	41.8	62.7	41.0	61.6	40.7	61.1	39.2	58.8	45.0	67.5
53.0	42.6	63.9	41.8	62.7	41.5	62.3	40.0	60.0	45.9	68.8
54.0	43.4	65.1	42.6	63.9	42.3	63.5	40.7	61.1	46.8	70.1
55.0	44.2	66.3	43.4	65.1	43.1	64.7	41.5	62.2	47.6	71.4
56.0	45.0	67.5	44.2	66.2	43.9	65.9	42.2	63.3	48.5	72.8
57.0	45.8	68.8	44.9	67.4	44.7	67.1	43.0	64.4	49.4	74.1
58.0	46.6	70.0	45.7	68.6	45.5	68.2	43.7	65.6	50.3	75.4
59.0	47.4	71.2	46.5	69.7	46.3	69.4	44.5	66.7	51.1	76.7
60.0	48.2	72.4	47.3	70.9	47.1	70.6	45.2	67.8	52.0	78.0

Record dp for Loop B average and each jet pump using EPIC-A data points

3381 AVG	943 JP-11	945 JP-12	947 JP-13	949 JP-14	951 JP-15
48.71	*51.2*	*43.7*	*50.1*	*49.2*	*49.7*

Init *TH*

ATTACHMENT 5

LOOP AVERAGE dP vs. JET PUMP dP

LOOP B AVG % PSID	JP 16 -20%	JP 16 +20%	JP 17 -20%	JP 17 +20%	JP 18 -20%	JP 18 +20%	JP 19 -20%	JP 19 +20%	JP 20 -20%	JP 20 +20%
5.0	4.2	6.3	4.2	6.3	3.9	5.8	3.9	5.8	4.3	6.4
6.0	5.0	7.6	5.0	7.5	4.6	7.0	4.7	7.0	5.1	7.6
7.0	5.9	8.8	5.8	8.7	5.4	8.1	5.5	8.2	5.9	8.9
8.0	6.7	10.1	6.6	9.9	6.2	9.3	6.2	9.4	6.7	10.1
9.0	7.5	11.3	7.4	11.1	6.9	10.4	7.0	10.6	7.5	11.3
10.0	8.4	12.6	8.2	12.3	7.7	11.6	7.8	11.8	8.3	12.5
11.0	9.2	13.8	9.0	13.5	8.5	12.7	8.6	13.0	9.1	13.7
12.0	10.0	15.1	9.8	14.7	9.2	13.9	9.4	14.2	10.0	14.9
13.0	10.9	16.3	10.6	15.9	10.0	15.0	10.2	15.4	10.8	16.1
14.0	11.7	17.6	11.4	17.0	10.8	16.2	11.0	16.6	11.6	17.3
15.0	12.6	18.8	12.2	18.2	11.5	17.3	11.9	17.8	12.4	18.5
16.0	13.4	20.1	12.9	19.4	12.3	18.4	12.7	19.0	13.2	19.7
17.0	14.2	21.3	13.7	20.6	13.1	19.6	13.5	20.2	14.0	20.9
18.0	15.1	22.6	14.5	21.8	13.8	20.7	14.3	21.4	14.8	22.1
19.0	15.9	23.8	15.3	22.9	14.6	21.9	15.1	22.6	15.5	23.3
20.0	16.7	25.1	16.1	24.1	15.4	23.0	15.9	23.8	16.3	24.5
21.0	17.6	26.3	16.8	25.3	16.1	24.2	16.7	25.1	17.1	25.7
22.0	18.4	27.6	17.6	26.4	16.9	25.3	17.5	26.3	17.9	26.9
23.0	19.2	28.8	18.4	27.6	17.7	26.5	18.3	27.5	18.7	28.1
24.0	20.1	30.1	19.2	28.8	18.4	27.6	19.1	28.7	19.5	29.2
25.0	20.9	31.3	20.0	29.9	19.2	28.8	20.0	29.9	20.3	30.4
26.0	21.7	32.6	20.7	31.1	19.9	29.9	20.8	31.2	21.1	31.6
27.0	22.6	33.8	21.5	32.2	20.7	31.1	21.6	32.4	21.9	32.8
28.0	23.4	35.1	22.3	33.4	21.5	32.2	22.4	33.6	22.6	34.0
29.0	24.2	36.3	23.0	34.6	22.2	33.3	23.2	34.8	23.4	35.1
30.0	25.1	37.6	23.8	35.7	23.0	34.5	24.0	36.0	24.2	36.3
31.0	25.9	38.8	24.6	36.9	23.8	35.6	24.9	37.3	25.0	37.5
32.0	26.7	40.1	25.4	38.0	24.5	36.8	25.7	38.5	25.8	38.7
33.0	27.5	41.3	26.1	39.2	25.3	37.9	26.5	39.7	26.6	39.8
34.0	28.4	42.6	26.9	40.3	26.0	39.1	27.3	41.0	27.3	41.0
35.0	29.2	43.8	27.7	41.5	26.8	40.2	28.1	42.2	28.1	42.2
36.0	30.0	45.1	28.4	42.6	27.6	41.4	28.9	43.4	28.9	43.3
37.0	30.9	46.3	29.2	43.8	28.3	42.5	29.8	44.6	29.7	44.5
38.0	31.7	47.6	30.0	44.9	29.1	43.6	30.6	45.9	30.4	45.7
39.0	32.5	48.8	30.7	46.1	29.9	44.8	31.4	47.1	31.2	46.8
40.0	33.4	50.1	31.5	47.2	30.6	45.9	32.2	48.3	32.0	48.0
41.0	34.2	51.3	32.2	48.4	31.4	47.1	33.0	49.6	32.8	49.2
42.0	35.0	52.5	33.0	49.5	32.1	48.2	33.9	50.8	33.6	50.3
43.0	35.9	53.8	33.8	50.7	32.9	49.3	34.7	52.0	34.3	51.5
44.0	36.7	55.0	34.5	51.8	33.7	50.5	35.5	53.3	35.1	52.7
45.0	37.5	56.3	35.3	52.9	34.4	51.6	36.3	54.5	35.9	53.8
46.0	38.4	57.5	36.1	54.1	35.2	52.8	37.2	55.7	36.6	55.0
47.0	39.2	58.8	36.8	55.2	35.9	53.9	38.0	57.0	37.4	56.1
48.0	40.0	60.0	37.6	56.4	36.7	55.1	38.8	58.2	38.2	57.3
49.0	40.9	61.3	38.3	57.5	37.5	56.2	39.6	59.5	39.0	58.4
50.0	41.7	62.5	39.1	58.6	38.2	57.3	40.5	60.7	39.7	59.6
51.0	42.5	63.8	39.9	59.8	39.0	58.5	41.3	61.9	40.5	60.8
52.0	43.3	65.0	40.6	60.9	39.7	59.6	42.1	63.2	41.3	61.9
53.0	44.2	66.3	41.4	62.1	40.5	60.8	42.9	64.4	42.0	63.1
54.0	45.0	67.5	42.1	63.2	41.3	61.9	43.8	65.6	42.8	64.2
55.0	45.8	68.8	42.9	64.3	42.0	63.0	44.6	66.9	43.6	65.4
56.0	46.7	70.0	43.6	65.5	42.8	64.2	45.4	68.1	44.4	66.6
57.0	47.5	71.2	44.4	66.6	43.6	65.3	46.2	69.4	45.1	67.7
58.0	48.3	72.5	45.2	67.7	44.3	66.5	47.1	70.6	45.9	68.8
59.0	49.2	73.7	45.9	68.9	45.1	67.6	47.9	71.8	46.7	70.0
60.0	50.0	75.0	46.7	70.0	45.8	68.7	48.7	73.1	47.4	71.1

Record dp for Loop B average and each jet pump using EPIC-A data points

3361 AVG	953 JP-16	955 JP-17	957 JP-18	959 JP-19	961 JP-20
48.71	51.1	46.1	51.6	48.2	46.4

Init TH

Level 1 Acceptance Criteria	Status (circle one)	If UNSAT, describe why below
10.1.1	SAT UNSAT	**Recirculation loop jet pump flow mismatch exceeds 5% of rated core flow (3.85 Mlbm/hr).** **(or similar)**
10.1.2	SAT UNSAT	**Loop A and B flows are greater than 5% from predicted (Att. 3).** **Loop A and B jet pump flows are greater than 5% from predicted (Att. 4).** **Jet pump 3 and 4 dPs are greater than 20% below established values (Att 5).** **(or similar, such as "Loop A does not meet any of the required criteria in 10.1.2.")**

HANDOUT

- ST-23C, Jet Pump Operability Test for Two Loop Operation (EPIC Available), is in progress.
- The required data for completing ST-23C is included on the provided handout.
- Baseline data collection is complete and an "established pattern" exists.

Perform ST-23C section 8.0. Then assess the results against the Level 1 Acceptance Criteria of section 10.1.1 and 10.1.2 by completing the provided worksheet.

HANDOUT

Parameter	Instrument / EPIC Point	Value
Total Core Flow	EPIC-A-3330	93.5 % rated
Loop A Jet Pump Flow	02-3FI-92A	32.5 Mlbm/hr
Loop B Jet Pump Flow	02-3FI-92B	39.0 Mlbm/hr
A Pump Power	EPIC-A-399	2.63 MW
B Pump Power	EPIC-A-400	2.61 MW
A Recirc Loop Flow	EPIC-A-3317	17.422 Mlbm/hr
B Recirc Loop Flow	EPIC-A-3318	16.602 Mlbm/hr
Rx Total Core Flow	EPIC-A-0414	71.4 Mlbm/hr
WTSUB	EPIC-A-6254	72.9 Mlbm/hr
Recirc Pump A Speed	02-184SI-16A1	82.46 %
Recirc Pump B Speed	02-184SI-16B1	82.50 %
Double Tapped JP 1 Flow	02-3FI-87A	3.45 lbs/hr x 10^6
Double Tapped JP 6 Flow	02-3FI-87C	3.3 lbs/hr x 10^6
Double Tapped JP 11 Flow	02-3FI-87B	4.0 lbs/hr x 10^6
Double Tapped JP 16 Flow	02-3FI-87D	4.1 lbs/hr x 10^6
Recirc Loop A Ave Jet Pmp %PSID	EPIC-A-3382	31.01 % psid
Recirc Loop B Ave Jet Pmp %PSID	EPIC-A-3381	48.71 % psid
Rx Core Diff Press	EPIC-A-405	17.6 psid
P6 10 Min Avg Core Thermal Power	EPIC-A-3390	2437.8 MWth
Jet Pump 1 dP	EPIC-A-942	32.0 % psid
Jet Pump 2 dP	EPIC-A-944	33.2 % psid
Jet Pump 3 dP	EPIC-A-946	16.4 % psid
Jet Pump 4 dP	EPIC-A-948	24.0 % psid
Jet Pump 5 dP	EPIC-A-950	35.3 % psid
Jet Pump 6 dP	EPIC-A-952	30.3 % psid
Jet Pump 7 dP	EPIC-A-954	35.1 % psid
Jet Pump 8 dP	EPIC-A-956	34.8 % psid
Jet Pump 9 dP	EPIC-A-958	34.0 % psid
Jet Pump 10 dP	EPIC-A-960	35.0 % psid
Jet Pump 11 dP	EPIC-A-943	51.2 % psid
Jet Pump 12 dP	EPIC-A-945	43.7 % psid
Jet Pump 13 dP	EPIC-A-947	50.1 % psid
Jet Pump 14 dP	EPIC-A-949	49.2 % psid
Jet Pump 15 dP	EPIC-A-951	49.7 % psid
Jet Pump 16 dP	EPIC-A-953	51.1 % psid
Jet Pump 17 dP	EPIC-A-955	46.1 % psid
Jet Pump 18 dP	EPIC-A-957	51.8 % psid
Jet Pump 19 dP	EPIC-A-959	48.2 % psid
Jet Pump 20 dP	EPIC-A-961	46.4 % psid

WORKSHEET

Level 1 Acceptance Criteria	Status (circle one)	If UNSAT, describe why below
10.1.1	SAT UNSAT	
10.1.2	SAT UNSAT	

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO	14-2 NRC RO RC	TASK TITLE:	Determine Worker Exposure for Emergent Work
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.3.4 (3.2/3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________ LOGIN ID:

JPM Completion Perform

Location: Classroom

DATE PERFORMED: ___________ TIME TO COMPLETE: _______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

CANDIDATE REVIEW: ______________________________
SIGNATURE

REVIEWED BY: ______________________________ DOC. COMPLETE: ______________________
PROGRAM ADMINISTER

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

RO	14-2 NRC RO RC	TASK TITLE: Determine Worker Exposure for Emergent Work
APPL. TO	JPM NUMBER	

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update _____ By: _____
Date Int

Previous Revision Date:

RO	14-2 NRC RO RC	TASK TITLE: Determine Worker Exposure for Emergent Work
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EN-RP-201, Dosimetry Administration

III. TOOLS AND EQUIPMENT

A. Calculator

IV. SET UP REQUIREMENTS

A. Ensure adequate copies of the procedures referenced above are available.

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. The plant is operating at 100% power.
B. Two operators are required to enter a locked high radiation area to support an emergent job.
C. The job is expected to take 45 minutes.
D. The job site dose rate is 1500 mRem/hr.
E. Operator #1 has received 1147 mRem of dose so far this year.
F. Operator #2 has received 450 mRem of dose so far this year.
G. Neither operator has received any dose extensions so far this year.
H. Neither operator has any undocumented quarters for this year.

TASK TITLE: Determine Worker Exposure for Emergent Work

*** - CRITICAL STEP**

VII. INITIATING CUE

Inform the candidate, "Determine the expected dose that each operator will receive while performing this job. Determine if each operator will need a dose extension in order to receive this dose. Report your results on the provided worksheet."

EXAMINER: Provide the candidate with the first handout and worksheet.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain required references.	Obtains and utilizes required references, which may include: • EN-RP-201 **EXAMINER NOTE:** See provided key for remaining steps.	SAT / UNSAT
*2.	Determine the expected dose that each operator will receive while performing this job	Calculates that each operator will receive 1125 mRem while performing this job. (45 minutes/60 minutes per hour) x (1500 mRem/hour) = 1125 mRem	**CRITICAL STEP** SAT / UNSAT
*3.	Determine if Operator #1 will need a dose extension in order to receive this dose.	Determines that Operator #1 will need dose extension in order to receive this dose. 1147 mRem + 1125 mRem = 2272 mRem > 2000 mRem normal dose limit	**CRITICAL STEP** SAT / UNSAT
*4.	Determine if Operator #2 will need a dose extension in order to receive this dose.	Determines that Operator #2 will NOT need dose extension in order to receive this dose. 450 mRem + 1125 mRem = 1575 mRem < 2000 mRem normal dose limit	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Determine Worker Exposure for Emergent Work

	STEP	STANDARD	EVALUATION / COMMENT
EXAMINER: If the candidate correctly complete JPM steps 2-4, provide them with the extra handout, with the following information: "Operator #1 has been granted a dose extension to 2500 mRem. Operator #2 has NOT been granted a dose extension. Determine the maximum stay time allowed for both Operator #1 and for Operator #2, such that they do NOT exceed their dose limits. Document your results in the worksheet below."			
*5.	Determine the maximum stay time allowed for Operator #1 such that dose limit is NOT exceeded.	Calculates the maximum stay time for Operator #1 is approximately 54 minutes. (2500 mRem – 1147 mRem) / 1500 mRem/hr = 0.902 hours x (60 minutes per hour) = 54.12 minutes	**CRITICAL STEP** SAT / UNSAT
*6.	Determine the maximum stay time allowed for Operator #2 such that dose limit is NOT exceeded.	Calculates the maximum stay time for Operator #2 is approximately 62 minutes. (2000 mRem – 450 mRem) / 1500 mRem/hr = 1.033 hours (60 minutes per hour) = 62 minutes	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

EVALUATOR'S KEY

1. Expected dose that each operator will receive while performing this job: **1125 mRem**
2. Will Operator #1 need a dose extension in order to receive the dose calculated above? (circle one) **Yes** **No**
3. Will Operator #2 need a dose extension in order to receive the dose calculated above? (circle one) **Yes** **No**

EVALUATOR'S KEY

1. Maximum stay time allowed for Operator #1 (record final answer in minutes): **54 minutes**
2. Maximum stay time allowed for Operator #2 (record final answer in minutes): **62 minutes**

EVALUATOR'S KEY

HANDOUT

- The plant is operating at 100% power.
- Two operators are required to enter a locked high radiation area to support an emergent job.
- The job is expected to take 45 minutes.
- The job site dose rate is 1500 mRem/hr.
- Operator #1 has received 1147 mRem of dose so far this year.
- Operator #2 has received 450 mRem of dose so far this year.
- Neither operator has received any dose extensions so far this year.
- Neither operator has any undocumented quarters for this year.

Determine the expected dose that each operator will receive while performing this job.

Determine if each operator will need a dose extension in order to receive this dose.

Report your results on the provided worksheet.

WORKSHEET

1. Expected dose that each operator will receive while performing this job:
2. Will Operator #1 need a dose extension in order to receive the dose calculated above? (circle one) **Yes** **No**
3. Will Operator #2 need a dose extension in order to receive the dose calculated above? (circle one) **Yes** **No**

EXTRA HANDOUT

Operator #1 has been granted a dose extension to 2500 mRem.

Operator #2 has NOT been granted a dose extension.

Determine the maximum stay time allowed for both Operator #1 and for Operator #2, such that they do NOT exceed their dose limits. Document your results in the worksheet below.

EXTRA WORKSHEET

1. Maximum stay time allowed for Operator #1 (record final answer in minutes):
2. Maximum stay time allowed for Operator #2 (record final answer in minutes):

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

SRO	NRC 14-2 SRO COO1	TASK TITLE:	Verify Fuel Movement Sheets
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.1.35 (3.9)

JAF TASK NUMBER: __________ JAF QUAL STANDARD NUMBER: __________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________

JPM Completion Perform

Location: Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________
SIGNATURE/PRINTED

CANDIDATE REVIEW: ______________________
SIGNATURE

REVIEWED BY: ______________________ DOC. COMPLETE: ______________________
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE
RECORD AND CHECKLIST

SRO	NRC 14-2 SRO COO1	TASK TITLE:	Verify Fuel Movement Sheets
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

SRO	NRC 14-2 SRO COO1	TASK TITLE: Verify Fuel Movement Sheets
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OSP-66.001, Management of Refueling Activities

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. None

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.

VI. TASK CONDITIONS

A. Today is October 2, 2014.

B. A refueling outage is underway.

C. A refueling error occurred last shift.

D. You are the oncoming Refuel Bridge SRO.

E. The prior shift's fuel moves into the Spent Fuel Pool have been verified correct by another SRO.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Verify the previous shift's in-core placement of components (steps 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16, and 17 from the provided ICA Transfer Forms)."

EVALUATOR: Provide the candidate with the attached handouts (fuel movement sheets and pictures of core cells). Provide OSP-66.001 if requested.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Verify correct loading of Control Cell 38-35.	Determines four Control Cell 38-35 bundles are in the correct location and orientation (ICA Transfer Form steps 1-4): • JLV675 • JLV682 • JLK804 • JLK817	SAT / UNSAT
*2.	Determine the INCORRECT loading of Control Cell 14-35.	Determines two Control Cell 14-35 bundles are the correct bundles but in the INCORRECT orientation (ICA Transfer Form steps 6 & 7): • JLV678 • JLV670	**CRITICAL STEP** SAT / UNSAT
3.	Verify the correct loading of Control Cell 14-35.	Determines two Control Cell 14-35 bundles are the correct bundles and in the correct orientation (ICA Transfer Form steps 9 & 10): • JLK805 • JLK812	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Determine the INCORRECT loading of Control Cell 38-15.	Determines one Control Cell 38-15 bundle is in the correct orientation but is the INCORRECT bundle (ICA Transfer Form step 11): • JLV668 (vs. JLV 698)	**CRITICAL STEP** SAT / UNSAT
5.	Verify the correct loading of Control Cell 38-15.	Determines three Control Cell 38-15 bundles are the correct bundles and in the correct orientation (ICA Transfer Form steps 12, 14, & 15): • JLV674 • JLK807 • JLK820	SAT / UNSAT
*6.	Determine the INCORRECT loading of Control Cell 14-15.	Determines that the two single blade guides in Control Cell 14-15 are in the wrong orientation (ICA Transfer Form steps 16 & 17).	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

HANDOUT

- Today is October 2, 2014.
- A refueling outage is underway.
- A refueling error occurred last shift.
- You are the oncoming Refuel Bridge SRO.
- The prior shift's fuel moves into the Spent Fuel Pool have been verified correct by another SRO.

Verify the previous shift's <u>in-core</u> placement of components (steps 1, 2, 4, 5, 6, 7, 9, 10, 11, 12, 14, 15, 16, and 17 from the provided ICA Transfer Forms).

HANDOUT

ATTACHMENT 9.1 **ITEM CONTROL AREA (ICA) TRANSFER FORM (TYPICAL)**

(1) Number: R21-0001
(2) Issued (Date): Oct 1, 2014
(3) Reason for Transfer: Cycle 21 Refueling Ouage
(4) Prepared By: S. Carolin/ *S. Carolin*
(4a) Reviewed By: B. Drews/ *B. Drews*
(4b) Additional Approvals By: N/A
(10) SNMC Approval: S. Carolin/ / *S. Carolin* Lines 1-12 thru ____ Date Oct 1, 2014

Line No.	Description of Material (5)	Serial No. / Equipment ID (5)	From ICA (6)	From Coord. (7)	To ICA (8)	To Coord. (9)	Performed by (11)	Date/Time Executed (12)	Verified by (13)
1	FUEL BUNDLE	JLV675	SFP	26-BB-2	CORE	39-34	*AB*	*10/02/14 0300*	*CD*
2	FUEL BUNDLE	JLV682	SFP	26-CC-2	CORE	37-36	*AB*	*10/02/14 0310*	*CD*
3	DOUBLE BLADE GUIDE	N/A	CORE	39-36 37-34	SFP	26-EE-2 26-DD-1	*AB*	*10/02/14 0320*	*CD*
4	FUEL BUNDLE	JLK804	SFP	26-DD-2	CORE	37-34	*AB*	*10/02/14 0330*	*CD*
5	FUEL BUNDLE	JLK817	SFP	26-EE-2	CORE	39-36	*AB*	*10/02/14 0340*	*CD*
6	FUEL BUNDLE	JLV678	SFP	26-FF-2	CORE	15-34	*AB*	*10/02/14 0350*	*CD*
7	FUEL BUNDLE	JLV670	SFP	26-W-3	CORE	13-36	*AB*	*10/02/14 0400*	*CD*
8	DOUBLE BLADE GUIDE	N/A	CORE	15-36 13-34	SFP	26-DD-2 26-CC-1	*AB*	*10/02/14 0410*	*CD*
9	FUEL BUNDLE	JLK805	SFP	26-X-3	CORE	13-34	*AB*	*10/02/14 0420*	*CD*
10	FUEL BUNDLE	JLK812	SFP	26-Y-3	CORE	15-36	*AB*	*10/02/14 0430*	*CD*
11	FUEL BUNDLE	JLV698	SFP	26-Z-3	CORE	39-14	*AB*	*10/02/14 0440*	*CD*
12	FUEL BUNDLE	JLV674	SFP	26-AA-3	CORE	37-16	*AB*	*10/02/14 0450*	*CD*

NOTES/COMMENTS

Line #: _____ _____

Line #: _____ _____

Line #: _____ _____

Line #: _____ _____

(14) SNM Records Updated by: _____ Lines _____ Thru _____ Date _____

(15) Verified by: _____ Lines _____ Thru _____ Date _____

HANDOUT

(1) Number: R21-0001
(2) Issued (Date): Oct 1, 2014
(3) Reason for Transfer: Cycle 21 Refueling Ouage
(4) Prepared By: S. Carolin/ S. Carolin
(4a) Reviewed By: B. Drews/ B. Drews
(4b) Additional Approvals By: N/A
(10) SNMC Approval: S. Carolin/ / S. Carolin Lines 13-19 thru Date Oct 1, 2014

Line No.	Description of Material (5)	Serial No. / Equipment ID (5)	From ICA (6)	From Coord. (7)	To ICA (8)	To Coord. (9)	Performed by (11)	Date/Time Executed (12)	Verified by (13)
13	DOUBLE BLADE GUIDE	N/A	CORE	39-16 37-14	SFP	26-CC-2 26-BB-1	AB	10/02/14 0500	CD
14	FUEL BUNDLE	JLK807	SFP	26-BB-1	CORE	37-14	AB	10/02/14 0510	CD
15	FUEL BUNDLE	JLK820	SFP	26-CC-1	CORE	39-16	AB	10/02/14 0520	CD
16	SINGLE BLADE GUIDE	N/A	SFP	25-FF-11	CORE	13-16	AB	10/02/14 0530	CD
17	SINGLE BLADE GUIDE	N/A	SFP	25-FF-1	CORE	15-14	AB	10/02/14 0540	CD
18	FUEL BUNDLE	JLV720	CORE	13-14	SFP	35-N-7	AB	10/02/14 0550	CD
19	FUEL BUNDLE	JLV725	CORE	15-16	SFP	35-N-6	AB	10/02/14 0600	CD
20	N/A								
21	N/A								
22	N/A								
23	N/A								
24	N/A								

NOTES/COMMENTS

Line #: _____ _____

Line #: _____ _____

Line #: _____ _____

Line #: _____ _____

(14) SNM Records Updated by: _____ Lines _____ Thru _____ Date _____

(15) Verified by: _____ Lines _____ Thru _____ Date _____

HANDOUT

SOUTH

NORTH

Control Cell 38-35

HANDOUT

SOUTH

NORTH

Control Cell 14-35

HANDOUT

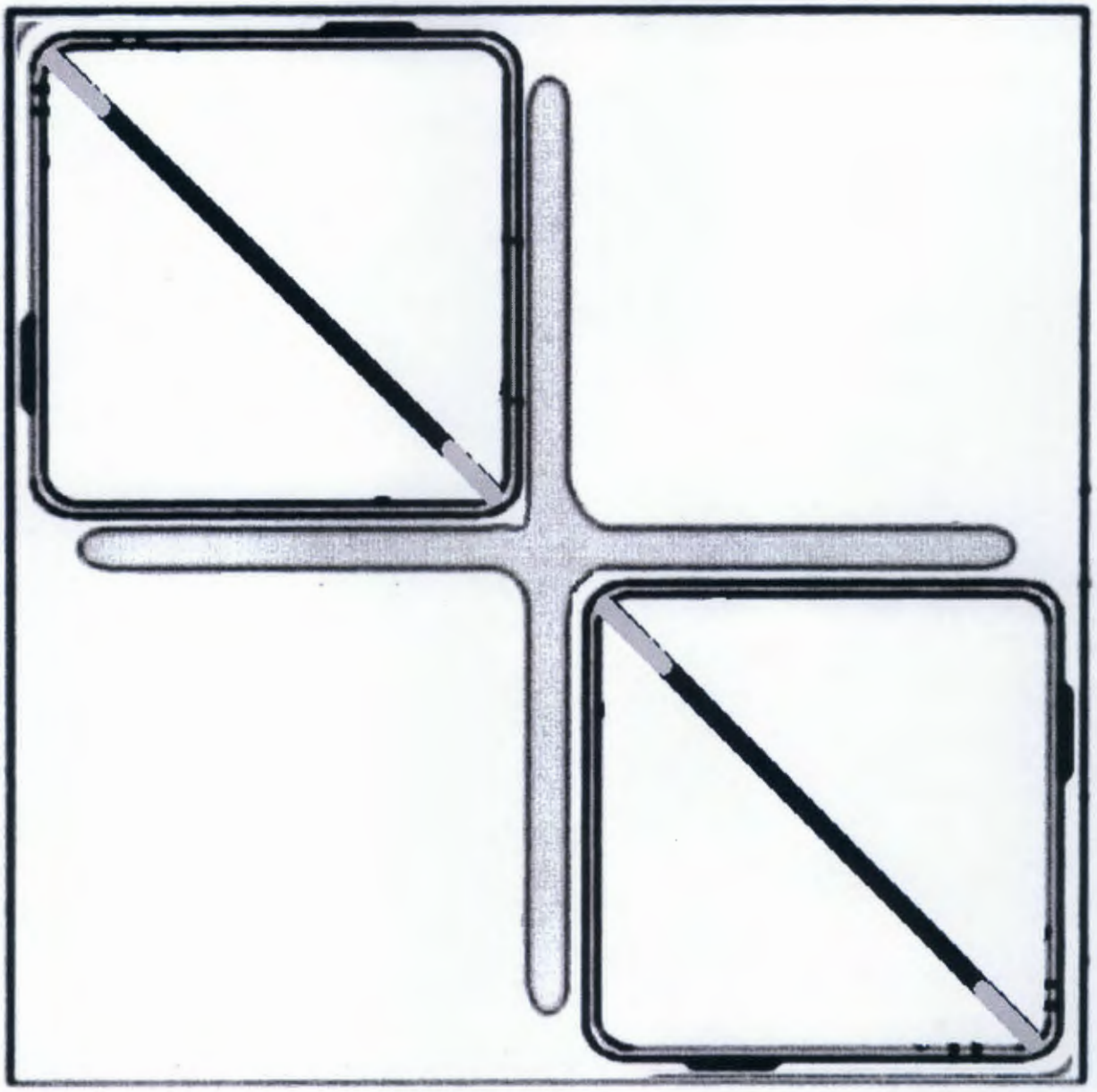
SOUTH

NORTH

Control Cell 38-15

HANDOUT

SOUTH



NORTH

Control Cell 14-15

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

SRO	NRC 14-2 SRO COO2	TASK TITLE:	Re-activation of SRO License
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.1.4 (3.8)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ____________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

~~~~~~

CANDIDATE NAME: ______________________________

JPM Completion Perform

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

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

SRO	NRC 14-2 SRO COO2	TASK TITLE:	Re-activation of SRO License
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

SRO	NRC 14-2 SRO COO2	TASK TITLE: Re-activation of SRO License
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ODSO-30, Maintenance of NRC Licenses and STA Qualifications

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. None

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.

VI. TASK CONDITIONS

A. You are a Shift Manager and your SRO license became inactive on July 1, 2014.

B. You have been directed to re-activate your license during the 3rd quarter to stand the Shift Manager watch on October 4, 2014.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Complete the following worksheet regarding re-activation of your license. Consider each item separately and circle the correct response for each item as follows:

Yes - This **IS** required for license re-activation and it meets the standard.

No – This **IS** required for license re-activation, but it does **NOT** meet the standard.

N/R – This is **NOT** required for license re-activation."

EVALUATOR: Provide the candidate with the attached handout and worksheet. Provide ODSO-30 if requested.

	STEP	STANDARD	EVALUATION / COMMENT
*1.	Evaluates worksheet step 1 regarding requalification training.	Circles Yes for worksheet step 1. **EVALUATOR NOTE:** This step meets the required standard of being current in requal, which includes passing all exams with at least and 80%.	**CRITICAL STEP** SAT / UNSAT
*2.	Evaluates worksheet step 2 regarding Emergency Director qualification.	Circles No for worksheet step 2. **EVALUATOR NOTE:** This step does not meet the required standard of being currently qualified Emergency Director.	**CRITICAL STEP** SAT / UNSAT
3.	Evaluates worksheet step 3 regarding Fire Brigade member qualification.	Circles N/R for worksheet step 3. **EVALUATOR NOTE:** Fire Brigade qualification is not required for a Shift Manager.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Evaluates worksheet step 4 regarding a plant tour.	Circles No for worksheet step 4. **EVALUATOR NOTE:** This step does not meet the required standard of the plant tour being supervised by an SRO.	**CRITICAL STEP** SAT / UNSAT
*5.	Evaluates worksheet step 5 regarding proposed under-instruction watch Schedule A.	Circles No for worksheet step 5 Schedule A. **EVALUATOR NOTE:** The FSS position does not count towards the required 40 hours on-shift, leaving only 36 hours.	**CRITICAL STEP** SAT / UNSAT
*6.	Evaluates worksheet step 5 regarding proposed under-instruction watch Schedule B.	Circles No for worksheet step 5 Schedule B. **EVALUATOR NOTE:** This step does not meet the required standard of the 40 hours of on-shift time being performed in the same calendar quarter.	**CRITICAL STEP** SAT / UNSAT
*7.	Evaluates worksheet step 5 regarding proposed under-instruction watch Schedule C.	Circles Yes for worksheet step 5 Schedule C. **EVALUATOR NOTE:** This step meets the required standard of 4 12-hour shifts during the same calendar quarter.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

EVALUATOR'S KEY

1. You have attended all requal training and passed all quizzes/exams. However your written grade average is 84% and you are on a PIP until it is greater than 85%. This is not expected until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

2. You are no longer qualified as Emergency Director and you will not re-qualify until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

3. You are no longer qualified as a Fire Brigade member and you will not re-qualify until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

4. On your own time, you and a friend (who has an active RO license) came in and took a complete tour of the plant. Neither the Shift Manager nor the Control Room Supervisor were aware of this.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

5. Below are three proposed schedules for you to stand the watch under instruction.

	Date	Position	Hours	Attend All Turnovers?
Schedule A	Sept 12	SM	12	Yes
	Sept 13	SM	12	Yes
	Sept 20	FSS	12	Yes
	Sept 21	CRS	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule B	Sept 28	CRS	12	Yes
	Sept 29	SM	12	Yes
	Sept 30	SM	12	Yes
	Oct 01	SM	12	Yes
	Oct 02	SM	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule C	Sept 22	SM	12	Yes
	Sept 23	SM	12	Yes
	Sept 24	STA	8	No (last 4 hrs of shift in Work Control)
	Sept 25	SM	12	Yes
	Sept 27	SM	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

HANDOUT

- **You are a Shift Manager and your SRO license became inactive on July 1, 2014.**
- **You have been directed to re-activate your license during the 3rd quarter to stand the Shift Manager watch on October 4, 2014.**

Complete the following worksheet regarding re-activation of your license. Consider each item separately and circle the correct response for each item as follows:

Yes - This **IS** required for license re-activation and it meets the standard.

No – This **IS** required for license re-activation, but it does **NOT** meet the standard.

N/R – This is **NOT** required for license re-activation.

WORKSHEET

1. You have attended all requal training and passed all quizzes/exams. However your written grade average is 84% and you are on a PIP until it is greater than 85%. This is not expected until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

2. You are no longer qualified as Emergency Director and you will not re-qualify until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

3. You are no longer qualified as a Fire Brigade member and you will not re-qualify until after Oct 4.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

4. On your own time, you and a friend (who has an active RO license) came in and took a complete tour of the plant. Neither the Shift Manager nor the Control Room Supervisor were aware of this.

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

5. Below are three proposed schedules for you to stand the watch under instruction.

	Date	Position	Hours	Attend All Turnovers?
Schedule A	Sept 12	SM	12	Yes
	Sept 13	SM	12	Yes
	Sept 20	FSS	12	Yes
	Sept 21	CRS	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule B	Sept 28	CRS	12	Yes
	Sept 29	SM	12	Yes
	Sept 30	SM	12	Yes
	Oct 01	SM	12	Yes
	Oct 02	SM	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

	Date	Position	Hours	Attend All Turnovers?
Schedule C	Sept 22	SM	12	Yes
	Sept 23	SM	12	Yes
	Sept 24	STA	8	No (last 4 hrs of shift in Work Control)
	Sept 25	SM	12	Yes
	Sept 27	SM	12	Yes

   - Does The Above Meet Re-activation Standard? **Yes** **No** **N/R**

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

SRO	NRC 14-2 SRO EC	TASK TITLE:	Review ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.2.12 (4.1)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion Location: Perform Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

CANDIDATE REVIEW: ______________________________
SIGNATURE

REVIEWED BY: ______________________________ DOC. COMPLETE: ____________________
PROGRAM ADMINISTER

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

SRO	NRC 14-2 SRO EC	TASK TITLE:	Review ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

SRO	NRC 14-2 SRO EC	TASK TITLE: Review ST-23C, Jet Pump Operability – Two Loop
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-23C, Jet Pump Operability Test for Two Loop Operation

III. TOOLS AND EQUIPMENT

A. Calculator

IV. SET UP REQUIREMENTS

A. Ensure a copy of the associated JPM handout is available for each candidate (ST-23C completed up to Management SRO Review – numbers based on failure of JP 4 at 100% power).

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. ST-23C, Jet Pump Operability Test for Two Loop Operation (EPIC Available), has been performed and is ready for the Management SRO Review.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Perform the Management SRO Review of ST-23C per section 11.2. Report your findings in the space below, including any required actions or restrictions (Tech Spec, TRM, ODCM, etc.), if applicable."

EVALUATOR: Provide the candidate with the attached handout and the prepared copy of ST-23C.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Review data recorded in ST-23C.	Reviews data recorded in ST-23C.	SAT / UNSAT
*2.	Identify calculation error in step 8.2.	Identifies the calculation in step 8.2 should be recorded as 6.5 Mlbm/hr.	**CRITICAL STEP** SAT / UNSAT
*3.	Identify Level 1 Acceptance Criteria 10.1.1 is NOT met.	Identifies Level 1 Acceptance Criteria 10.1.1 is NOT met due to Recirculation loop jet pump flow mismatch. **EVALATOR NOTE:** Level 1 Acceptance Criteria 10.1.1 is NOT met because total core flow is greater than 70% and Recirculation loop jet pump flow mismatch is greater than 3.85 Mlbm/hr.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	Identify Level 1 Acceptance Criteria 10.1.2 is NOT met.	Identifies Level 1 Acceptance Criteria 10.1.2 is NOT met. **EVALUATOR NOTE:** Level 1 Acceptance Criteria 10.1.2 is NOT met because both: • Loop flow is greater than 5% from predicted on Attachments 3 and 4 AND • Jet pump 3 and 4 dPs are greater than 20% below established values.	**CRITICAL STEP** SAT / UNSAT
5.	Identify required notification.	Identifies immediate notification of the Operations Manager or alternate is required.	SAT / UNSAT
*6.	Identify required corrective and compensatory actions.	Identifies Technical Specification LCO 3.4.1 Condition B must be entered (restore mismatch within 24 hours). Identifies Technical Specification LCO 3.4.2 Condition A must be entered (be in Mode 3 within 12 hours).	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

HANDOUT

- **ST-23C, Jet Pump Operability Test for Two Loop Operation (EPIC Available), has been performed and is ready for the Management SRO Review.**

Perform the Management SRO Review of ST-23C per section 11.2. Report your findings in the space below, including any required actions or restrictions (Tech Spec, TRM, ODCM, etc.), if applicable.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

SRO	NRC 14-2 SRO RC	TASK TITLE:	Determine Visitor RCA Access Requirements
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 2.3.4 (3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion Location: Perform 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

JOB PERFORMANCE MEASURE

RECORD AND CHECKLIST

SRO	NRC 14-2 SRO RC	TASK TITLE:	Determine Visitor RCA Access Requirements
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

SRO	NRC 14-2 SRO RC	TASK TITLE:	Determine Visitor RCA Access Requirements
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EN-RP-201, Dosimetry Administration

B. EN-RP-202, Personnel Monitoring

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Ensure sufficient copies of EN-RP-201 and EN-RP-202.

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. A Technical Representative from the Viking Valve Corporation Engineering Department is arriving tomorrow to evaluate replacing the Main Condenser Pit Foam Fire Suppression System.

B. Dose rates in the associated work area range from 0 – 5 mr/hr.

C. The evaluation is expected to take approximately 6 hours.

D. The Operations Manager has designated you as the visitor sponsor and visitor escort.

E. Security arrangements have already been completed for visitor access.

F. The individual has never been exposed to or monitored for Occupational Radiation Exposure.

G. The individual will NOT be trained as a Radworker and will NOT perform any work.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Identify the in-processing requirements for allowing the individual to enter the RCA as a visitor/member of the public. Identify the individual's annual regulatory dose limit, maximum annual administrative dose guideline, and routine annual administrative dose guideline. Document your results on the provided worksheet."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of the correct procedure.	Obtains a copy of EN-RP-201 and/or EN-RP-202, as required.	SAT / UNSAT
*2.	Identify procedural requirements for allowing the individual to enter the RCA as a visitor.	Identifies requirements of EN-RP-202 section 5.3.[1] must be met: • Perform an indoctrination briefing of Attachment 9.2. • Escort briefed per page 2 of Attachment 9.1. • Visitor and escort complete Attachment 9.9 when the briefing is completed. • Assign individual a DLR. • Assign TEDE limits per EN-RP-201. **EVALUATOR NOTE:** See attached key to assist in grading the candidate's completed worksheet. Each of these requirements may be written out or the appropriate procedure steps may be referenced.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*3.	Identify the individual's annual regulatory dose limit.	Identifies the individual's routine annual administrative dose guideline as 100 mrem/year.	**CRITICAL STEP** SAT / UNSAT
*4.	Identify the individual's maximum annual administrative dose guideline.	Identifies the individual's maximum annual administrative dose guideline as 100 mrem/year.	**CRITICAL STEP** SAT / UNSAT
*5.	Identify the individual's routine annual administrative dose guideline.	Identifies the individual's routine annual administrative dose guideline as 50 mrem/year.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

1. Identify the procedural requirements for allowing the individual to enter the RCA as a visitor:

Requirements of EN-RP-202 section 5.3.[1] must be met:

- Perform an indoctrination briefing of Attachment 9.2.
- Escort briefed per page 2 of Attachment 9.1.
- Visitor and escort complete Attachment 9.9 when the briefing is completed.
- Assign individual a DLR.
- Assign TEDE limits per EN-RP-201.

EVALUATOR NOTE: Each of these requirements may be written out or the appropriate procedure steps may be referenced.

2. Identify the individual's annual regulatory dose limit:

100 mrem/year

3. Identify the individual's maximum annual administrative dose guideline:

100 mrem/year

4. Identify the individual's routine annual administrative dose guideline:

50 mrem/year

HANDOUT

- A Technical Representative from the Viking Valve Corporation Engineering Department is arriving tomorrow to evaluate replacing the Main Condenser Pit Foam Fire Suppression System.
- Dose rates in the associated work area range from 0 – 5 mr/hr.
- The evaluation is expected to take approximately 6 hours.
- The Operations Manager has designated you as the visitor sponsor and visitor escort.
- Security arrangements have already been completed for visitor access.
- The individual has never been exposed to or monitored for Occupational Radiation Exposure.
- The individual will NOT be trained as a Radworker and will NOT perform any work.

Identify the in-processing requirements for allowing the individual to enter the RCA as a visitor/member of the public. Identify the individual's annual regulatory dose limit, maximum annual administrative dose guideline, and routine annual administrative dose guideline. Document your results on the provided worksheet.

WORKSHEET

1. Identify the in-processing requirements for allowing the individual to enter the RCA as a visitor:
2. Identify the individual's annual regulatory dose limit:
3. Identify the individual's maximum annual administrative dose guideline:
4. Identify the individual's routine annual administrative dose guideline:

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

SRO — APPL. TO

14-2 NRC SRO EP — JPM NUMBER

TASK TITLE: Determine Emergency Classification and Initiate Event Notification

REV: ______ DATE: ________ NRC K/A SYSTEM NUMBER: 2.4.44 (4.4)

JAF TASK NUMBER: ________ JAF QUAL STANDARD NUMBER: ________

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ________ LOGIN ID:

JPM Completion Location: Perform 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

SRO APPL. TO	14-2 NRC SRO EP JPM NUMBER	TASK TITLE:	Determine Emergency Classification and Initiate Event Notification

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update _____ By: _____
Date Int

Previous Revision Date:

SRO APPL. TO	14-2 NRC SRO EP JPM NUMBER	TASK TITLE:	Determine Emergency Classification and Initiate Event Notification

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. IAP-1
B. IAP-2
C. EAP-1.1
D. EAP-4

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Ensure sufficient copies of the referenced documents are available, including extra copies of the Part 1 notification form.

V. EVALUATOR NOTES

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

VI. TASK CONDITIONS

A. The plant was initially operating at 100% power with no equipment out of service.

B. An earthquake was felt in the Control Room and confirmed with both JAF and Nine Mile Point Unit 2 seismic instrumentation.

C. The Reactor was manually scrammed five minutes ago.

E. The following conditions exist now:

- Reactor pressure is 200 psig and lowering.
- Reactor water level is -5 inches and slowly lowering with all available injection sources maximized.
- Drywell pressure is 15 psig and slowly rising.
- A steam leak in the Reactor Building coming from the Reactor Water Cleanup system has been reported.
- Reactor Water Cleanup isolation valves 12MOV-15 and 12MOV-18 have failed to close.
- A team is being assembled to close 12MOV-18 in the field. Expected completion time for the team is 2 hours from now.
- Reactor Building differential pressure is -0.25" H_2O.
- No change has been seen in Stack or Reactor Building exhaust radiation levels.
- 200' elevation wind speed is 10 mph from 190°.
- 30' elevation wind speed is 5 mph from 190°.
- Stability class is E.

TASK TITLE: Determine Emergency Classification and Initiate Event Notification

VII. INITIATING CUE

Inform the candidate of the following:

"1. Classify the event and inform the examiner of the classification. 2. Then, complete the Part 1 Notification per EAP-1.1, Offsite Notifications. This is a time critical JPM. Your time clock starts once you acknowledge this task."

*** - CRITICAL STEP**

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain applicable reference documents	Obtains a copy of applicable reference documents, as needed: • IAP-1 • IAP-2 • EAP-1.1 **EVALUATOR:** Ensure sufficient copies of these documents are available.	SAT / UNSAT
*2.	Classify the event	Classifies the event as General Emergency FG1.1 based on loss of RCS and Primary Containment barriers and potential loss of Fuel Clad Barrier within 15 minutes of JPM start time. JPM start time: _____ Time of classification: _____ Time difference: _____	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Determine Emergency Classification and Initiate Event Notification

	STEP	STANDARD	EVALUATION / COMMENT
*3.	Implement EAP-1.1, Offsite Notifications, in order to notify offsite agencies.	Completes EAP-1.1 Attachment 1, Part 1 notification form per attached key within 15 minutes of classification time. Time of classification: _____ Time of offsite notification: _____ Time difference: _____ **EVALUATOR NOTE:** Only item 3, 4, 5, 6, 7, 9, and 10 of EAP-1.1 Attachment 1 are deemed critical for this JPM. These items are individually graded in the JPM steps below. All other items are non-critical. See attached key.	**CRITICAL STEP** SAT / UNSAT
*4.	Completes Part 1 Notification step 3.	Indicates "GENERAL EMERGENCY" in Part 1 Notification step 3 (see attached key).	**CRITICAL STEP** SAT / UNSAT
*5.	Completes Part 1 Notification step 4.	Records today's date and time of declaration in Part 1 Notification step 4 (see attached key).	**CRITICAL STEP** SAT / UNSAT
*6.	Completes Part 1 Notification step 5.	Indicates "No Release" in Part 1 Notification step 5 (see attached key).	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Determine Emergency Classification and Initiate Event Notification

	STEP	STANDARD	EVALUATION / COMMENT
*6.	Completes Part 1 Notification step 6.	Indicates "EVACUATE and IMPLEMENT the KI PLAN for the following ERPA...: 1, 2, 3, 26, 27" in Part 1 Notification step 6 (see attached key).	**CRITICAL STEP** SAT / UNSAT
*7.	Completes Part 1 Notification step 7.	Indicates EAL # "FG1.1" in Part 1 Notification step 7 (see attached key).	**CRITICAL STEP** SAT / UNSAT
*8.	Completes Part 1 Notification step 9.	Indicates elevated wind speed of 10 mph in Part 1 Notification step 9 (see attached key). Indicates ground wind speed of 5 mph in Part 1 Notification step 9 (see attached key).	**CRITICAL STEP** SAT / UNSAT
*9.	Completes Part 1 Notification step 10.	Indicates elevated wind direction of 190° in Part 1 Notification step 10 (see attached key). Indicates ground wind direction of 190° in Part 1 Notification step 10 (see attached key).	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

EVALUATOR'S KEY

PART ONE GENERAL INFORMATION

NEW YORK STATE
UPSTATE RADIOLOGICAL EMERGENCY DATA FORM
PART 1 Notification # _____

"This is to report an incident at the James A. FitzPatrick Power Plant. Standby for confirmation." (Conduct roll call to include the following stations:) ☐ New York State ☐ Oswego County ☐ Nine Mile Point Unit #1 ☐ Nine Mile Point Unit #2

FROM: (CR, TSC, EOF, OTHER) ED Approval: (Signature)

GENERAL INFORMATION (Note: O When checked indicates change in status, NOT for place keeping)

1. Message transmitted on: (Date) _____ at (Time) _____ 24 Hour Clock Via: A. RECS B. Other

☐ NY State : 518-292-2200 or 2201
☐ Oswego Co.: 591-9150 or 911
☐ NMP # 1: 349-5201 or Control Room Hotline
☐ NMP # 2: 349-5202 or Control Room Hotline

O2. This is : A. An Actual Emergency B. An Exercise

O3. The Emergency Classification is:
A. UNUSUAL EVENT C. SITE AREA EMERGENCY E. EMERGENCY TERMINATED
B. ALERT D. GENERAL EMERGENCY F. Other _____

O4. This Emergency Classification declared on: (Today's Date) (date) at (Time) (time-24 hr clock)

O5. Release of Radioactive Materials due to the classified event:
A. No Release
B. Release BELOW federal limits Technical Specification
☐ To Atmosphere ☐ To Water
C. Release ABOVE federal limits Technical Specification
☐ To Atmosphere ☐ To Water
D. Unmonitored release requiring evaluation

O6. The following Protective Actions are recommended to be implemented as soon as practicable:

A. NO NEED for PROTECTIVE ACTIONS outside the site boundary

B. EVACUATE and IMPLEMENT the KI PLAN for the following ERPAs and All remaining ERPAs MONITOR the EMERGENCY ALERT SYSTEM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

NOTE: OFFSITE AUTHORITIES SHOULD CONSIDER SHELTER-IN-PLACE + TAKE KI IF EVACUATION IS NOT FEASIBLE

C. SHELTER-IN-PLACE and IMPLEMENT the KI PLAN for the following ERPAs and All remaining ERPAs MONITOR the EMERGENCY ALERT SYSTEM
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

O7. EAL # FG1.1

Brief Event Description & Other Significant Information (Optional description here - NOT critical)

O8. Reactor Status: A. Operational B. Shutdown (Today's Date) (date) at (Start Time - 5 minutes) (time 24 hr clock)

O9. Wind Speed: A. 10 Miles/Hour at elevation 200 Feet (Elevated)
B. 5 Miles/Hour at elevation 30 Feet (Ground)

O10. Wind Direction: A. (From) 190 Degrees at elevation 200 Feet (Elevated)
B. (From) 190 Degrees at elevation 30 Feet (Ground)

O11. Stability Class Elevated: Unstable - A B C Neutral - D Stable - E F G

O12. Reported By - Communicator's name: _____ Telephone # (315)

"(Name of Agency). Do you have any questions?"
☐ New York State ☐ Oswego County ☐ Nine Mile Point Unit #1 ☐ Nine Mile Point Unit #2
"James A. FitzPatrick Nuclear Power Plant out at (date, time)"

EVALUATOR'S KEY

HANDOUT

- The plant was initially operating at 100% power with no equipment out of service.
- An earthquake was felt in the Control Room and confirmed with both JAF and Nine Mile Point Unit 2 seismic instrumentation.
- The Reactor was manually scrammed five minutes ago.
- The following conditions exist now:
  - Reactor pressure is 200 psig and lowering.
  - Reactor water level is -5 inches and slowly lowering with all available injection sources maximized.
  - Drywell pressure is 15 psig and slowly rising.
  - A steam leak in the Reactor Building coming from the Reactor Water Cleanup system has been reported.
  - Reactor Water Cleanup isolation valves 12MOV-15 and 12MOV-18 have failed to close.
  - A team is being assembled to close 12MOV-18 in the field. Expected completion time for the team is 2 hours from now.
  - Reactor Building differential pressure is -0.25" H_2O.
  - No change has been seen in Stack or Reactor Building exhaust radiation levels.
  - 200' elevation wind speed is 10 mph from 190°.
  - 30' elevation wind speed is 5 mph from 190°.
  - Stability class is E.

1. Classify the event and inform the examiner of the classification.

2. Then, complete the Part 1 Notification per EAP-1.1, Offsite Notifications.

This is a time critical JPM. Your time clock starts once you acknowledge this task.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 A	TASK TITLE:	Restore CRD to Normal Alignment Following ATWS (Alt Path)
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 201001 A2.07 (3.2/3.1)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

~~~~~~

CANDIDATE NAME: ______________________________

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	NRC 14-2 A	TASK TITLE:	Restore CRD to Normal Alignment Following ATWS (Alt Path)
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 A	TASK TITLE:	Restore CRD to Normal Alignment Following ATWS (Alt Path)
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EP-3, Backup Control Rod Insertion

B. OP-25, Control Rod Drive Hydraulic System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to an appropriate IC (IC-66).

B. Ensure the Reactor is scrammed, but RPS is reset.

C. Ensure both CRD pumps are running.

D. Ensure full open CRD Drive Water Pressure Control Valve 03MOV-20.

E. Ensure full closed CRD Cooling Water Pressure Control Valve 03MOV-22.

F. Ensure CRD Flow Control tapeset is run to maximum.

G. Ensure override RD ZAI3FC301(2), CRD FLOW CONTROLLER - AUTO, is preset at a high value (>95).

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. An ATWS has occurred.

B. Control rods were inserted by raising CRD drive water and cooling water differential pressure.

C. Another operator is assigned Reactor water level control.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Perform EP-3 Section 5.15, CRD Hydraulic System Restoration. The procedure has been completed up to step 5.15.4. Secure CRD pump B and leave CRD pump A running."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of EP-3.	Obtains a controlled copy of EP-3.	SAT / UNSAT
2.	Select the correct section to perform the task.	Selects Section 5.15. Starts at step 5.15.4.	SAT / UNSAT
*3.	IF both CRD pumps are running, THEN shut down one of the CRD pumps.	Stops CRD pump B by rotating control switch counterclockwise.	**CRITICAL STEP** SAT / UNSAT
4.	Establish normal CRD Hydraulic System operating values per Section E of OP-25.	Obtains a controlled copy of OP-25 Section E. **EVALUATOR NOTE:** JPM steps 8-13 may be performed in any order, but each has the potential to affect CRD parameters established in other steps. JPM steps 11 and 12 should only be graded SAT if the associated parameter is ensured in band at the completion of the JPM. This may require the candidate to re-adjust the associated controls.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*5.	Establish normal CRD system flow.	Attempts to adjust tapeset on CRD FLOW CNTRL 03FIC-301 to lower CRD system flow. **EVALUATOR NOTE:** The tapeset on 03FIC-301 is failed, such that the controller will not respond to the operator's adjustments while in AUTO. EN-OP-115 provides guidance for the operator to take manual control of a controller that has failed in automatic.	**CRITICAL STEP** SAT / UNSAT
6.	Recognize / report CRD Flow Control Valve failure.	Reports CRD Flow Control Valve failure. **EVALUATOR NOTE:** If candidate asks how to proceed, direct them to make a recommendation and then carry out that recommendation.	SAT / UNSAT
*7.	Places CRD FLOW CNTRL 03FIC-301 in MAN.	Rotates CRD FLOW CNTRL 03FIC-301 selector clockwise to MAN.	**CRITICAL STEP** SAT / UNSAT
*8.	Establish normal CRD system flow.	Adjusts knob on CRD FLOW CNTRL 03FIC-301 to establish between 59 and 61 gpm.	**CRITICAL STEP** SAT / UNSAT
*9.	Establish normal CRD drive water differential pressure.	Throttles closed CRD Drive Water Motor Operated Pressure Control Valve 03MOV-20 by rotating control switch counterclockwise. Adjusts 03MOV-20 as required to establish 260 to 270 psid drive water differential pressure.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
10.	Establish normal CRD cooling water valve alignment.	Fully opens CRD Cooling Water Motor Operated Pressure Control Valve 03MOV-22 by rotating control switch clockwise. **EVALUATOR CUE:** If necessary, report CRD stabilizing valve flow is 6 gpm. **EVALUATOR NOTE:** The step below is the last step in EP-3 Section 5.15.	SAT / UNSAT
11.	Ensure reference leg backfill is restored by performing one of the following: • Slowly open 03CRD-300 (reactor vessel wtr lvl backfill sys CRD charging header tie in valve) • Place all Reference Leg Backfill Systems in service per Section D of OP-27A.	Dispatches operator to ensure reference leg backfill is restored. **EVALUATOR CUE:** Report that backfill has been restored as requested.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: The CRD system is restored to a normal alignment. The CRD flow controller is operated in manual due to failure of the automatic setpoint tape to respond to changes in operator demand.

HANDOUT

- An ATWS has occurred.
- Control rods were inserted by raising CRD drive water and cooling water differential pressure.
- Another operator is assigned Reactor water level control.

Perform EP-3 Section 5.15, CRD Hydraulic System Restoration. The procedure has been completed up to step 5.15.4. Secure CRD pump B and leave CRD pump A running.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 B	TASK TITLE: Restore ESW after injection into RBCLC
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 400000 A4.01 (3.1/3.0)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ________________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 B	TASK TITLE:	Restore ESW after injection into RBCLC
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 B	TASK TITLE: Restore ESW after injection into RBCLC
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-21, Emergency Service Water

B. OP-40, Reactor Building Closed Loop Cooling

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to IC-67.

B. Place RBCLC pump control switches in PTL.

C. Ensure remote SW22, LIFT LEADS LB-4/LA-6 PER OP-21, is inserted as LIFT.

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

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

*** - CRITICAL STEP**

INITIATING CUE

Inform the candidate, "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. Reviews Precautions. Selects section F.3.	SAT / UNSAT
2.	Perform Implementation section of Attachment 3.	Determines implementation section of Attachment 3 has been completed, per initial conditions.	SAT / UNSAT
*3.	Reset ESW Logic A by depressing ESW SYS A INJ SIG RESET pushbutton.	Depresses ESW SYS A INJ SIG RESET pushbutton.	**CRITICAL STEP** SAT / UNSAT
4.	Verify white ESW SYS A INJ SIG light is off.	Observes white ESW SYS A INJ SIG light is off.	SAT / UNSAT
*5.	Reset ESW Logic B by depressing ESW SYS B INJ SIG RESET pushbutton.	Depresses ESW SYS B INJ SIG RESET pushbutton.	**CRITICAL STEP** SAT / UNSAT
6.	Verify white ESW SYS B INJ SIG light is off.	Observes white ESW SYS B INJ SIG light is off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
		EVALUATOR NOTE: The next 6 valves are throttleable, therefore the control switches must be held in the desired position while the valves re-position. Stroke times are each approximately 30-45 seconds.	
*7.	Close ESW RETURN TO SERV WTR 15MOV-175B.	Closes ESW RETURN TO SERV WTR 15MOV-175B by taking control switch CCW to Close.	**CRITICAL STEP** SAT / UNSAT
*8.	Open ESW SYS B TEST VLV 46MOV-102B.	Opens ESW SYS B TEST VLV 46MOV-102B by taking control switch CW to Open.	**CRITICAL STEP** SAT / UNSAT
*9.	Close ESW SYS B INJ VLV 46MOV-101B.	Closes ESW SYS B INJ VLV 46MOV-101B by taking control switch CCW to Close.	**CRITICAL STEP** SAT / UNSAT
*10.	Close ESW RETURN TO SERV WTR 15MOV-175A.	Closes ESW RETURN TO SERV WTR 15MOV-175A by taking control switch CCW to Close.	**CRITICAL STEP** SAT / UNSAT
*11.	Open ESW SYS A TEST VLV 46MOV-102A.	Opens ESW SYS A TEST VLV 46MOV-102A by taking control switch CW to Open.	**CRITICAL STEP** SAT / UNSAT
*12.	Close ESW SYS A INJ VLV 46MOV-101A.	Closes ESW SYS A INJ VLV 46MOV-101A by taking control switch CCW to Close.	**CRITICAL STEP** SAT / UNSAT
13.	Ensure open 15RBC-41 RBCLC Makeup Tank TK-4 Outlet	Dispatches operator to ensure open 15RBC-41 RBCLC Makeup Tank TK-4 Outlet. **EVALUATOR CUE:** 15RBC-41 RBCLC Makeup Tank TK-4 Outlet is open.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
14.	Start up RBCLC System per Section D of OP-40.	**EVALUATOR CUE:** Time compression will be invoked and another Operator will restore RBCLC. **SIMULATOR OPERATOR ACTION:** Start RBCLC pumps A & B. Green flag RBCLC pump C. Inform Candidate RBCLC discharge pressure is stable and > 80 psig.	SAT / UNSAT
15.	Candidate reads OP-21 Steps F.3.14, 15, & 16.	**EVALUATOR CUE:** Inform Candidate no ESW valves were re-positioned during AOP-11. If asked about the position of Breaker 71MCC-152-0D4, report open.	SAT / UNSAT
16.	**WHEN** RBCLC discharge header pressure is stable at **GREATER THAN OR EQUAL TO** 80 psig, perform Restoration section of Attachment 3.	**EVALUATOR CUE:** OP-21 Attachment 3 Restoration section is complete.	SAT / UNSAT
17.	Shut down ESW per Subsections F.1 and F.2.	Obtains Subsections F.1 and F.2.	SAT / UNSAT
18.	Verify RBCLC System is in normal operation.	Determines RBCLC system is in normal operation. **EVALUATOR CUE:** If needed, state that the RBCLC system is in normal operation.	SAT / UNSAT
19.	Verify EDG A and C are shutdown.	Determines EDG A and C are shutdown.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
20.	Verify ventilation loads downstream of 46MOV-101A do not require ESW.	**EVALUATOR CUE:** Ventilation loads downstream of 46MOV-101A do not require ESW.	SAT / UNSAT
21.	Ensure open ESW SYS A TEST VLV 46MOV-102A.	Observes ESW SYS A TEST VLV 46MOV-102A is open. • Red light on, Green light off	SAT / UNSAT
22.	Ensure closed ESW SYS A INJ VLV 46MOV-101A	Observes ESW SYS A INJ VLV 46MOV-101A is closed. • Red light off, Green light on	SAT / UNSAT
*23.	Stop ESW PMP A 46P-2A.	Stops ESW PMP A 46P-2A by taking control switch CCW to Stop. **EVALUATOR CUE:** Another operator will shutdown ESW loop B.	**CRITICAL STEP** SAT / UNSAT
	EVALUATOR: Terminate the task at this point.		

Task Standard: The ESW logic is reset, ESW valves are aligned in a normal configuration, and ESW pump A is shutdown.

HANDOUT

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

Restore the ESW system to normal per OP-21 Section F.3.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 C	TASK TITLE: Start First Feedwater Pump
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 259001 A4.02 (3.9/3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: ____________________ OPERATIONS REVIEW: ____________________

APPROVED: ____________________

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CANDIDATE NAME: ____________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 C	TASK TITLE:	Start First Feedwater Pump
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 C	TASK TITLE: Start First Feedwater Pump
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-2A, Feedwater System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Plant in a startup condition near 500 psig (IC-68).

B. Ensure both Feedwater pumps are secured.

C. Ensure 34MOV-100A and 34MOV-100B are closed.

D. Ensure Reactor water level is being maintained in the green band and controlled with 34FCV-137 in AUTO.

E. Place FDWTR screen on EPIC slave 1 monitor.

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. A plant startup is in progress.

B. Reactor pressure is approaching 500 psig.

C. Reactor water level is being controlled with 34FCV-137 in AUTO.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Start Feedwater pump A per OP-2A Section D.2. The procedure is in progress up to step D.2.18."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-2A.	Obtains a controlled copy of OP-2A.	SAT / UNSAT
2.	Select the correct section to perform the task.	Selects Section D.2 of OP-2A. Proceeds to Step D.2.18.	SAT / UNSAT
*3.	Test RFPT A trip as follows at panel 09-6: • Depress A MAN TRIP pushbutton.	Depresses A MAN TRIP pushbutton.	**CRITICAL STEP** SAT / UNSAT
4.	Verify the following: • RFPT A LP AND HP Stop Valves are closed. • Annunciator 09-6-4-2 RFPT A TRIP is in alarm.	Observes RFPT A LP Stop Valve green light on, red light off. Observes RFPT A HP Stop Valve green light on, red light off. Observes annunciator 09-6-4-2 is in alarm.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*5.	Reset RFPT A trip as follows at panel 09-6: • Depress AND hold A MAN TRIP RESET pushbutton.	Depresses A MAN TRIP RESET pushbutton. **EVALUATOR NOTE:** The candidate should hold the pushbutton while observing conditions in the next step, but it is only critical that the pushbutton is depressed long enough to reset the trip signal.	**CRITICAL STEP** SAT / UNSAT
6.	Verify the following: • RFPT A LP AND HP Stop Valves are open. • Annunciator 09-6-4-2 RFPT A TRIP is clear.	Observes RFPT A LP Stop Valve green light off, red light on. Observes RFPT A HP Stop Valve green light off, red light on. Observes annunciator 09-6-4-2 is clear.	SAT / UNSAT
*7.	Release A MAN TRIP RESET pushbutton.	Releases A MAN TRIP RESET pushbutton.	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR CUE: Time compression is in effect. The RFPT A local trip test and reset have been completed SAT per OP-2A steps D.2.20 and D.2.21.	
8.	Perform RFPT A local trip test as follows...	Determines RFPT A local trip test has been completed SAT, per evaluator cue.	SAT / UNSAT
9.	Perform RFPT A local trip reset as follows...	Determines RFPT A local trip reset has been completed SAT, per evaluator cue.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
10.	Open 34FWS-16A (rx fdwtr pump A inlet to FCV-137 isol valve).	Dispatches operator to open 34FWS-16A. **EVALUATOR CUE:** 34FWS-16A is open.	SAT / UNSAT
11.	WHILE performing the following steps, maintain RPV water level BETWEEN 197 and 203 inches on 06LI-94A, B, and C.	Acknowledges procedure step. **EVALUATOR CUE:** Another operator will monitor Reactor water level and operation of 34FCV-137.	SAT / UNSAT
*12.	Place RFPT A MSC on high speed stop as follows: IF 34FCV-137 is in automatic (BAL), THEN perform the following: Slowly raise RFPT A MTR SPEED CHANGER to roll A RFPT.	Slowly raises RFPT A MTR SPEED CHANGER until RFPT A speed begins to rise.	**CRITICAL STEP** SAT / UNSAT
*13.	Slowly raise RFPT A MTR SPEED CHANGER to high speed stop.	Slowly raises RFPT A MTR SPEED CHANGER until high speed stop red light illuminates and green light extinguishes.	**CRITICAL STEP** SAT / UNSAT
14.	Continue to raise MSC for at least 5 seconds after reaching high speed stop to ensure MSC is fully on high speed stop.	Raises RFPT A MTR SPEED CHANGER for at least 5 seconds after high speed stop red light first illuminates and green light extinguishes.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
15.	Take control of RFPT A speed with MGU as follows: Raise and lower RFPT A speed a small amount by adjusting RFP A FLOW CNTRL 06-84A manual control knob.	Adjusts RFP A FLOW CNTRL 06-84A manual control knob a small amount in both the clockwise and counterclockwise directions. Observes RFPT A speed raises and lowers a small amount.	SAT / UNSAT
16.	IF 34FCV-137 is in automatic (BAL), THEN adjust RFP A FLOW CNTRL 06-84A manual control knob to maintain RFP A discharge pressure GREATER THAN RPV pressure.	May adjust RFP A FLOW CNTRL 06-84A manual control knob to raise RFP A discharge pressure. **EVALUATOR NOTE:** RFP A discharge pressure will already be greater than Reactor pressure, therefore no adjustment is required.	SAT / UNSAT / NA
17.	Close the following valves: • RFPT A STOP VLV DRNS o 41MOV-104A o 41MOV-107A • RFPT A DRNS o 41MOV-108A o 41MOV-112A2	Closes 41MOV-104A by depressing close pushbutton. Closes 41MOV-107A by depressing close pushbutton. Closes 41MOV-108A by depressing close pushbutton. Closes 41MOV-112A2 by depressing close pushbutton.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
		EVALUATOR CUE: 31MOV-103A is NOT required to be open for Main Turbine warming.	
18.	IF 31MOV-103A is not required to be open for main turbine warming, THEN perform the following: Verify annunciator 09-6-4-33 RFPT A LP STM DRN POT LVL HI is clear.	Observes annunciator 09-6-4-33 is clear.	SAT / UNSAT
19.	Ensure closed RFPT A LP STM DRN 31MOV-103A.	Closes 31MOV-103A by depressing close pushbutton. **EVALUATOR CUE:** Another operator will continue with this procedure as actions become necessary.	SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: Feedwater pump A is running with discharge pressure greater than Reactor pressure.

HANDOUT

- A plant startup is in progress.
- Reactor pressure is approaching 500 psig.
- Reactor water level is being controlled with 34FCV-137 in AUTO.

Start Feedwater pump A per OP-2A Section D.2. The procedure is in progress up to step D.2.18.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 D	TASK TITLE: Start EDGs A and C Due to Hurricane Warning
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 264000 A4.04 (3.7/3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 D	TASK TITLE:	Start EDGs A and C Due to Hurricane Warning
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO	NRC 14-2 D	TASK TITLE: Start EDGs A and C Due to Hurricane Warning
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-22, Diesel Generator Emergency Power

III. TOOLS AND EQUIPMENT

A. Synch Key

IV. SET UP REQUIREMENTS

A. Plant in a power operating with Bus 10500 supplied from T-3 (IC-68).

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.

VI. TASK CONDITIONS

A. The National Weather Service has issued a Hurricane Warning for Oswego County.

B. AOP-13, High Winds, Hurricanes, and Tornadoes, has been entered.

C. AOP-13 Step E.3.9.a requires starting and loading each pair of EDGs.

D. Pre-startup checks have been completed for all EDGs.

E. EDGs have been declared inoperable.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Start EDGs A and C per OP-22 Section D.1. Load each EDG to approximately 2600 KW."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-22.	Obtains a controlled copy of OP-22.	SAT / UNSAT
2.	Select the correct section to perform the task.	Selects Section D.1 of OP-22.	SAT / UNSAT
3.	Perform pre-startup checks for EDG A and C per Subsections G.25 and G.26.	Determines pre-startup checks have been completed, per initial conditions.	SAT / UNSAT
4.	IF pre-startup checks are omitted...	Determines pre-startup checks have NOT been omitted, per initial conditions.	SAT / UNSAT
*5.	Simultaneously place the following control switches to START: • EDG A CNTRL • EDG C CNTRL	Simultaneously rotates EDG A CONTROL and EDG C CONTROL switches clockwise to START.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
6.	IF frequency of either EDG does not stabilize BETWEEN 58 and 62 Hz AFTER reaching normal voltage, THEN immediately place the affected EDG CNTRL switch in STOP.	Observes EDG A and C frequency stabilize between 58 and 62 Hz.	SAT / UNSAT
7.	WHEN approximately 10 seconds have elapsed, verify the following: • EDG A speed is approximately 900 rpm. • EDG A frequency is approximately 60 Hz. • EDG A voltage is approximately 4.3 kV. • EDG C speed is approximately 900 rpm. • EDG C frequency is approximately 60 Hz. • EDG C voltage is approximately 4.3 kV. • EDG A & C TIE BKR 10504 is closed. • ESW Pump 46P-2A is running.	Observes EDG A speed is approximately 900 rpm. Observes EDG A frequency is approximately 60 Hz. Observes EDG A voltage is approximately 4.3 KV. Observes EDG C speed is approximately 900 rpm. Observes EDG C frequency is approximately 60 Hz. Observes EDG C voltage is approximately 4.3 KV. Observes EDG A & C TIE BKR 10504 green light off, red light on. Observes ESW pump 46P-2A green light off, red light on.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT

8.	Verify the following at panel 92HV-9A:
	• The following fans indicate running:
	  • 92FN-1A
	  • 92FN-1C
	• The following fans indicate stopped:
	  • 92FN-2A
	  • 92FN-2C
	• The following annunciators are clear:
	  • HV-9A-7 SUPPLY FAN FN-1A TROUBLE
	  • HV-9A-9 SUPPLY FAN FN-IC TROUBLE
		Dispatches operator to verify conditions at panel 92HV-9A.
		
		EVALUATOR CUE: All verifications for OP-22 step D.1.6 have been completed SAT.
			SAT / UNSAT

*9.	Trip EDG A & C TIE BKR 10504, allow switch to spring return to AUTO.	Trips EDG A & C TIE BKR 10504 by rotating control switch counterclockwise to TRIP, then releasing switch.	**CRITICAL STEP** SAT / UNSAT
10.	Verify EPIC-D-730 alarmed and cleared on alarm typer.	Observes EPIC-D-730 alarmed and cleared on alarm typer.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
11.	IF 10500 bus is being supplied by 71T-3, THEN ensure AUTO MANUAL T-3 LTC CONTROL switch is in MAN.	Rotates AUTO MANUAL T-3 LTC CONTROL switch clockwise to MAN. **EVALUATOR ROLE PLAY:** If contacted as Power Control, acknowledge T-3 LTC will be taken to manual.	SAT / UNSAT
*12.	Place the following switches in DROOP: • EDG A GOV MODE • EDG C GOV MODE	Places EDG A GOV MODE switch in DROOP. Places EDG C GOV MODE switch in DROOP.	**CRITICAL STEP** SAT / UNSAT
*13.	Parallel EDG A with 10500 Bus as follows: Place EDG A LOAD BKR SYNCH SW in ON.	Inserts synch key and rotates EDG A LOAD BKR SYNCH SW clockwise to ON.	**CRITICAL STEP** SAT / UNSAT
14.	Adjust EDG A VOLT REG to match INCOMING and RUNNING voltage.	Adjusts EDG A VOLT REG to match INCOMING and RUNNING voltage, as necessary.	SAT / UNSAT / NA
*15.	Adjust EDG A GOV to rotate SYNCHROSCOPE slowly in the FAST direction (clockwise).	Adjusts EDG A GOV to establish SYNCHROSCOPE rotation slowly in the FAST direction (clockwise). **EVALUATOR NOTE:** If initial conditions are such that an acceptable rotation is initially present, mark this step NA. The step is then NOT critical.	**CRITICAL STEP** SAT / UNSAT / NA

	STEP	STANDARD	EVALUATION / COMMENT
*16.	WHEN EDG A and 10500 Bus are in phase (SYNCHROSCOPE at 12 o'clock), close EDG A LOAD BKR 10502.	When SYNCHROSCOPE is at approximately 12 o'clock, closes EDG A LOAD BKR 10502 by rotating control switch clockwise.	**CRITICAL STEP** SAT / UNSAT
*17.	Adjust EDG A GOV to raise EDG A load 100 to 300 kW.	Rotates EDG A GOV control switch clockwise to establish EDG A load 100 to 300 kW, as necessary. **EVALUATOR NOTE:** If initial conditions are such that an acceptable loading is initially present, mark this step NA. The step is then NOT critical.	**CRITICAL STEP** SAT / UNSAT / NA
18.	Place EDG A LOAD BKR SYNCH SW in OFF and remove synch switch handle.	Rotates EDG A LOAD BKR SYNCH SW counterclockwise to OFF and removes synch key.	SAT / UNSAT
19.	IF A EDG has operated at LESS THAN 520 kW for GREATER THAN 4.5 hours, THEN perform the following...	Determines EDG A has NOT operated less than 520 kW for greater than 4.5 hours. **EVALUATOR CUE:** If asked, report that EDG A has NOT operated less than 520 kW for greater than 4.5 hours.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*20.	Adjust EDG A GOV to raise EDG A load to LESS THAN OR EQUAL TO 2,600 kW over 3 to 5 minutes in approximately 800 kW increments.	Rotates EDG A GOV control switch clockwise to raise EDG A load to approximately 2600 kW in approximately 800 kW increments. **EVALUATOR CUE:** If desired, prompt the candidate that time compression is in effect and one minute has passed. This cue can be repeated as necessary to complete loading of EDG A.	**CRITICAL STEP** SAT / UNSAT
*21.	Parallel EDG C with 10500 Bus as follows: Place EDG C LOAD BKR SYNCH SW in ON.	Inserts synch key and rotates EDG C LOAD BKR SYNCH SW clockwise to ON.	**CRITICAL STEP** SAT / UNSAT
22.	Adjust EDG C VOLT REG to match INCOMING and RUNNING voltage.	Adjusts EDG C VOLT REG to match INCOMING and RUNNING voltage, as necessary.	SAT / UNSAT / NA
*23.	Adjust EDG C GOV to rotate SYNCHROSCOPE slowly in the FAST direction (clockwise).	Adjusts EDG C GOV to establish SYNCHROSCOPE rotation slowly in the FAST direction (clockwise). **EVALUATOR NOTE:** If initial conditions are such that an acceptable rotation is initially present, mark this step NA. The step is then NOT critical.	**CRITICAL STEP** SAT / UNSAT / NA

	STEP	STANDARD	EVALUATION / COMMENT
*24.	WHEN EDG C and 10500 Bus are in phase (SYNCHROSCOPE at 12 o'clock), close EDG C LOAD BKR 10512.	When SYNCHROSCOPE is at approximately 12 o'clock, closes EDG C LOAD BKR 10512 by rotating control switch clockwise.	**CRITICAL STEP** SAT / UNSAT
*25.	Adjust EDG C GOV to raise EDG C load 100 to 300 kW.	Rotates EDG C GOV control switch clockwise to establish EDG C load 100 to 300 kW, as necessary. **EVALUATOR NOTE:** If initial conditions are such that an acceptable loading is initially present, mark this step NA. The step is then NOT critical.	**CRITICAL STEP** SAT / UNSAT / NA
26.	Place EDG C LOAD BKR SYNCH SW in OFF and remove synch switch handle.	Rotates EDG C LOAD BKR SYNCH SW counterclockwise to OFF and removes synch key.	SAT / UNSAT
27.	IF C EDG has operated at LESS THAN 520 kW for GREATER THAN 4.5 hours, THEN perform the following...	Determines EDG C has NOT operated less than 520 kW for greater than 4.5 hours. **EVALUATOR CUE:** If asked, report that EDG C has NOT operated less than 520 kW for greater than 4.5 hours.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*28.	Adjust EDG C GOV to raise EDG C load to LESS THAN OR EQUAL TO 2,600 kW over 3 to 5 minutes in approximately 800 kW increments.	Rotates EDG C GOV control switch clockwise to raise EDG C load to approximately 2600 kW in approximately 800 kW increments. **EVALUATOR CUE:** If desired, prompt the candidate that time compression is in effect and one minute has passed. This cue can be repeated as necessary to complete loading of EDG C. **EVALUATOR CUE:** Another operator will complete the remaining portions of OP-22 for startup of EDGs A and C.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: EDGs A and C are running and loaded to approximately 2600 KW.

HANDOUT

- The National Weather Service has issued a Hurricane Warning for Oswego County.
- AOP-13, High Winds, Hurricanes, and Tornadoes, has been entered.
- AOP-13 Step E.3.9.a requires starting and loading each pair of EDGs.
- Pre-startup checks have been completed for all EDGs.
- EDGs have been declared inoperable.

Start EDGs A and C per OP-22 Section D.1. Load each EDG to approximately 2600 KW.

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JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 E	TASK TITLE:	Restore Shutdown Cooling After Isolation, RHR Pump Trips
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 205000 A4.01 (3.7/3.7)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 E	TASK TITLE:	Restore Shutdown Cooling After Isolation, RHR Pump Trips
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 E	TASK TITLE:	Restore Shutdown Cooling After Isolation, RHR Pump Trips
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. AOP-30, Loss of Shutdown Cooling

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to a low-power IC (IC-67).

B. Ensure RHR B was initially in Shutdown Cooling lineup with RHR pump B running, but is now isolated by closing valves 25B, 17, and 18.

C. Close 10MOV-12B.

D. Ensure Reactor coolant temperature is above 140°F.

E. Ensure Reactor water level is greater than 215".

F. Ensure EPIC screen RHRB is on a screen near the JPM location.

G. Ensure RHRSW pump B is in service and RHRSW pump D is in standby.

H. Ensure all actions of AOP-30 Attachment 1 are complete up to step 5.G.

I. Ensure the following simulator programming:

- Malfunction RH01:B, RHR Pump B Trip (Trigger 1)
- Trigger 1 – Event Command: zlo10as35b(2)==1 (code for 10MOV-12B red light on), Action: None

J. Ensure the following tags are hanging:

- RHR KEEP-FULL PMP 10P-2B control switch – in STOP with red tag
- MIN FLOW VLV 10MOV-16B control switch – red tag
- RHR TEST TORUS CLG & SPRAY 10MOV-39B – red tag

V. EVALUATOR NOTES

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

S/RO	NRC 14-2 E	TASK TITLE:	Restore Shutdown Cooling After Isolation, RHR Pump Trips
APPL. TO	JPM NUMBER		

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.

VI. TASK CONDITIONS

A. RHR B was in Shutdown Cooling.

B. A spurious isolation signal caused Shutdown Cooling to isolate.

C. The cause of the isolation signal has been determined and corrected.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Restore Shutdown Cooling using RHR pump B per AOP-30 Attachment 1. The procedure has been complete up to step 5.G."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of AOP-30 Attachment 1.	Obtains a controlled copy of AOP-30 Attachment 1.	SAT / UNSAT
2.	IF white HI DW PRESS OR LO LVL CLOSE OF 10MOV-25A(B) IN SHUTDOWN CLG 10A-DS85A(B) light is on, THEN reset logic as follows:	Observes white HI DW PRESS OR LO LVL CLOSE OF 10MOV-25B IN SHUTDOWN CLG 10A-DS85A(B) light is not lit.	SAT / UNSAT
3.	Ensure open HX A(B) BYP VLV 10MOV-66A(B).	Observes 10MOV-66B green light off, red light on.	SAT / UNSAT
*4.	Open SHUTDOWN CLG SUCT 10MOV-18.	Opens 10MOV-18 by rotating control switch clockwise.	**CRITICAL STEP** SAT / UNSAT
*5.	Open SHUTDOWN CLG SUCT 10MOV-17.	Opens 10MOV-17 by rotating control switch clockwise.	**CRITICAL STEP** SAT / UNSAT
6.	Ensure closed HX A(B) OUTLET VLV 10MOV-12A(B).	Observes 10MOV-12B green light on, red light off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	Ensure RPV water level is GREATER THAN 215 inches.	Observes Reactor water level is above 215 inches.	SAT / UNSAT
*8.	Start RHR pump that was in service prior to isolation.	Starts RHR pump B by rotating control switch clockwise.	**CRITICAL STEP** SAT / UNSAT
*9	Open LPCI INBD INJ VLV 10MOV-25A(B).	Opens 10MOV-25B by rotating control switch clockwise. **EVALUATOR NOTE:** RHR pump B amps will be just below the red line value. If the candidate identifies this and is looking for direction, report that RHR pump B operation is satisfactory as long current does not exceed red line amps. **EVALUATOR CUE:** Direct the candidate to establish Reactor coolant temperature control in a band of 120-140°F using RHR heat exchanger inlet temperature.	**CRITICAL STEP** SAT / UNSAT
*10.	Establish normal temperature control per Section E of OP-13D.	Throttles open 10MOV-12B by rotating control switch clockwise. **EVALUATOR NOTE:** When 10MOV-12B red light illuminates, an automatic trigger trips RHR pump B. This initiates an alternate path for the candidate to start RHR pump D to re-establish Shutdown Cooling flow.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
11.	Recognize trip of RHR pump B.	Recognizes trip of RHR pump B. **EVALUATOR NOTE:** This may include recognizing annunciator 09-3-2-5, RHR pump B indicating light, flow, and/or amps. **EVALUATOR ROLE PLAY:** If asked to determine cause of RHR pump B trip, report RHR pump B tripped on overcurrent. **EVALUATOR CUE:** If asked how to proceed, direct candidate to make a recommendation for restoring Shutdown Cooling and then carry out that recommendation. **EVALUATOR NOTE:** The candidate may use guidance in AOP-30 Attachment 1 or OP-13D section D for starting RHR pump D. Depending on the exact procedural path taken, additional steps may be taken (such as re-positioning 10MOV-12B and/or closing 10MOV-15B), but the following two steps are the only critical steps.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*12.	Open SHUTDOWN CLG SUCT VLV 10MOV-15D.	Opens 10MOV-15D by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
*13.	Start RHR pump D.	Starts RHR pump D by rotating control switch clockwise to START. **EVALUATOR CUE:** Another operator will continue actions in the procedure.	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: Shutdown Cooling is placed in service on RHR B. RHR pump D is started in response to the trip of RHR pump B.

HANDOUT

- RHR B was in Shutdown Cooling.
- A spurious isolation signal caused Shutdown Cooling to isolate.
- The cause of the isolation signal has been determined and corrected.

Restore Shutdown Cooling using RHR pump B per AOP-30 Attachment 1. The procedure has been complete up to step 5.G.

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JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 F	TASK TITLE:	Manually Isolate Reactor Building Ventilation, Low Reactor Building D/P (Alt Path)
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 261000 A4.06 (3.3/3.6)

JAF TASK NUMBER: ______________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: D Kelly

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CANDIDATE NAME: ______________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 F	TASK TITLE:	Manually Isolate Reactor Building Ventilation, Low Reactor Building D/P (Alt Path)
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 F	TASK TITLE:	Manually Isolate Reactor Building Ventilation, Low Reactor Building D/P (Alt Path)
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-51A, Reactor Building Ventilation and Cooling System

B. OP-20, Standby Gas Treatment System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to a power operating IC (IC-69).

B. Ensure the following simulator programming:

- Malfunction HV03, Secondary Containment Leakage, 50%
- Event Trigger 1: Event – zdi11sgta04(3)==1&zdi11sgtb04(3)==1, Command – imf hv03 10
- Event Trigger 29: Event – zdi5as1(1)==1, Command – set ypo:rp02:a=1
- Event Trigger 30: Event – zdi5as1(1)==1, Command – set ypo:rp02:b=1

C. Insert a Reactor scram.

D. Restore Reactor water level above 177".

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. A radioactive steam leak has developed in the Reactor Building.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Manually isolate the Reactor Building per OP-51A section G.1."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-51A.	Obtains a controlled copy of OP-51A. Refers to section G.1.	SAT / UNSAT
2.	Ensure SBGT is running per OP-20.	Obtains a controlled copy of OP-20. Refers to section D.1 or D.2 or Posted Attachment 3. **EVALUATOR ROLE PLAY:** If asked which train of SBGT to start, tell the candidate that either train is fine. **EVALUATOR NOTE:** The subsequent JPM steps are written for use of OP-20 sections D.1 or D.2. If the Posted Attachment is used, slightly different verifications will be performed, but there will be no impact on Critical Steps.	SAT / UNSAT
*3.	Ensure open ABOVE(BELOW) EL 369' SUCT 01-125MOV-11(12)	Opens ABOVE(BELOW) EL 369' SUCT 01-125MOV-11(12) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
*4.	Ensure open TRAIN A(B) INLET 01-125MOV-14A(B)	Opens TRAIN A(B) INLET 01-125MOV-14A(B) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	Verify the following: • White light for AIR HTR 01-125E-5A(B) is on	Observes white light for AIR HTR 01-125E-5A(B) is on.	SAT / UNSAT
6.	• Red light for AIR HTR 01-125E-5A(B) is on	Observes red light for AIR HTR 01-125E-5A(B) is on.	SAT / UNSAT
7.	• TRAIN A(B) CLG VLV 01-125MOV-100A(B) is closed	Observes TRAIN A(B) CLG VLV 01-125MOV-100A(B) green light on, red light off.	SAT / UNSAT
8.	• FN DISCH 01-125MOV-15A(B) is open	Observes FN DISCH 01-125MOV-15A(B) green light is off, red light is on.	SAT / UNSAT
9.	• TRAIN A(B) FN 01-125FN-1A(B) is running	Observes TRAIN A(B) FN 01-125FN-1A(B) green light is off, red light is on.	SAT / UNSAT
10.	IF standby gas treatment is being placed in service to support any of the following...	Determines step is N/A.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
11.	IF SGT Train B(A) is shutdown, THEN perform the following: • Verify open TRAIN B(A) CLG VLV 01-125MOV-100B(A).	Observes TRAIN B(A) CLG VLV 01-125MOV-100B(A) green light off, red light on.	SAT / UNSAT
12.	• Verify flow rate is 6000 to 5800 scfm on SGT FLOW 01-125FI-106A.	Observes SGT flow rate.	SAT / UNSAT
13.	IF RB DIFF PRESS 01-125DPI-100A or B indicates less negative than -0.25 inches water, THEN ensure SGT Train B is in service per Subsection D.2.	Observes Reactor Building D/P is more negative than -0.25 inches water. **EVALUATOR NOTE:** Reactor Building D/P is SAT at this point in the JPM because normal Reactor Building ventilation has not yet been isolated. Once the Reactor Building isolation is performed, Reactor Building D/P will be UNSAT. **EVALUATOR NOTE:** The candidate will proceed back to OP-51A step G.1.2.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*14.	Depress the following pushbuttons at panel 09-75: • RB VENT ISOL A • RB VENT ISOL B	Depresses RB VENT ISOL A pushbutton.	**CRITICAL STEP** SAT / UNSAT
		Depresses RB VENT ISOL B pushbutton. **EVALUATOR NOTE:** The verifications below may be done in any order.	**CRITICAL STEP** SAT / UNSAT
15.	Verify isolation per Subsection G.2.	Proceeds to OP-51A section G.2.	SAT / UNSAT
16.	Verify the following: • INBD SUPP ISOL 66AOV-100A – Closed	Observes 66AOV-100A green light on, red light off.	SAT / UNSAT
17.	• OUTBD EXH ISOL 66AOV-101A – Closed	Observes 66AOV-101A green light on, red light off.	SAT / UNSAT
18.	• BELOW EL 369' RECIRC 66AOD-105 – Open	Observes 66AOD-105 green light off, red light on.	SAT / UNSAT
19.	• EL 369' RECIRC 66AOD-108 – Open	Observes 66AOD-108 green light off, red light on.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
20.	• OUTBD SUPP ISOL 66AOV-100B – Closed	Observes 66AOV-100B green light on, red light off.	SAT / UNSAT
21.	• INBD EXH ISOL 66AOV-101B – Closed	Observes 66AOV-101B green light on, red light off.	SAT / UNSAT
22.	• SUPP FN 66FN-5A, 5B, 5C (two of three) – On	Observes 2 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-5A • 66FN-5B • 66FN-5C	SAT / UNSAT
23.	• BELOW EL 369' EXH FN 66FN-12A OR 66FN-12B – On	Observes 1 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-12A • 66FN-12B	SAT / UNSAT
24.	• EL 369' EXH FN 66FN-13A AND 66FN-13B – Off	Observes 66FN-13A green light on, red light off. Observes 66FN-13B green light on, red light off.	SAT / UNSAT
25.	• TK EXH FN 66FN-35 – Off	Observes 66FN-35 green light on, red light off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
26.	• CRESC SUPP FN 66FN-26A OR 66FN-26B – On	Observes 1 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-26A • 66FN-26B	SAT / UNSAT
27.	• Standby Gas Treatment – Running per OP-20	Determines SBGT is still running per OP-20.	SAT / UNSAT
28.	• Reactor Building to atmosphere differential pressure – (-)0.25 to (-) 2.50 in. water gauge	Observes Reactor Building to atmosphere differential pressure is less negative than 0.25 in. water gauge. **EVALUATOR NOTE:** The candidate will now proceed to OP-20 section D.1 or D.2 to start the second train of SBGT.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*29.	Ensure open BELOW(ABOVE) EL 369' SUCT 01-125MOV-12(11).	Opens BELOW(ABOVE) EL 369' SUCT 01-125MOV-12(11) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
*30.	Ensure open TRAIN B(A) INLET 01-125MOV-14B(A).	Opens TRAIN B(A) INLET 01-125MOV-14B(A) by rotating control switch clockwise to open. **EVALUATOR CUE:** Another operator has verified proper response of Standby Gas Treatment Train B(A).	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: The Reactor Building is isolated and Reactor Building differential pressure is restored with two trains of Standby Gas Treatment in service.

HANDOUT

- **A radioactive steam leak has developed in the Reactor Building.**

Manually isolate the Reactor Building per OP-51A section G.1.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 G	TASK TITLE: Reset Group 2 Isolation, Restore RWCU
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 223002 A4.03 (3.6/3.5)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ____________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: ____________________ OPERATIONS REVIEW: ____________________

APPROVED: ____________________

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CANDIDATE NAME: ____________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 G	TASK TITLE:	Reset Group 2 Isolation, Restore RWCU
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO	NRC 14-2 G	TASK TITLE:	Reset Group 2 Isolation, Restore RWCU
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. AOP-15, Isolation Verification and Recovery

B. OP-28, Reactor Water Clean-Up System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to a power operating IC (IC-69).

B. Insert a Reactor scram.

C. Restore Reactor water level above 177".

D. Trip both Recirculation pumps.

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, place keeping and three-point communication.

VI. TASK CONDITIONS

A. Both Recirculation pumps have tripped.

B. A Reactor scram has been inserted.

C. Reactor water level lowered to 140 inches.

D. Reactor water level has been recovered above 177 inches.

E. Other operators have completed isolation verifications per AOP-15 Attachments 1 & 2.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Reset the Group 2 isolation per AOP-15 section G.1. Then, restore RWCU per OP-28 section G.4. Establish gravity blowdown flow to the Main Condenser."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of AOP-15.	Obtains a controlled copy of AOP-15. Refers to section G.1.	SAT / UNSAT
2.	WHEN it has been determined that an undesired release will not occur when isolation is reset, continue with procedure.	Continues with procedure. **EVALUATOR CUE:** If the candidate requests assistance determining an undesired release will not occur, then inform the candidate "An undesired release will not occur when isolation is reset".	SAT / UNSAT
3.	Place control switch for DW FLOOR DRN 20AOV-83 in CLOSE.	Rotates control switch for DW FLOOR DRN 20AOV-83 to CLOSE.	SAT / UNSAT
4.	Place control switch for DW EQUIP DRN 20AOV-95 to CLOSE, spring return to AUTO.	Rotates control switch for DW EQUIP DRN 20AOV-95 to CLOSE, then releases.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	Simultaneously rotate the following PCIS VLV RESET switches to both RESET positions, spring return to NORM: • 16A-S32 • 16A-S33	Simultaneously rotates PCIS VLV RESET switches 16A-S32 and 16A-S33 to clockwise positions.	**CRITICAL STEP** SAT / UNSAT
		Simultaneously rotates PCIS VLV RESET switches 16A-S32 and 16A-S33 to counterclockwise positions. **EVALUATOR NOTE:** These switches may be rotated in either direction first.	**CRITICAL STEP** SAT / UNSAT
6.	Restore RWCU System, if necessary, per Section G of OP-28.	Obtains a controlled copy of OP-28. Refers to section G.4 per initiating cue.	SAT / UNSAT
7.	IF boron was injected per the EOPs, THEN Subsection G.4 cannot be performed.	Determines no boron has been injected. **EVALUATOR CUE:** If asked about boron injection, report that no boron has been injected.	SAT / UNSAT
8.	Ensure Subsection G.1 is complete.	Indicates need to ensure Subsection G.1 is complete. **EVALUATOR CUE:** OP-28 sections G.1 and G.2 have been completed by another operator.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
9.	Ensure one of the following RWCU pumps is isolated by performing one of the following:	Determines RWCU pump A is the preferred pump to isolate. **EVALUATOR NOTE:** A note in OP-28 identifies RWCU pump A as the preferred pump to isolate. **EVALUATOR CUE:** If asked about which pump to isolate, direct the candidate to isolate RWCU pump A.	SAT / UNSAT
10.	IF RWCU Pump A will be the isolated pump, THEN ensure closed the following valves: • 12RWC-19A (RWCU pump A suct inner isol valve) • 12RWC-73A (RWCU pump A suct outer isol valve) • 12RWC-29A (RWCU pump A disch isol valve) • 12RWC-87A (outlet block valve 12FE-20A) • 12RWC-38A (RWCU pump A disch check valve RWC-28A bypass valve)	Directs operator to close valves to isolate RWCU pump A. **EVALUATOR CUE:** OP-28 step G.4.3.a has been completed to isolate RWCU pump A.	SAT / UNSAT
11.	Reset isolation per AOP-15, if necessary.	Determines isolation has been reset per AOP-15.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
12.	Ensure closed 12RWC-63 (RWCU return line manual isol valve).	Directs operator to ensure closed 12RWC-63. **EVALUATOR CUE:** 12RWC-63 is closed.	SAT / UNSAT
*13.	Open CLN UP SUCT 12MOV-15.	Opens 12MOV-15 by rotating control switch clockwise to OPEN.	**CRITICAL STEP** SAT / UNSAT
*14.	Open CLN UP SUCT 12MOV-18.	Opens 12MOV-18 by rotating control switch clockwise to OPEN.	**CRITICAL STEP** SAT / UNSAT
15.	Ensure seal purge flow rate as follows: IF seal purge flow is for 12P-1B only, THEN throttle 12RWC-88B as necessary (bypass regulating valve 12P-1B) to establish a flow rate BETWEEN 1.8 and 2.2 gpm as indicated on 12FI-20 (RWCU pumps mini purge flow indic).	Directs operator to establish seal purge flow for RWCU pump A. **EVALUATOR CUE:** RWCU pump seal purge is 2 gpm.	SAT / UNSAT
16.	Ensure ST-26J, Heatup and Cooldown Temperature Checks, is in progress prior to establishing blowdown flow.	Acknowledges cue. **EVALUATOR CUE:** Another operator is performing ST-26J.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
17.	Slowly establish a gravity blowdown flow rate of LESS THAN OR EQUAL TO 30 gpm per Subsection G.5.	Proceeds to OP-28 section G.5.	SAT / UNSAT
18.	Direct RP to ensure posting requirements are met to support the blowdown operation.	Directs RP to ensure posting requirements are met to support the blowdown operation. **EVALUATOR CUE:** RP reports that posting requirements are met.	SAT / UNSAT
19.	IF reactor coolant temperature is LESS THAN 212°F, THEN ensure RPV is vented to prevent drawing a vacuum inside RPV.	Determines Reactor coolant temperature is greater than 212°F.	SAT / UNSAT
20.	At the discretion of the Shift Manager, contact the Reactor Analyst prior to commencing blowdown to turn off core thermal monitoring.	Acknowledges cue. **EVALUATOR CUE:** The Shift Manager directs continuing with the procedure prior to contacting the Reactor Analyst.	SAT / UNSAT
21.	IF RPV pressure is GREATER THAN 50 psig, THEN ensure closed BLOWDOWN ORIFICE BYP 12MOV-53.	Observes 12MOV-53 green light on, red light off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
22.	IF RPV pressure is LESS THAN 50 psig, THEN open BLOWDOWN ORIFICE BYP 12MOV-53.	Determines RPV pressure is greater than 50 psig.	SAT / UNSAT
23.	IF RWCU pumps trip during blowdown operation to the condenser, THEN perform the following...	Acknowledges step.	SAT / UNSAT
24.	IF initiating a blowdown following a RWCU pump trip and manual system isolation, THEN perform gravity blowdown to WCT starting at Step G.5.9...	Determines blowdown flow will be to the Main Condenser, not the WCT, per initiating cue.	SAT / UNSAT
25.	IF blowdown is to be routed to the Main Condenser, THEN perform the following: Ensure closed BLOWDOWN TO RADW 12MOV-57.	Observes 12MOV-57 green light on, red light off.	SAT / UNSAT
*26.	Open BLOWDOWN TO MAIN CNDSR 12MOV-56.	Opens 12MOV-56 by rotating control switch clockwise to OPEN.	**CRITICAL STEP** SAT / UNSAT
27.	IF blowdown is to be routed to the Waste Collector Tank, THEN perform the following...	Determines blowdown flow will be to the Main Condenser, not the WCT, per initiating cue.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
28.	Establish blowdown flow as follows: IF gravity blowdown will be used, THEN perform the following: Ensure closed 12RWC-63 (RWCU return line manual isol valve).	Directs operator to ensure closed 12RWC-63 or determines it is closed from earlier cue. **EVALUATOR CUE:** If asked, report that 12RWC-63 is closed.	SAT / UNSAT
*29.	Throttle open FILTER DEMIN BYP 12MOV-74 until red open light comes on (dual position indication).	Throttles open 12MOV-74 by rotating control switch clockwise to OPEN.	**CRITICAL STEP** SAT / UNSAT
*30.	Adjust CLN UP BLOWDOWN FLOW CNTRL 12FCV-55 until desired blowdown flow rate is established.	Throttles open 12FCV-55 by rotating potentiometer clockwise.	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: PCIS Group 2 isolation is reset. RWCU gravity blowdown flow to the Main Condenser is established.

HANDOUT

- Both Recirculation pumps have tripped.
- A Reactor scram has been inserted.
- Reactor water level lowered to 140 inches.
- Reactor water level has been recovered above 177 inches.
- Other operators have completed isolation verifications per AOP-15 Attachments 1 & 2.

Reset the Group 2 isolation per AOP-15 section G.1. Then, restore RWCU per OP-28 section G.4. Establish gravity blowdown flow to the Main Condenser.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 H	TASK TITLE:	Perform Rod Worth Minimizer On-Line Diagnostic Test
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 201006 A4.02 (2.9/2.9)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 H	TASK TITLE:	Perform Rod Worth Minimizer On-Line Diagnostic Test
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____

Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____

Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 14-2 H	TASK TITLE:	Perform Rod Worth Minimizer On-Line Diagnostic Test
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-20A, Rod Worth Minimizer Functional Test

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Plant in cold shutdown condition (IC-70).

B. Ensure the Rod Worth Minimizer is initialized.

C. Insert malfunction RW01.

D. Bypass the Rod Worth Minimizer

E. Delete malfunction RW01.

F. Prepare a copy of ST-20A marked up to step 8.2.

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. The plant is in cold shutdown.

B. Preparations are underway for a Reactor startup.

C. ST-20A, Rod Worth Minimizer Functional Test, is in progress.

D. This is the first time initializing the Rod Worth Minimizer below the Low Power Alarm Point.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Perform the Rod Worth Minimizer on-line diagnostic test per ST-20A section 8.2."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of ST-20A.	Obtains a controlled copy of ST-20A from evaluator. Refers to section 8.2. **EVALUATOR:** Provide a working copy of ST-20A.	SAT / UNSAT
*2.	Ensure NORMAL BYPASS keylock switch is in NORMAL.	Rotates NORMAL BYPASS keylock switch clockwise to NORMAL.	**CRITICAL STEP** SAT / UNSAT
3.	Verify MANUAL BYPASS light is off.	Observes MANUAL BYPASS light is off.	SAT / UNSAT
4.	Perform Steps 8.2.4 through 8.2.5A without delay.	Acknowledges step.	SAT / UNSAT
*5.	Initialize RWM as follows: Depress and hold SYSTEM INITIALIZE pushbutton.	Depresses SYSTEM INITIALIZE PUSHBUTTON. **EVALUATOR NOTE:** This pushbutton is only required to be held long enough to obtain successful system initialization for purposes of the critical step.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
6.	Verify SYSTEM INITIALIZE light is on.	Observes SYSTEM INITIALIZE light is on.	SAT / UNSAT
7.	IF RWM operator panel AUTO light is on, OR first time initializing RWM below Low Power Alarm Point, RWM operator panel AUTO light Off, THEN verify "RWM OPERABLE ON" prints out on alarm typer.	Acknowledges cue. **EVALUATOR CUE:** If asked, "RWM OPERABLE ON" has printed out on the alarm typer.	SAT / UNSAT
*8.	Release SYSTEM INITIALIZE pushbutton.	Releases SYSTEM INITIALIZE pushbutton.	**CRITICAL STEP** SAT / UNSAT
9.	Verify SYSTEM INITIALIZE light is off.	Observes SYSTEM INITIALIZE light is off.	SAT / UNSAT
*10.	IF INOP/RESET light is on, THEN perform the following: • Depress INOP/RESET pushbutton.	Depresses INOP/RESET pushbutton	**CRITICAL STEP** SAT / UNSAT
11.	• Verify all associated lights go off.	Observes INOP/RESET light is off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
12.	IF AUTO light on RWM operator panel is off THEN Perform on-line diagnostic test as follows:	Observes AUTO light is off on RWM operator panel.	SAT / UNSAT
*13.	Depress SYSTEM DIAGNOSTIC pushbutton to start diagnostic routine.	Depresses SYSTEM DIAGNOSTIC pushbutton.	**CRITICAL STEP** SAT / UNSAT
14.	Verify WITHDRAW BLOCK and INSERT BLOCK lights go on and off sequentially at least five times.	Observes WITHDRAW BLOCK and INSERT BLOCK lights go on and off sequentially multiple times.	SAT / UNSAT
*15.	Depress SYSTEM DIAGNOSTIC pushbutton to stop diagnostic routine.	Depresses SYSTEM DIAGNOSTIC pushbutton.	**CRITICAL STEP** SAT / UNSAT
	EVALUATOR: Terminate the task at this point.		

Task Standard: The Rod Worth Minimizer is un-bypassed, initialized, and the system diagnostic test is performed.

HANDOUT

- The plant is in cold shutdown.
- Preparations are underway for a Reactor startup.
- ST-20A, Rod Worth Minimizer Functional Test, is in progress.
- This is the first time initializing the Rod Worth Minimizer below the Low Power Alarm Point.

Perform the Rod Worth Minimizer on-line diagnostic test per ST-20A section 8.2.

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	14-2 NRC I	TASK TITLE:	Vent Torus to Lower Primary Containment Pressure
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 295010 AA1.05 (3.1/3.4)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

CANDIDATE NAME: ________________________________

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

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

CANDIDATE REVIEW:

____
SIGNATURE

REVIEWED BY: ________________________ DOC. COMPLETE: ____________________
PROGRAM ADMINISTER
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ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	14-2 NRC I	TASK TITLE:	Vent Torus to Lower Primary Containment Pressure
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update _____ By: _____
Date Int

Previous Revision Date:

ENTERGY NUCLEAR NORTHEAST
JOB PERFORMANCE MEASURE

S/RO	14-2 NRC I	TASK TITLE:	Vent Torus to Lower Primary Containment Pressure
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. EP-6, POST ACCIDENT CONTAINMENT VENTING AND GAS CONTROL

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Current copy of EP-6 including Attachment 1.

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 <u>not</u> 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. Conditions have occurred which require venting the containment.

B. The EOPs have been entered.

C. Action to preclude the failure of containment must be completed.

D. One train of SGT is in service. The other train of SGT is secured.

E. Containment purge is NOT in progress.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Vent the Torus using EP-6, Section 5.7 "Venting Containment". Start at step 5.7.6."

NOTE: Unless otherwise noted, all controls are located on Panel 27PCP in the Relay Room.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of procedure EP-6.	Obtains a controlled copy of procedure and proceeds to the PCP panel in the Relay Room. **EVALUATOR**: A controlled copy of the procedure is available at the PCP panel. Evaluator to provide working copy.	SAT / UNSAT
2.	Reviews prerequisites, precautions and special instructions associated with the procedure.	Reviews applicable portions of procedure.	SAT / UNSAT
3.	Selects section 5.7, Venting Containment.	Selects the correct section of the procedure to be performed.	SAT / UNSAT
4.	**NOTE:** Steps 5.7.6 and 5.7.7 may be performed and repeated in any order to alternate between torus and drywell venting. Torus venting is preferred.	Reviews Note and selects step 5.7.6 to perform as directed.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	**(Step 5.7.6)** **IF** Torus will be vented **THEN** perform the following: • Verify torus pressure is **LESS THAN** PCPL • Verify primary containment water level is LESS THAN 29.5 feet. • While venting torus, frequently monitor torus pressure and primary containment water level. • **IF** primary containment water level reaches 29.5 feet while venting the torus, **THEN** vent drywell per Step 5.7.7.	Verifies Torus pressure is less than PCPL and Torus level is less than 29.5 ft. **EVALUATOR CUE:** When candidate locates indication of pressure and level, inform the candidate that Torus Pressure is 50 psig and Primary Containment Water Level is 29.0 ft.	SAT / UNSAT
*	**(Step 5.7.6.D)** • Open TORUS EXH INNER BYP VLV 27MOV-117.	Candidate places TORUS EXH INNER BYP VLV 27MOV-117 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
*	**(Step 5.7.6.E)** • Open TORUS EXH OUTER BYP VLV 27MOV-123.	Candidate places TORUS EXH OUTER BYP VLV 27MOV-123 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5. cont.	**(Step 5.7.6.F)** • Ensure closed the following valves: o DW EXH OUTER BYP VLV 27MOV-113. o DW EXH INNER BYPASS VLV 27MOV-122. o DW EXH INNER ISOL VLV 27AOV-113. o DW EXH OUTER ISOL VLV 27AOV-114.	For each valve, candidate locates its red/green position lights and indicates it should be closed. **EVALUATOR CUE:** When candidate inquires about light status, inform the candidate the green light is on, red light is off. **EVALUATOR CUE:** After 27MOV-117 & 123 are open, inform the candidate that the control room has called to inform the candidate that **Primary Containment Water Level is 30 ft.**	SAT / UNSAT
6.	**(Step 5.7.6.C)** **IF** primary containment water level reaches 29.5 feet while venting the torus, **THEN** vent drywell per Step 5.7.7.	Candidate refers to section 5.7.7 **EVALUATOR CUE:** If candidate wants direction from the control room, inform the candidate that for the purposes of this JPM, no further guidance can be given.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	**(Step 5.7.7)** **IF** drywell will be vented, **THEN** perform the following: • Verify torus pressure is **BELOW** PCPL	Verifies Torus pressure is less than PCPL. **EVALUATOR CUE:** When candidate locates indication of pressure and level, inform the candidate that Torus Pressure is 50 psig and Primary Containment Water Level is 30.0 ft	SAT / UNSAT
*	**(Step 5.7.7.B)** • Open DW EXH OUTER BYP VLV 27MOV-113	Candidate places DW EXH OUTER BYP VLV 27MOV-113 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
*	**(Step 5.7.7.C)** • Open DW EXH INNER BYPASS VLV 27MOV-122.	Candidate places DW EXH INNER BYPASS VLV 27MOV-122 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7 cont.	**(Step 5.7.7.D)** • Ensure closed the following valves:		
*	o TORUS EXH INNER BYP VLV 27MOV-117	Candidate places TORUS EXH INNER BYP VLV 27MOV-117 control switch to the CLOSE position. **EVALUATOR CUE:** When candidate indicates placing the control switch to close, inform the candidate that the green light is on, red light is off.	**CRITICAL STEP** SAT / UNSAT
*	o TORUS EXH OUTER BYP VLV 27MOV-123	Candidate places TORUS EXH OUTER BYP VLV 27MOV-123 control switch to the CLOSE position. **EVALUATOR CUE:** When candidate indicates placing the control switch to close, inform the candidate that the green light is on, red light is off.	**CRITICAL STEP** SAT / UNSAT
	o TORUS EXH INNER ISOL VLV 27AOV-117 o TORUS EXH OUTER ISOL VLV 27AOV-118	For each valve, candidate locates its red/green position lights and indicates it should be closed. **EVALUATOR CUE:** When candidate inquires about light status, inform the candidate the green light is on, red light is off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	**(Step 5.7.7.E)** • **IF** it becomes necessary to raise vent rate, **AND** torus pressure is **LESS THAN** PCPL, **THEN** attempt to open the following valves: o DW EXH INNER ISOL VLV 27AOV-113 o DW EXH OUTER ISOL VLV 27AOV-114	Contacts control room and requests direction on vent rate. **EVALUATOR CUE:** When candidate requests direction for vent rate, respond that current rate of pressure reduction is acceptable.	SAT / UNSAT
9.	**(Step 5.7.7.F)** • **IF** containment purge is not in progress, **THEN** cycle one or more of the following valves as necessary to control drywell pressure. Verify torus pressure is **LESS THAN** PCPL before opening any valve: o DW EXH OUTER BYP VLV 27MOV-113 o DW EXH INNER BYPASS VLV 27MOV-122 o DW EXH INNER ISOL VLV 27AOV-113 o DW EXH OUTER ISOL VLV 27AOV-114	Contacts the control room on the status of containment purge. **EVALUATOR CUE:** When candidate inquires as to the status of containment purge, inform the candidate that it is NOT in progress.	SAT / UNSAT

EVALUATOR: Terminate the JPM at this point.

HANDOUT

- Conditions have occurred which require venting the containment.
- The EOPs have been entered.
- Action to preclude the failure of containment must be completed.
- One train of SGT is in service. The other train of SGT is secured.
- Containment purge is NOT in progress.

Vent the Torus using EP-6, Section 5.7 "Venting Containment". Start at step 5.7.6.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

S/RO	NRC 14-2 J	TASK TITLE:	Line-up SLC Test Tank for Injection
APPL. TO	JPM NUMBER		

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 295031 EA1.08 (3.8/3.9)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ________________________________

JPM Completion ☒ Simulated ☐ Performed

Location: ☒ Plant ☐ Simulator

DATE PERFORMED: ____________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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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	NRC 14-2 J	TASK TITLE:	Line-up SLC Test Tank for Injection
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO	NRC 14-2 J	TASK TITLE:	Line-up SLC Test Tank for Injection
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EP-8, Alternate Injection Systems

III. TOOLS AND EQUIPMENT

A. Flashlight.

IV. SET UP REQUIREMENTS

A. Obtain Shift Managers/Control Room Supervisors permission prior to performing this task.

B. Obtain a controlled copy of EP-8 prior to performing this task.

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 <u>not</u> actually performed.

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

VI. TASK CONDITIONS

A. Operation of Alternate Injection Systems is required due to a LOCA.

B. The SLC system is to be utilized as an injection source.

C. The SLC system is to be aligned to use the test tank with the Demineralized Water System and the Fire System as the source of injection water supply.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Align the SLC test tank for injection into the RPV using both the Demineralized Water and Fire Protection Systems as water sources per EP-8 Section 5.12."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtains a controlled copy of the procedure EP-8 and selects section 5.12.	The candidate determines where to obtain a controlled copy of EP-8. (Control Room, Merlin, EOP cabinet) **EVALUATOR**: Provide candidate a current copy of EP-8 section 5.12.	SAT / UNSAT
2.	Proceeds to Reactor Building 326' elevation to the SLC Skid.	Proceeds to the Reactor Building 326' elevation to the SLC Skid.	SAT / UNSAT
*3.	**(Step 5.12.1.A)** Close 11SLC-11 (SLC tank TK-1 outlet isol valve).	Simulates unlocking 11SLC-11. **EVALUATOR CUE:** The indicated valve is unlocked. Simulates closing 11SLC-11 by rotating valve operator clockwise until motion stops. **EVALUATOR CUE:** The indicated valve operator has rotated in the indicated direction and come to a stop.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	**(Step 5.12.1.B)** Open 11SLC-41 (SLC test tank TK-3 outlet isol valve).	Simulates unlocking 11SLC-41. **EVALUATOR CUE:** The indicated valve is unlocked. Simulates opening 11SLC-41 by rotating valve operator counterclockwise. **EVALUATOR CUE:** The indicated valve operator has rotated in the indicated direction.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*5.	**(Step 5.12.1.C)** Station an operator at 11TK-3 (standby liquid control test tank) to establish and maintain 11TK-3 at least 1/2 full using one or both of the following sources of makeup water: • Demin-water: By opening 11SLC-29 (SLC test tank TK-3 demin water addition isol valve)	Simulates opening 11SLC-29 by rotating valve operator counterclockwise. **EVALUTOR CUE:** If the candidate attempts to station another operator for this step, direct them to perform the required manipulation(s) themselves. **EVALUATOR CUE**: The indicated valve operator has rotated in the indicated direction. If lineup has been performed correctly, report that water is flowing into the test tank and the tank is filling slowly.	**CRITICAL STEP** SAT / UNSAT
	• Fire system water: Using a fire hose	Simulates uncoiling fire hose (located west of SLC tank) and placing nozzle into the test tank. **EVALUATOR CUES:** The hose is uncoiled. The hose nozzle is in the test tank. Simulates opening hose rack isolation valve and using the bail handle to open the nozzle. **EVALUATOR CUES:** Water is flowing from the hose nozzle. The test tank is filling more rapidly.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*6.	**(Step 5.12.1.D)** WHEN 11TK-3 is at least 1/2 full, place SLC pump switch in START SYS-A OR START SYS-B.	Observes test tank water level. **EVALUATOR CUE**: After the fire hose is filling the tank, inform the candidate that the tank is more than ½ full. Simulates contacting the Control Room to start an SLC pump. **EVALUATOR CUE**: The Control Room has started SLC pump A.	**CRITICAL STEP** SAT / UNSAT
7.	Monitors SLC test tank water level while injecting.	Continues to observe SLC test tank water level.	SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: An SLC pump is running with suction from the SLC test tank. The SLC test tank is aligned for injection of both Demineralized water and Fire water to the RPV.

HANDOUT

- **Operation of Alternate Injection Systems is required due to a LOCA.**
- **The SLC system is to be utilized as an injection source.**
- **The SLC system is to be aligned to use the test tank with the Demineralized Water System and the Fire System as the sources of injection water supply.**

Align the SLC test tank for injection into the RPV using both the Demineralized Water and Fire Protection Systems as water sources per EP-8 Section 5.12.

ENTERGY NUCLEAR NORTHEAST

JOB PERFORMANCE MEASURE

S/RO	14-2 NRC K	TASK TITLE: Electrically Disarm a CRD HCU
APPL. TO	JPM NUMBER	

REV: ______ DATE: __________ NRC K/A SYSTEM NUMBER: 201003 A2.02 (3.7/3.8)

JAF TASK NUMBER: ____________________ JAF QUAL STANDARD NUMBER: ______________

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: [signature] OPERATIONS REVIEW: [signature]

APPROVED: [signature]

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CANDIDATE NAME: ______________________________

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	14-2 NRC K	TASK TITLE:	Electrically Disarm a CRD HCU
APPL. TO	JPM NUMBER		

Current Update: _____ By: _____
Date Int

Outstanding Items

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

Comments:

Current Update: _____ By: _____
Date Int.

Previous Revision Date:

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	14-2 NRC K	TASK TITLE:	Electrically Disarm a CRD HCU
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-25, Control Rod Drive Hydraulic System

III. TOOLS AND EQUIPMENT

A. Flashlight

IV. SET UP REQUIREMENTS

A. Provide a working copy of OP-25.

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, place keeping and three-point communication.

VI. TASK CONDITIONS

A. The plant is operating at 100% power.

B. Control rod 22-19 was fully withdrawn, but would not couple.

C. The rod has been fully inserted and its HCU has been valved out.

D. The rod must be electrically disarmed.

* - CRITICAL STEP

VII. INITIATING CUE

Inform the candidate, "Electrically disarm control rod 22-19 per OP-25 Section G.21."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-25.	The candidate determines where to obtain a controlled copy of OP-25. (Control Room, Merlin) **EVALUATOR:** Provide candidate a current copy of OP-25.	SAT / UNSAT
2.	Review precautions and selects correct section.	Reviews precautions and selects section G.21.	SAT / UNSAT
3.	**(Step G.21.1)** Notify Control Room that CRD 22-19 will be electrically disarmed.	Notifies Control Room that CRD 22-19 will be electrically disarmed. **EVALUATOR CUE:** Acknowledge communication.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*4.	**(Step G.21.2)** Unplug amphenol connector from each of the following solenoid operated valves at HCU 22-19 and control per AP-12.06. • 03SOV-120(*) (withdraw settle solenoid operated valve)	Simulates unplugging amphenol connector from 03SOV-120 at HCU 22-19. **EVALUATOR CUE:** The indicated connector has been unplugged.	**CRITICAL STEP** SAT / UNSAT
*5.	**(Step G.21.2)** • 03SOV-121(*) (insert exhaust water solenoid operated valve)	Simulates unplugging amphenol connector from 03SOV-121 at HCU 22-19. **EVALUATOR CUE:** The indicated connector has been unplugged.	**CRITICAL STEP** SAT / UNSAT
*6.	**(Step G.21.2)** • 03SOV-122(*) (withdraw drive water solenoid operated valve)	Simulates unplugging amphenol connector from 03SOV-122 at HCU 22-19. **EVALUATOR CUE:** The indicated connector has been unplugged.	**CRITICAL STEP** SAT / UNSAT
*7.	**(Step G.21.2)** • 03SOV-123(*) (insert drive water solenoid operated valve)	Simulates unplugging amphenol connector from 03SOV-123 at HCU 22-19. **EVALUATOR CUE:** The indicated connector has been unplugged.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	**(Step G.21.3)** Notify Control Room that CRD 22-19 has been electrically disarmed.	Notifies Control Room that CRD 22-19 has been electrically disarmed. **EVALUATOR CUE:** Acknowledge communication.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: Control rod 22-19 is electrically disarmed.

HANDOUT

- The plant is operating at 100% power.
- Control rod 22-19 was fully withdrawn, but would not couple.
- The rod has been fully inserted and its HCU has been valved out.
- The rod must be electrically disarmed.

Electrically disarm control rod 22-19 per OP-25 Section G.21.

Facility: James A. Fitzpatrick Scenario No.: NRC-1 Op-Test No.: 14-2

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 90% power. RCIC is out of service for maintenance. Torus cooling is in service on RHR loop A.

Turnover: Secure Torus cooling per OP-13B sections F.1 and F.7.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Shutdown Torus Cooling OP-13B
2	SW04:A	C – SRO	RHRSW Pump A Trip ARP 09-3-1-25, Technical Specifications
3	NM14:B	I – ATC, SRO	APRM B Fails Upscale OP-16, ARP 09-5-1-4
4	HP05	I – BOP, SRO	HPCI Inadvertent Initiation AOP-77, AOP-32, Technical Specifications
5	FW05:A FW01:A	C – BOP R – ATC, SRO	Feedwater Pump A High Vibration and Pump Trip ARP 09-6-4-11, AOP-41
6	RR15:A MS02:A	M – All	Loss of Coolant Accident EOP-2, EOP-4
7	FW01:B HP02	C – All	Feedwater Pump B Trip, HPCI Trip EOP-2
8	ED43:A ED43:B	C – All	Loss of Offsite Power AOP-72

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: **James A. Fitzpatrick** Scenario No.: **NRC-1**		Op-Test No.: **14-2**
1. Total malfunctions (5-8) **Events 2, 3, 4, 5, 6, 7, 8**	7	
2. Malfunctions after EOP entry (1-2) **Events 7 & 8**	2	
3. Abnormal events (2-4) **Events 3, 4, 5**	3	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **EOP-2, EOP-4**	2	
6. EOP contingencies requiring substantive actions (0-2) **EOP-2 Alt Level Leg, EOP-2 Emergency Depress Leg**	2	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: **CT-1: Given a coolant leak inside the Containment, the crew will spray the Drywell, in accordance with EOP-4.** **CT-2: Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain Reactor water level above the Top of Active Fuel (TAF), the crew will initiate actions for an Emergency RPV Depressurization before Reactor water level lowers below -19", in accordance with EOP-2.**		

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 14-2 NRC EXAMINATION SCENARIO 1

TITLE: LOI 14-2 NRC EXAMINATION SCENARIO 1

SCENARIO NUMBER: NRC 1

PATH: STAND ALONE

Validation: _____ **Training:** _____ **Operations:** _____

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED
5/1/14	LOI 14-2 NRC Exam	New Scenario	T. Hooper	

A. **TITLE:** LOI 14-2 NRC EXAMINATION SCENARIO 1

B. **SCENARIO SETUP:**

1. IC-61

2. Special Instructions:

   a. The Plant is operating at approximately 90% power.
   b. RCIC is out of service for maintenance.
   c. Torus cooling is in service on RHR loop A.

3. Preset Conditions:

   a. Preset, M:RC03, RCIC System Turbine Trip
   b. Trigger 1, M:SW04:A, RHR Service Water Pump A Trip
   c. Trigger 2, NM14:B, APRM Channel B Failure, 100%
   d. Trigger 3, M:HP05, HPCI Inadvertent Initiation
   e. Trigger 16, M:HP02, HPCI Turbine Trip
   f. Trigger 4, M:FW05:A, Rx Feedwtr Pmp A High Vibration
   g. Trigger 17, M:FW01:A, Rx Feedwtr Pmp A Trip
   h. Trigger 5, M:RR15:A, Coolant (A) Leakage Inside Primary Containment, ramp=3 minutes, initial=1.5%, final=5%
   i. Trigger 6, M:FW01:B, Rx Feedwtr Pmp B Trip
   j. Trigger 6, M:ED43:A, LHH Line #3 Fault, delay=4 minutes
   k. Trigger 6, M:ED43:B, NMP Line #4 Fault, delay=5 minutes
   l. Trigger 6, M:MS02:A, (MSL A) Stm Leakage Inside Prim, ramp=3 minutes, 50%
   m. Preset, O:RC ZAO13PI96, Pump Suction Pressure Indi, 0%
   n. Preset, O:RC ZAO13PI94, Turbine Steam Inlet Pressu, 0%
   o. Preset, O:RC ZLO1315(1), (Mimic) Inboard Stm Supply Is, Off
   p. Preset, O:RC ZLO1316(1), (Mimic) Outbd Stm Supply Isol, Off
   q. Preset, O:RC ZLO1339(1), (Mimic) Pump Suct From Supp C, Off
   r. Preset, O:RC ZLO1341(1), (Mimic) Pump Suct From Supp C, Off
   s. Preset, O:RC ZLO13AS1(1), Inboard Steam Supply Isol, Off
   t. Preset, O:RC ZLO13AS10(1), Pump Suction From Supp C, Off
   u. Preset, O:RC ZLO13AS2(1), Outboard Steam Supply Iso, Off
   v. Preset, O:RC ZLO13AS22(1), Pmp Suction From Supp C, Off
   w. Preset, O:RC ZLO13AS4(1), Pmp Suction From Cond Sto, Off
   x. Preset, O:AN941:34, RCIC Exh Press Hi (25 psig), Off
   y. Event Trigger 1, Action: zlo1034a(2)==0, Command: None
   z. Event Trigger 6, Action: zdi5as1(1)==1, Command: imf rr15:a 22 20:00 5
   aa. Event Trigger 16, Action: zdi23as19==1, Command: None
   bb. Event Trigger 17, Action: fwvrfpt(1)>8, Command: None

4. Consumable Forms and Procedures:
   - AOP-1, AOP-8, AOP-41, AOP-72, AOP-77

C. SCENARIO SUMMARY:

The scenario will begin at approximately 90% power with RCIC out of service for maintenance and Torus cooling in service on RHR loop A. The crew will begin the shift by securing the Torus cooling lineup.

While the crew is securing Torus cooling, RHRSW pump A will trip. The SRO will determine the Technical Specification impact. The crew will continue with the remaining steps to secure Torus cooling

APRM B will fail upscale and cause a half scram on RPS B. The SRO will determine that Technical Specifications are satisfied with APRM B bypassed. The crew will bypass APRM B and reset the half scram.

HPCI will inadvertently start. The SRO will enter AOP-77 and direct securing HPCI. The crew will secure HPCI and one train of Standby Gas Treatment. The SRO will determine the Technical Specification impact. With RCIC out of service, Technical Specifications will require a plant shutdown.

Feedwater pump A will develop a high vibration. The crew may lower Reactor power in anticipation of tripping the pump. When the vibration exceeds 6 mils, the crew will trip the pump. If the crew does not trip the pump by 8 mils, the pump will spuriously trip. A Recirculation runback is likely to occur following the pump trip. The crew will respond to stabilize the plant within the capacity of a single Feedwater pump.

A coolant leak will develop in the Drywell. The crew will scram the Reactor in anticipation of an automatic scram. Following the scram, Feedwater pump B will trip. With no remaining high pressure Feedwater, the crew may attempt to restore HPCI to service, but HPCI will trip. The crew will attempt to maintain Reactor water level with CRD and SLC, and may lower Reactor pressure to inject with Condensate Booster pumps.

Offsite power lines 3 and 4 will sequentially trip. The loss of offsite power will make all Condensate pumps unavailable. Only low pressure ECCS pumps will be available for high capacity injection to the Reactor. Additionally, all Circulating Water pumps will trip, requiring the crew to close MSIVs and control Reactor pressure using SRVs.

The coolant leak will continue to get worse. The crew will place Torus spray in service. When Torus pressure exceeds 15 psig, the crew will also place Drywell spray in service. Drywell spray will lower Drywell pressure such that the Pressure Suppression Pressure curve is not challenged. The coolant leak rate will exceed the capacity of available high pressure injection. Reactor water level will lower to the top of active fuel. The crew will execute an Emergency RPV Depressurization and then control low pressure injection systems to restore Reactor water level.

The scenario will be terminated when all control rods are inserted, the Emergency RPV Depressurization is in progress, and Reactor water level is controlled above 0".

Shift Turnover
The Plant is operating at approximately 90% power during a power reduction. RCIC is out of service for maintenance. Torus cooling is in service on RHR loop A. When you take the shift, secure Torus cooling per OP-13B sections F.1 and F.7

Critical Tasks/Standards
Critical Task #1: Given a coolant leak inside the Containment, the crew will spray the Drywell, in accordance with EOP-4. Critical Task #2: Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain Reactor water level above the Top of Active Fuel (TAF), the crew will initiate actions for an Emergency RPV Depressurization before Reactor water level lowers below -19", in accordance with EOP-2.

EVENT NO.	EVENT SEQUENCE	
1.	Shutdown Torus Cooling	(Normal: BOP, SRO)
2.	RHRSW Pump A Trip	(Component: SRO) (Tech Spec: SRO)
3.	APRM B Fails Upscale	(Component: ATC, SRO)
4.	HPCI Inadvertent Initiation	(Instrument: BOP, SRO) (Tech Spec: SRO)
5.	Feedwater Pump A High Vibration and Pump Trip	(Component: BOP) (Reactivity: ATC, SRO)
6.	Coolant Leak in Drywell	(Major: All)
7.	Feedwater Pump B Trip, HPCI Trip	(Component: All)
8.	Loss of Offsite Power	(Component: All)

D. TERMINATION CUES:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Events 1 & 2 Secure Torus Cooling, RHRSW Pump A Trip	SRO	• Perform Crew Brief • Direct BOP to secure Torus cooling per OP-13B sections F.1 and F.7. • Acknowledge trip of RHRSW pump A • Determine Technical Specification 3.7.1 Condition A must be entered (restore RHRSW pump A to operable within 30 days)	SAT / UNSAT / NA
Note: Ensure Trigger 1 automatically goes active and trips RHRSW pump A when 10MOV-34A red light extinguishes.	BOP	• Close RHR TEST & TORUS CLG 10MOV-34A • Recognize / report trip of RHRSW pump A • IF RHR Loop A flow is LESS THAN 1500 gpm, THEN ensure open MIN FLOW VLV 10MOV-16A • IF RHR Loop A operation is not required, THEN shut down RHR Loop A per Subsection F.7	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: If dispatched to investigate trip of RHRSW pump A, wait 2 minutes, then report that the pump breaker tripped on overcurrent, but there is nothing abnormal at the pump.	BOP cont.	• Ensure one of the RHR Loop A keep-full systems is in service as follows: o RHR KEEP-FULL PMP 10P-2A is running, OR o 10RHR-274 (RHR loop A containment spray keep-full cond xfer connection valve) is throttled open • Ensure closed the following valves: o RHR TEST & TORUS CLG 10MOV-34A o TORUS SPRAY INBD VLV 10MOV-38A o DW SPRAY INBD VLV 10MOV-31A • Ensure the following RHR pumps are stopped: o RHR PMP 10P-3A o RHR PMP 10P-3C • Ensure closed the following valves: o RHR TEST TORUS CLG & SPRAY 10MOV-39A o DW SPRAY OUTBD VLV 10MOV-26A • Ensure open MIN FLOW VLV 10MOV-16A • Ensure open HX A BYP VLV 10MOV-66A • IF RHRSW Loop A operation is not required, THEN shut down RHRSW Loop A as follows: o Close RHRSW DISCH VLV FROM HX A 10MOV-89A o Ensure the following RHRSW pumps are stopped: o RHRSW PMP 10P-1A o RHRSW PMP 10P-1C	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 3 **On Lead Examiner Cue: ACTIVATE TRIGGER 2** APRM B Fails Upscale	ATC	• Recognize / report multiple annunciators, including: o 09-5-2-44, APRM UPSCALE o 09-5-2-55, APRM TRIP SYS B INOP OR UPSCALE TRIP • Recognize / report APRM B indicates upscale • Recognize / report half scram	SAT / UNSAT / NA
	SRO	• Acknowledge report • Direct ARP response • Determine Technical Specification Table 3.3.1.1-1 Functions 2b, c, and d are met with APRM B out of service • Determines TRM Table T3.3.B-1 Functions 1a, b, and c are met with APRM B out of service • Direct bypassing APRM B per OP-16 • Direct reset of half scram	SAT / UNSAT / NA
	ATC	• Bypass APRM B per OP-16 Section E.16: o Place APRM BYP switch in B o Verify APRM B is bypassed using one or both of the following: ▪ APRM B BYPASS indicating light is on ▪ APRM B EPIC alarm indicates bypassed o Verify the other two APRM channels associated with the same APRM BYP switch are in service using one or both of the following: ▪ APRM BYPASS indicating lights are off for the other two APRMs ▪ No EPIC bypassed alarms for the other two APRMs	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC cont.	• Reset half scram per ARP: o Place RX SCRAM RESET switch to GROUP 2 & 3, then to GROUP 1 & 4, spring return to NORM o Verify RPS B SCRAM GROUPS 1, 2, 3, and 4 lights are on	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 4 **On Lead Examiner Cue: ACTIVATE TRIGGER 3** HPCI Inadvertent Initiation	BOP / ATC	• Recognize / report spurious HPCI initiation • Recognize / report Reactor power rise, if applicable • Recognize / report Reactor water level rise, if applicable	SAT / UNSAT / NA
	SRO	• Acknowledge report • Enter AOP-77 (Inadvertent Initiation of ECCS or RCIC) • Verify HPCI injection not required • Direct trip of HPCI • May enter AOP-32 (Unexplained/Unanticipated Reactivity Change) • Declare HPCI inoperable but available • Determine Technical Specification 3.5.1 Condition C is NOT met with RCIC inoperable • Determine Technical Specification 3.5.1 Condition G requires being in Mode 3 within 12 hours and reducing Reactor pressure to ≤ 150 psig within 36 hours • Declare the secured train of Standby Gas Treatment inoperable • Determine Technical Specification 3.6.4.3 Condition A requires restoring Standby Gas Treatment to operable within 7 days	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: If dispatched to investigate HPCI, wait three minutes, then report there is no obvious reason why HPCI started and there is no observable damage to the system.	BOP	• Execute AOP-77 • Observe Reactor water level and Drywell pressure indications to verify HPCI injection not required • Trip HPCI • AFTER turbine comes to a complete stop, place AUX OIL PMP 23P-150 control switch in PULL-TO-LOCK • Secure one train of Standby Gas • For the running Standby Gas train, open 02-125MOV-11(12) • May execute AOP-32 (Unexplained/Unanticipated Reactivity Change) o Determine HPCI initiation was only cause of reactivity change	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 5 **On Lead Examiner Cue: ACTIVATE TRIGGER 4** Feedwater Pump A High Vibration and Pump Trip	BOP / ATC	• Recognize / report EPIC alarms • Recognize / report annunciator 09-6-4-11, RFPT A VIB HI • Recognize / report rising Feedwater pump A vibrations	SAT / UNSAT / NA
Note: The ARP directs tripping Feedwater pump A if vibration reaches 6 mils. There is no automatic trip on vibration, however the pump will spuriously trip in this scenario if vibration reaches ~8 mils.	SRO	• Acknowledge report • Direct ARP response • May direct emergency power reduction with Recirculation flow and/or CRAM rods • Direct trip of Feedwater pump A • Enter AOP-41 (Feedwater Malfunction) • May enter AOP-8 (Unexpected Change in Core Flow)	SAT / UNSAT / NA

Note:
Recirculation pumps will likely runback to the 44% limiter due to only one Feedwater pump operating and Reactor water level lowering to 196.5".
 	
Role Play:
If dispatched to investigate, wait 2 minutes, then report that Feedwater pump A is vibrating, but there is no obvious cause.
	BOP	• Execute ARP 09-6-4-11
		  o Monitor vibration level and trend
		  o When vibration approaches/exceeds 6 mils, trip Feedwater pump A
		• Coordinate with ATC to lower Reactor power with Recirculation flow, as required / directed
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: Following the trip of Feedwater pump A, Reactor power will likely stabilize between 65-70% power. The crew may decide to lower Reactor power further by inserting CRAM rods, since during a startup the second Feedwater pump is started prior to exceeding 55% power. However, there is no hard requirement to continue the power reduction. **Role Play:** If the crew is not taking action to lower Reactor power by inserting CRAM rods, when crew informs management or Reactor Engineering of event, direct crew to lower Reactor power to 50% using RAP-7.3.16.	ATC	• Coordinate with BOP to lower Reactor power with CRAM rods, as required / directed • Monitor for thermal-hydraulic instabilities (THI)	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Events 6, 7, & 8 **On Lead Examiner Cue:** **ACTIVATE TRIGGER 5** Loss of Coolant Accident, Feedwater Pump B Trip, HPCI Trip, Loss of Offsite Power **Note:** Ensure Trigger 6 automatically goes active when the Reactor scrams to cause the Feedwater pump trip and delayed loss of offsite power. This trigger also re-inserts the coolant leak malfunction and ramps it to a higher value.	BOP / ATC	• Recognize / report degrading Primary Containment conditions (leakage, temperature, pressure) • Recognize / report trip of Feedwater pump B (after scram) • Recognize / report trip of HPCI (if re-start attempted) • Recognize / report loss of Lines 3 and 4 (approximately 4 and 5 minutes after scram, respectively)	SAT / UNSAT / NA
Critical Task #1 **Critical Task #1 Standard:**		**Given a coolant leak inside the Containment, the crew will spray the Drywell, in accordance with EOP-4.** **Drywell spray in service.**	**Pass / Fail**
Critical Task #2 **Critical Task #2 Standard:**		**Given a coolant leak, a loss of high pressure injection systems, and the inability to restore and maintain Reactor water level above the Top of Active Fuel (TAF), the crew will initiate actions for an Emergency RPV Depressurization before Reactor water level lowers below -19", in accordance with EOP-2.** **7 ADS valves open.**	**Pass / Fail**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: A pressure band of 600-800# would allow injection with Condensate Booster pumps, however these will become unavailable due to the eventual loss of offsite power. **Role Play:** When directed to place Control Room, Relay Room, and/or TSC filtered ventilation in service, acknowledge direction.	SRO	• Acknowledge reports • Direct Reactor scram • Enter AOP-1 (Reactor Scram) • Enter EOP-2 (RPV Control) on low Reactor water level, high Drywell pressure, and high Drywell temperature (as they occur) • Enter EOP-4 (Primary Containment Control) on high Drywell pressure and high Drywell temperature (as they occur) • Acknowledge trip of Feedwater pump B • Direct Reactor water level controlled 180-220" using HPCI, Condensate, SLC, and/or CRD • Acknowledge trip of HPCI • Direct Reactor pressure controlled 800-1000# using Turbine Bypass Valves • May direct Reactor depressurization to inject with Condensate • Enter AOP-39 (Loss of Coolant) • Direct Control Room and Relay Room Ventilation isolated per OP-55B Section G within 30 minutes • Direct TSC filtered ventilation started per Section D of OP-59B within 60 minutes • May direct Core Spray and RHR injection prevented per EP-5 • When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 15 psig, direct initiation of Torus Spray	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SRO cont.		SAT / UNSAT / NA
		• Acknowledge loss of Line 3 • Acknowledge loss of Line 4 • Enter AOP-72 (115 KV Grid Loss, Instability, or Degradation)	

Note:
The MSIVs will be closed due to loss of all Circulating Water pumps after the loss of 115 KV.
		• Acknowledge loss of all Condensate pumps and Circulating Water pumps
		• Direct closure of MSIVs
		• Direct Reactor pressure control using SRVs
		• When Torus pressure exceeds 15 psig:
		  o Verify Recirculation pumps tripped
		  o Verify trip of Drywell cooling fans
		  o Direct initiation of Drywell Spray
		• Determine Reactor water level cannot be maintained above 0"
		• Enter Alternate RPV Level Control leg of EOP-2
		• Direct override of ADS
		• Direct CRD maximized and SLC injection, if not done previously	

Note: As Reactor water level lowers, the crew will transition from wide range to fuel zone level indicators. The determination of when to initiate Emergency RPV Depressurization (CT-2) will be made using Fuel Zone level indicators.		• **When Reactor water level reaches 0", enter Emergency RPV Depressurization leg of EOP-2** • Direct opening 7 ADS valves • Direct Reactor water level restored and maintained 180-220" using Core Spray and/or LPCI • As time allows, directs re-start of Drywell spray	**Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Enter AOP-1 • Depress MANUAL SCRAM A and MANUAL SCRAM B pushbuttons • Place RX MODE switch in SHUTDOWN • Fully insert IRMs and SRMs • Observe Reactor power lowering • Ensure closed SDIV vent and drain valves • Ensure Main Turbine is tripped • Verify 4KV loads transfer to reserve power • May begin Reactor depressurization	SAT / UNSAT / NA

	BOP	• Enter AOP-1
		• Attempt to control Reactor water level 180-220" using HPCI, Condensate, SLC, and/or CRD
		• May attempt to manually re-start HPCI:
		  o Ensure open 23MOV-16
		  o Ensure running 23P-140
		  o Ensure open 23MOV-14
		  o If 09-3-3-28 is in alarm, then depress 23A-S17
		  o Ensure running 23P-150
		  o Recognize / report failure of HPCI to start
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP	• Attempt to maintain Reactor water level with SLC and/or CRD • Recognize / report leakage exceeds capacity of SLC and/or CRD • May lower Reactor pressure using Turbine Bypass Valves • May inject using Condensate Booster pumps • Initiate Torus spray: o Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL, spring return to normal o Verify white SPRAY PERM 10A-DS67A(B) light is on o Ensure available RHR pumps in RHR Loop A(B) are running (recognize/report failure to automatically start) o Open RHR TEST TORUS CLG & SPRAY 10MOV-39A(B) o Throttle TORUS SPRAY INBD VLV 10MOV-38A(B) to establish desired torus spray flow rate o WHEN RHR Loop A(B) flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A(B) o Throttle RHR TEST & TORUS CLG 10MOV-34A(B) to divert excess flow to the torus to maintain > 6,500 gpm RHR Loop A(B) flow with one RHR pump operating or > 13,000 gpm RHR Loop A(B) flow with two RHR pumps operating	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP cont.		SAT / UNSAT / NA
		o Establish RHRSW flow and temperature control: o Start one of the RHRSW pumps o Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm o Start the second RHRSW pump if desired o Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm per RHRSW pump o IF drywell or torus sprays are in service, THEN establish 4000 gpm per RHRSW pump o Close HX A(B) BYP VLV 10MOV-66A(B) • Close MSIVs • Control Reactor pressure using SRVs • Ensure Recirc pumps tripped • Ensure Drywell Cooling fans tripped	
Note: 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.		• **Initiate Drywell spray:** o Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL, spring return to normal o Verify white SPRAY PERM 10A-DS67A(B) light is on o Ensure available RHR pumps in RHR Loop A(B) are running o Open DW SPRAY OUTBD VLV 10MOV-26A(B) o Throttle DW SPRAY INBD VLV 10MOV-31A(B) to establish desired drywell spray flow rate	**Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP cont.	• Override ADS: o Place ADS LOGIC OVERRIDE & RESET LOGIC A 2E-S2A in OVERRIDE o Place ADS LOGIC OVERRIDE & RESET LOGIC B 2E-S2B in OVERRIDE o Verify annunciator 09-4-1-27 ADS OVERRIDE SW IN OVERRIDE is in alarm o Verify white ADS LOGIC OVERRIDDEN 2E-DS10 light is on • Maximize CRD, if not done previously • Initiate SLC injection, if not done previously • Verify isolations per AOP-15 • **Open 7 ADS valves** • Restore and maintain Reactor water level 180-220" using available injection systems • Control Core Spray injection: o Throttle 14MOV-12A(B) • Control LPCI injection: o Throttle 10MOV-27A(B) o Secure RHR pumps if needed	SAT / UNSAT / NA **Critical Task #2**

Termination Criteria:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

Shift Turnover
The Plant is operating at approximately 90% power during a power reduction. RCIC is out of service for maintenance. Torus cooling is in service on RHR loop A. When you take the shift, secure Torus cooling per OP-13B sections F.1 and F.7

Facility: James A. Fitzpatrick Scenario No.: NRC-2 Op-Test No.: 14-2

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 99% power. Air Compressor B is out of service for maintenance. Core Spray pump A is ready for full flow testing. Main Generator reactive load is at minimum per Power Control request.

Turnover: Perform Core Spray full flow testing per ST-3PA, starting at step 8.7.6.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Perform Core Spray Full Flow Test ST-3PA
2	Override	C – BOP, SRO	Core Spray Pump Overload ARP 09-3-1-31, Technical Specifications
3	RD06 RD09	C – ATC, SRO	Control Rod Drive Pump Trip, One Control Rod Drive Accumulator Low Pressure AOP-69, ARP-09-5-1-43, Technical Specifications
4	TU04 MC01	R – ATC C – ATC, SRO	Main Turbine Bearing High Vibration; Loss of Main Condenser Vacuum AOP-66, AOP-31, AOP-1
5	RP01AB RP01BB RP09	M – All	Failure of RPS and ARI to Actuate EOP-2, EOP-3
6	SL02 SL01 RR13	C – ATC, SRO	First SLC Squib Valve Fails to Fire, Second SLC Pump Trips, Recirculation Pumps Fail to Automatically Trip EOP-3
7	EG01 TC04	C – BOP, SRO	Main Generator Trip, Two Turbine Bypass Valves Fail Closed EOP-3

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: **James A. Fitzpatrick**	Scenario No.: **NRC-2**	Op-Test No.: **14-2**
1. Total malfunctions (5-8) **Events 2, 3, 4, 5, 6, 7**	6	
2. Malfunctions after EOP entry (1-2) **Events 6 & 7**	2	
3. Abnormal events (2-4) **Events 3 & 4**	2	
4. Major transients (1-2) **Event 5**	1	
5. EOPs entered/requiring substantive actions (1-2) **EOP-2**	1	
6. EOP contingencies requiring substantive actions (0-2) **EOP-3**	1	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: **CT-1: Given a failure to scram with Reactor power above 2.5%, the crew will lower Reactor power by one or more of the following methods, in accordance with EOP-3:** • **Terminating and preventing all RPV injection except SLC, RCIC, and CRD** • **Tripping Recirculation pumps** **CT-2: Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.**		

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 14-2 NRC EXAMINATION SCENARIO 2

TITLE:	**LOI 14-2 NRC EXAMINATION SCENARIO 2**
SCENARIO NUMBER:	**NRC 2**
PATH:	**STAND ALONE**

Validation: _____ **Training:** _____ **Operations:** _____

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED
5/3/12	New	New Scenario	T. Hooper	
5/14/14	LOI 14-2 NRC Exam	Modified for LOI 14-2 NRC Exam	T. Hooper	

A. **TITLE:** LOI 14-2 NRC EXAMINATION SCENARIO 2

B. **SCENARIO SETUP:**

1. IC-62

2. Special Instructions:

   a. The Plant is operating at approximately 99% power.
   b. Air Compressor B is out of service for maintenance.
   c. Ensure Generator reactive load is at minimum per OP-11A.

3. Preset Conditions:

   a. Preset, R:IA15:B, Air Comp 39AC-2B Supply Breaker, Open (will not show in Instructor Station Summary after snap/reset)
   b. Preset, O:AN962:18, Air Compr 39AC-2B Trip, Off
   c. TRIGGER 1, O:CS ZAO14P1A, Core Spray Pump A Current, Ramp=20 seconds, 170
   d. TRIGGER 1, O:AN931:31, Core Spray Pmp 14P-1A Overload, Delay=15 seconds, ON
   e. TRIGGER 2, M:RD06:A, CRD Hydraulic Pump Trip (A)
   f. TRIGGER 2, M:RD09:22:31, Control Rod (22-31) Accumulator, Delay=30 seconds
   g. TRIGGER 3, M:TU04E, Main Turbine High Bearing #5 Vibration, Initial=21%, Final=27%, Ramp=5:00
   h. TRIGGER 3, M:TU04F, Main Turbine High Bearing #6 Vibration, Initial=21%, Final=28%, Ramp=5:00
   i. TRIGGER 4, M:MC01, Main Condenser Air In Leakage, Initial=12%, Final=25%, Ramp=8 minutes
   j. Preset, M:RP01:AB, RPS Automatic Scram Failure B Side Only
   k. Preset, M:RP01:BB, RPS Manual Scram Failure B Side Only
   l. Preset, M:RP09, ARI Fails to Actuate
   m. Preset, M:SL02:A, Standby Liquid Squib Valve Fails
   n. Preset, M:SL02:B, Standby Liquid Squib Valve Fails
   o. Preset, M:RR13:A, ATWS System Fails to Initiate
   p. Preset, M:RR13:B, ATWS System Fails to Initiate
   q. TRIGGER 5, M:EG01, Main Generator Trip
   r. TRIGGER 6, M:TC04:A Turbine Bypass Valve Failure, 0%
   s. TRIGGER 6, M:TC04:B Turbine Bypass Valve Failure, 0%
   t. TRIGGER 20, R:IA07, Scram Air Hdr Man Iso Vlv, CLOSE
   u. TRIGGER 20, M:IA01, Loss of Air Pressure to Scram Air Header, 100%, Ramp=30 seconds
   v. TRIGGER 19, R:RH40:A, Relay 10A-K45A Timer Grayboot, REMOVED
   w. TRIGGER 19, R:RH40:B, Relay 10A-K45B Timer Grayboot, REMOVED
   x. Event Trigger 1, Event: zdi14as4a(2)==1, Command: None
   y. Event Trigger 4, Event: ycx07nmaprmaf<95, Command: None
   z. Event Trigger 5, Event: ycx07nmaprmaf<42, Command: None
   aa. Event Trigger 6, Event: ycx07nmaprmaf<24, Command: None
   bb. Event Trigger 16, Event: csipump(1)>50&&zdi14as5a(1)==1, Command: dor zao14p1a

cc. Event Trigger 16, Event: csipump(1)>50&&zdi14as5a(1)==1, Command: dor an931:31
dd. Event Trigger 21, Event: ycx07nmaprmaf<95, Command: imf tu04:e 14 60
ee. Event Trigger 22, Event: ycx07nmaprmaf<95, Command: imf tu04:f 14 60
ff. Event Trigger 23, Event: ycx07nmaprmaf<85, Command: imf mc01 30 1:00
gg. Event Trigger 24, Event: ycx07nmaprmaf<60, Command: imf mc01 35 1:00
hh. Event Trigger 25, Event: zdi11s1(2)==1, Command: dmf sl02:b
ii. Event Trigger 26, Event: zdi11s1(2)==1, Command: trgr 28
jj. Event Trigger 27, Event: zdi11s1(2)==1, Command: imf sl01:b (30 5)
kk. Event Trigger 28, Event: zdi11s1(1)==1, Command: dmf sl02:a
ll. Event Trigger 29, Event: zdi11s1(1)==1, Command: trgr 25
mm. Event Trigger 30, Event: zdi11s1(1)==1, Command: imf sl01:a (27 5)

4. Consumable Forms and Procedures:
   - AOP-1, AOP-31, AOP-66, AOP-69, ST-3PA

C. SCENARIO SUMMARY:

The scenario will begin with the plant operating at approximately 99% power. The crew will begin by performing Core Spray pump testing per ST-3PA. When the Core Spray test valve is opened, an overload condition will develop on Core Spray pump A. The crew will perform ARP actions to lower pump flow and then stop the pump. The SRO will determine the Technical Specification impact.

The running Control Rod Drive pump will trip. The crew will enter AOP-69, start the standby pump, and restore normal Control Rod Drive parameters. During this evolution, one Control Rod Drive accumulator will develop a low pressure. The SRO will determine the Technical Specification impact.

Main 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 ATWS system will fail to automatically trip the Recirculation pumps when required. The crew will lower Recirculation flow to minimum and then trip the Recirculation pumps. The crew will terminate and prevent injection except CRD, SLC, and RCIC. The crew will attempt to inject boron using SLC, however the squib valves will fail to fire when the first SLC pump is started. The second SLC pump will successfully start and inject, but then trip after a time delay. The Main Turbine will be available until power lowers to approximately 40%, when a spurious turbine trip occurs. As power lowers, two Turbine Bypass Valves will fail closed, challenging Reactor pressure control and Primary Containment control. The crew will be able to manually insert control rods. Either pulling RPS fuses or venting the scram air header will result in all rods inserting.

The scenario will be terminated when control rods are being inserted or are all inserted and Reactor water level is controlled above 0".

Shift Turnover
The Plant is operating at approximately 99% power. Air Compressor B is out of service for maintenance. Main Generator reactive load is at minimum per Power Control request. When you take the shift, perform Core Spray A pump testing per ST-3PA, starting at step 8.7.6.

Critical Tasks/Standards
Critical Task #1: Given a failure to scram with Reactor power above 2.5%, the crew will lower Reactor power by one or more of the following methods, in accordance with EOP-3: • Terminating and preventing all RPV injection except SLC, RCIC, and CRD • Tripping Recirculation pumps Critical Task #2: Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.

EVENT NO.	EVENT SEQUENCE	
1.	Perform Core Spray Full Flow Test	(Normal: BOP, SRO)
2.	Core Spray Pump Overload	(Component: BOP, SRO)
3.	Control Rod Drive Pump Trip, One Control Rod Drive Accumulator Low Pressure	(Component: ATC, SRO)
4.	Main Turbine Bearing High Vibration, Loss of Main Condenser Vacuum	(Reactivity: ATC) (C: ATC, SRO)
5.	Failure of RPS and ARI to Actuate	(Major: All)
6.	First SLC Squib Valve Fails to Fire, Second SLC Pump Trips, Recirculation Pumps Fail to Automatically Trip	(Component: ATC, SRO)
7.	Main Generator Trip and Two Turbine Bypass Valves Fails Closed	(Component: BOP, SRO)

D. TERMINATION CUES:

- Control rods are being inserted or are all inserted.
- Reactor water level is being controlled above 0".

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 Perform Core Spray Full Flow Test	SRO	• Perform Crew Brief • Direct BOP to perform Core Spray testing per ST-3PA	SAT / UNSAT / NA
Note: As 14MOV-26A is being opened, ensure Trigger 1 automatically activates. This will lead immediately into the next event.	BOP	• Start PMP 14P-1A • Throttle TEST VLV 14MOV-26A to momentarily establish Core Spray Loop A flow rate at GREATER THAN OR EQUAL TO 5150 gpm on EPIC display CS • Throttle TEST VLV 14MOV-26A to establish GREATER THAN OR EQUAL TO 4610 LESS THAN OR EQUAL TO 4790 gpm on EPIC display TRCS (as time permits) • Verify closed MIN FLOW VLV 14MOV-5A (as time permits)	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 2 Core Spray Pump Overload	BOP	• Recognize / report high current on Core Spray pump A • Recognize / report annunciator 09-3-1-31, Core Spray Pmp 14P-1A Overload	SAT / UNSAT / NA
	SRO	• Acknowledge report • Direct execution of ARP • Declare Core Spray pump A inoperable • Determine Technical Specification 3.5.1 Condition A requires restoring Core Spray pump to operable within 7 days	SAT / UNSAT / NA
Role Play: If contacted as NPO about Core Spray pump A while it is still running, immediately report that the pump is running very loudly and there is some light smoke coming from the motor. If contacted as NPO about Core Spray pump A after it has been stopped, immediately report that it has stopped and the smoke is dissipating.	BOP	• Executes ARP 09-3-1-31: • IF either of the following conditions exist: o Pump flow rate is > 4700 gpm, OR Pump amps are > 160, • THEN reduce pump flow rate until: o Pump flow rate is ≤ 4700 gpm, AND Pump amps are ≤ 160 • IF the annunciator remains in alarm, AND core spray is not required to assure adequate core cooling, THEN perform the following: • Ensure closed INBD INJ VLV 14MOV-12A • Ensure closed TEST VLV 14MOV-26A • Ensure open MIN FLOW VLV 14MOV-5A • Stop PMP 14P-1A	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 3 **On Lead Examiner Cue: ACTIVATE TRIGGER 2** Control Rod Drive Pump Trip, One Control Rod Drive Accumulator Low Pressure	ATC	• Recognize / report annunciators: o 09-5-1-9, CRD CHARGING WTR PRESS LO o 09-5-1-39, CRD PMP 3P-16A OVERLOAD o 09-5-1-49, CRD PMP 3P-16A TRIP o 09-5-1-43, CRD ACCUM PRESS LO OR LVL HI (delayed) • Recognize / report trip of CRD pump A • Recognize / report accumulator alarm on control rod 22-31 (delayed)	SAT / UNSAT / NA
Role Play: If contacted about control rod scram times, report that all control rod scram times were within limits during last surveillance.	SRO	• Acknowledge reports • Enter AOP-69 (Control Rod Drive Pump Trouble) • Direct start of CRD pump B • Determine Technical Specification 3.1.5 Condition A requires declaring control rod 22-31 scram time "slow" or declaring control rod 22-31 inoperable within 8 hours	SAT / UNSAT / NA
Role Play: If dispatched to investigate pump trip, wait 2 minutes, then report CRD pump A breaker is tripped and there are no abnormal indications at the pump.	ATC	• Execute AOP-69 • Note override conditions for RPV pressure above 900 psig and required scram • Monitor ACCUM alarm lights on full core display • Ensure CRD FLOW CNTRL 03FIC-301 is in MAN • Rotate manual control knob on CRD FLOW CNTRL 03FIC-301 fully counterclockwise	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION

Role Play:
If dispatched to investigate accumulator alarm, wait 2 minutes, then report that the accumulator pressure for control rod 22-31 is 850 psig and slowly lowering.
	ATC cont.	• Verify in-service CRD flow control valve (03FCV-19A or B) is closed
		• Start CRD PMP 03P-16B
		• Slowly adjust manual control knob on CRD FLOW CNTRL 03FIC-301 to establish 59 to 61 gpm on 03-FI-310 or 03FIC-301
		• Place CRD FLOW CNTRL 03FIC-301 in automatic as follows:
		  o Balance controller by adjusting setpoint tape
		  o Place controller in AUTO
		  o Adjust setpoint to BETWEEN 59 and 61 gpm
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 4 **On Lead Examiner Cue: ACTIVATE TRIGGER 3** Main Turbine Vibration	ATC / BOP	• Recognize / report high Turbine vibrations • Monitor Turbine vibrations • Report vibrations on bearing 5 & 6 are greater than 9 mils but less than 12 mils	SAT / UNSAT / NA
Note: A Reactor scram is required if vibrations exceeded 12 mils or if vibrations exceeded 9 mils for more than 15 minutes. Neither of these conditions are expected in this scenario.	SRO	• Acknowledge report • Enter AOP-66 (Main Turbine High Vibration)	SAT / UNSAT / NA
Role Play: If dispatched to investigate vibrations, wait 2 minutes, then report you can feel vibrations on the Turbine Deck but do not see any obvious cause.	BOP	• Execute AOP-66 • Notifiy crew of Reactor scram criteria • Ensure Main Turbine system engineer is notified • Determine MVARs already lowered to minimum • Coordinate with ATC to lower Recirc flow with RWR MG A(B) SPEED CNTRL • Monitor Turbine vibrations • Report Turbine vibrations are less than 9 mils	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Note: Once Reactor power is reduced to approximately 95%, Triggers 21 and 22 activate to lower the Turbine vibrations. Trigger 4 activates to initiate the next part of event 4.	ATC	• Lower Recirc flow with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 4 Continued Loss of Main Condenser vacuum **Note:** This part of event 4 is automatically initiated when Reactor power is lowered < ~95% in the previous part of the event.	BOP / ATC	• Recognize / report annunciator 09-3-1-28 Offgas Recombiner Trouble • Recognize / report lowering Main Condenser vacuum	SAT / UNSAT / NA
Note: A typical benchmark for directing a Reactor scram is a vacuum of 24.0" Hg.	SRO	• Acknowledge reports • Enter AOP-31 (Loss of Condenser Vacuum) • Direct power reduction per RAP-7.3.16 to maintain Main Condenser vacuum within Normal Operating Region • Direct Reactor scram	SAT / UNSAT / NA
Note: If desired by lead examiner to expedite the vacuum loss in this event, Triggers 23 and/or 24 may be manually inserted once the previous severity of malfunction MC01 is fully ramped in. **Role Play:** If dispatched to investigate Recombiner trouble alarm, wait 2 minutes, then report that the alarm is caused by high Recombiner flow.	BOP	• Execute AOP-31 • Monitor Main Condenser vacuum • Trip Recombiner • Trip H_2 addition • Close 20LCV-958 • Attempt to determine cause of vacuum degradation • Coordinate with ATC to lower Recirc flow with RWR MG A(B) SPEED CNTRL if Core Flow is >55%	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Note: Once a Reactor scram is attempted, a failure to scram will occur. This is scripted in the next event.	ATC	• Lower Recirc flow with RWR MG A(B) SPEED CNTRL if Core Flow is >55%Insert CRAM rods • Depress manual Scram pushbuttons • Place Mode Switch to Shutdown	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Events 6, 7, & 8 Failure of RPS and ARI to Actuate, First SLC Squib Valve Fails to Fire, Second SLC Pump Trips, Recirculation Pumps Fail to Automatically Trip, Main Generator Trip, Two Turbine Bypass Valves Fail Closed	ATC	• Recognize / report failure to scram • Manually initiate ARI	SAT / UNSAT / NA
Critical Task #1		**Given a failure to scram with Reactor power above 2.5%, the crew will lower Reactor power by one or more of the following methods, in accordance with EOP-3:** • **Terminating and preventing all RPV injection except SLC, RCIC, and CRD** • **Tripping Recirculation pumps**	**Pass / Fail**
Critical Task #1 Standard:		**Terminate and prevent all injection except SLC, RCIC and CRD per EP-5** **And/or** **Trip Recirculation pumps**	
Critical Task #2		**Given a failure to scram, the crew will initiate Control Rod insertion, in accordance with EOP-3.**	**Pass / Fail**
Critical Task #2 Standard:		**Perform EP-3 Backup Control Rod Insertion Actions to insert control rods.**	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO		SAT / UNSAT / NA
Note: Malfunctions will: o Trip the Main Generator when Reactor power lowers to approximately 42% o Fail closed two Turbine Bypass Valves when Reactor power lowers to approximately 24%		• Acknowledge report • Enter EOP-2 (RPV Control) on Reactor power above 2.5% or unknown when a scram is required • Determine the Reactor will NOT remain shutdown under all conditions without boron • Exit EOP-2 • Enter EOP-3 (Failure to Scram) • **Direct EP-3 Failure to Scram Actions** • Direct bypassing MSIV low RPV water level isolation interlocks per EP-2 • **Direct terminate and prevent all injection except SLC, RCIC and CRD per EP-5** • Direct RPV water level controlled between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI) • Direct Reactor pressure controlled 800-1000 psig with Turbine Bypass Valves and SRVs, as required	**Critical Tasks #1 and #2** **Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	ATC		SAT / UNSAT / NA
		• Perform EP-3 Failure to Scram Actions o Ensure Rx Mode Switch in SHUTDOWN o Ensure ARI initiated o Run Recirc flow to minimum o Determine Rx power greater than 2.5% o **Ensure Recirc pumps tripped** o Override ADS o Place ADS LOGIC OVERRIDE & RESET LOGIC A 2E-S2A in OVERRIDE o Place ADS LOGIC OVERRIDE & RESET LOGIC B 2E-S2B in OVERRIDE o Verify annunciator 09-4-1-27 ADS OVERRIDE SW IN OVERRIDE is in alarm o Verify white ADS LOGIC OVERRIDDEN 2E-DS10 light is on o Obtain CRS concurrence to inject SLC o Attempt to inject SLC o Verify white SQUIB VLVS READY lights are on o Note level on TK LVL 11LI-66 o Place SLC pup keylock switch in START SYS-A or START SYS-B o Verify red SLC pump running light is on o Verify SLC pump discharge pressure on DISCH PRESS 11PI-65 is greater than or equal to RPV pressure	**Critical Task #1**
Note: Due to failure of the SLC squib valves to fire, pump discharge pressure will be high (near 1500 psig) and tank level will NOT lower.			

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	ATC cont.	o Verify the following: o CLN UP SUCT 12MOV-18 is closed o CLN UP RETURN ISOL VALVE 12MOV-69 is closed o Recognize / report failure of SLC pump to inject o Attempt to inject with other SLC pump o Recognize / report trip of second SLC pump • Insert IRMs and SRMs • Range IRMs as necessary	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Booth Operator: When directed to install MSIV low water level jumpers, wait 2 minutes and **run** MSIVLEVEL.cae.	BOP	• Direct NPO to bypass MSIV low RPV water level isolation interlocks per EP-2 Section 5.1 • **Terminate and prevent all injection except SLC, RCIC, and CRD per EP-5** o Feedwater o If RFP A is running: o Ensure RFP A FLOW CNTRL 06-84A is in MAN o Lower RFP A FLOW CNTRL 06-84A to minimum o Ensure open RFP A MIN FLOW 34FCV-135A o If RFP B is running: o Ensure RFP B FLOW CNTRL 06-84B is in MAN o Lower RFP BFLOW CNTRL 06-84B to minimum o Ensure open RFP B MIN FLOW 34FCV-135B o Ensure closed: o RFP A DISCH 34MOV-100A o RFP B DISCH 34MOV-100B o Ensure FDWTR STARTUP VLV 34FCV-137 in MANUAL o Ensure closed FDWTR STARTUP VLV 34FCV-137 o HPCI o Trip HPCI by depressing TURB TRIP 23A-S19 pushbutton	SAT / UNSAT / NA **Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Note: RCIC is out of service as part of the scenario setup, so RCIC actions may not be taken.	BOP cont.	o Core Spray Loop A o Place 14MOV-11A AUTO ACTUATION BYPASS SW 14A-S16A switch in bypass o Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on o Ensure closed OUTBD INJ VLV 14MOV-11A o Ensure PMP 14P-1A is stopped o Core Spray Loop B o Place 14MOV-11B AUTO ACTUATION BYPASS SW 14A-S16B switch in bypass o Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on o Ensure closed OUTBD INJ VLV 14MOV-11B o Ensure PMP 14P-1B is stopped	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Booth Operator: If requested to disconnect RHR timers, wait 2 minutes, then **activate Trigger 19** and report task completion.	BOP cont.	o RHR Loop A o Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A o Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on o Ensure closed LPCI OUTBD INJ VLV 10MOV-27A o Ensure RHR Loop A pumps which are not required to be running are stopped o RHR Loop B o Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B o Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on o Ensure closed LPCI OUTBD INJ VLV 10MOV-27B o Ensure RHR Loop B pumps which are not required to be running are stopped • Report RPV water level is less than 110" to CRS	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP cont.	• Control RPV water level between -19" and 110" with only Group 1 Water Level Control Systems (Condensate/Feedwater, CRD, HPCI, RCIC, LPCI) o Feedwater o If any Reactor feed pump is running: o Ensure feedwater pump discharge pressure is less than RPV pressure by adjusting reactor feed pump speed o Lineup injection flow path by performing on or both of the following: o Adjusting FDWTR STARTUP VLV 34FCV-137 o Ensure open or throttled open Reactor feed pump discharge valve for running pump (34MOV-100A or B) o Control feed flow to RPV by performing any of the following: o Adjust RFP speed o Adjust FDWTR STARTUP VLV 34FCV-137 o Close feed pump discharge valves o 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: o Throttling FDWTR STARTUP VLV 34FCV-137 o Throttling one or both of the following valves, only if APRMs are on scale: o RFP A DISCH 34MOV-100A o RFP B DISCH 34MOV-100B	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP cont.	o HPCI o Preparation for injection: o Ensure SGT is running per OP-20 o Ensure open one of the following valves: o HPCI GLAND SEAL SUCT 01-125MOV-13A o HPCI GLAND SEAL SUCT 01-125MOV-13B o Ensure HPCI FLOW CNTRL 23FIC-108-1 setpoint is adjusted to minimum o Ensure HPCI FLOW CNTRL 23FIC-108-1 is in AUTO o Injection with initiation signal: o Depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton o Verify annunciator 09-3-3-28 HPCI TURB TRIP SOLENOID ENERGIZED is clear o Verify HPCI auto-initiation o Control HPCI turbine speed in manual or automatic o Periodically verify HPCI turbine speed is greater than 2100 rpm o Injection without initiation signal: o Depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton o Verify annunciator 09-3-3-28 HPCI TURB TRIP SOLENOID ENERGIZED is clear o Ensure open OUTBD STM SUPP VLV 23MOV-16 o Ensure GLAND SEAL CNDSR BLOWER 23P-140 is running	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	BOP cont.	o HPCI cont. o Injection without initiation signal cont. o Ensure open TURB STM SUPP VLV 23MOV-14 o Ensure AUX OIL PMP 23P-150 is running o Open INJ VLV 23MOV-19 o Ensure closed the following valves: o STM LINE DRAIN TO RADW 23AOV-42 o STM LINE DRAIN TO RADW 23AOV-43 o TEST VLV TO CST 23MOV-21 o HPCI & RCIC TEST VLV TO CST 23MOV-24 o Control HPCI turbine speed in manual or automatic o Periodically verify HPCI turbine speed is greater than 2100 rpm	SAT / UNSAT / NA
Booth Operator: If requested to pull RPS fuses, wait 30 seconds and for lead examiner concurrence, then **run SCRAMFUSEOUTB.cae** and report task completion. If directed to vent Scram Air Header, wait 2 minutes and for lead examiner concurrence, then **activate Trigger 20** and report task completion.	ATC	• **Perform EP-3 Backup Control Rod Insertion Actions** o May de-energize scram solenoids per Subsection 5.2 o Determine fuses to be pulled based on lit RPS Scram Group lights o Direct NPO to pull fuses 5A-F18B, 5A-F18F, 5A-F18D, and 5A-F18H o May direct NPO to vent scram air header per Subsection 5.3 • Report all control rods are inserted	SAT / UNSAT / NA **Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO	• Acknowledge report • Exit EOP-3 • Enter EOP-2 • Direct Reactor water level restored and maintained 177-222.5"	SAT / UNSAT / NA
	BOP	• Begin restoring Reactor water level 177-222.5"	SAT / UNSAT / NA

Termination Criteria:

- Control rods are being inserted or are all inserted.
- Reactor water level is being controlled above 0".

Shift Turnover
The Plant is operating at approximately 100% power. Air Compressor B is out of service for maintenance. Main Generator reactive load is at minimum per Power Control request. When you take the shift, perform Core Spray A pump testing per ST-3PA, starting at step 8.7.6.

Facility: James A. Fitzpatrick Scenario No.: NRC-3 Op-Test No.: 14-2

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 100% power. Air Compressor B is out of service for maintenance.

Turnover: Swap RBCLC pumps per OP-40 section G.1. Then lower Reactor power to 95% using Recirculation flow.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Swap RBCLC Pumps OP-40
2	N/A	R – ATC, SRO	Lower Reactor Power to 95% Using Recirculation Flow OP-27
3	RR23:B	I – All	Recirc Flow Unit Failure OP-16, Technical Specifications
4	ED21:A	C – BOP, SRO	Electrical Fault on Bus L-15 AOP-18A, Technical Specifications
5	AD06:C	C – BOP, SRO	SRV C Inadvertently Opens AOP-36
6	AD06:C MS16:G	M – All	SRV C Re-Opens, SRV Tailpipe Break Into Torus Airspace AOP-36, AOP-1, EOP-2, EOP-4
7	TC11	I – ATC, SRO	Main Turbine Fails to Trip AOP-1
8	RH01 Remotes Overrides	C – BOP, SRO	RHR Pump Trip, RHR Pump Suction Valve Fails Closed, RHRSW Crossties Fail Closed EOP-4, EOP-2

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: **James A. Fitzpatrick**	Scenario No.: **NRC-3**	Op-Test No.: **14-2**
1. Total malfunctions (5-8) **Events 3, 4, 5, 6, 7, 8**	6	
2. Malfunctions after EOP entry (1-2) **Events 7 & 8**	2	
3. Abnormal events (2-4) **Events 4 & 5**	2	
4. Major transients (1-2) **Event 6**	1	
5. EOPs entered/requiring substantive actions (1-2) **EOP-2, EOP-4**	2	
6. EOP contingencies requiring substantive actions (0-2) **EOP-2 Emergency Depress Leg**	1	
7. Critical tasks (2-3)	2	
CRITICAL TASK DESCRIPTIONS: **CT-1: Given a stuck open SRV, the crew will scram the Reactor before Torus water temperature exceeds the Boron Injection Initiation Temperature, in accordance with AOP-36 and EOP-4.** **CT-2: Given the inability to maintain Primary Containment conditions inside the Pressure Suppression Pressure, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-4.**		

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 14-2 NRC EXAMINATION SCENARIO 3

TITLE:	**LOI 14-2 NRC EXAMINATION SCENARIO 3**
SCENARIO NUMBER:	**NRC 3**
PATH:	**STAND ALONE**

Validation: _____ **Training:** _____ **Operations:** _____

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED
5/15/14	LOI 14-2 NRC Exam	New Scenario	T. Hooper	

A. **TITLE:** LOI 14-2 NRC EXAMINATION SCENARIO 3

B. **SCENARIO SETUP:**

1. IC-63

2. Special Instructions:

   a. The Plant is operating at approximately 100% power.
   b. Air Compressor B is out of service for maintenance.

3. Preset Conditions:

   a. Trigger 1, M:RR23:B, Recirculation Flow Unit B Fails, 0%
   b. Trigger 2, M:ED21:A, 600VAC Emerg Bus 11500 Failure
   c. Trigger 3, M:AD06:C, Rx Press Relief Valve (C – Inadvertently Opens)
   d. Trigger 4, O:AN941:08, ADS CNTRL PWR FAIL, on
   e. Trigger 4, O:AD ZLO271C(1), SRV C Green Light, off
   f. Trigger 4, O:AD ZLO271C(2), SRV C White Light, off
   g. Trigger 4, O:AD ZLO271C(3), SRV C Red Light, off
   h. Preset, M:TC11, Main Turbine Auto Trip Failure
   i. Trigger 6, M:RH01:B, RHR Pump B Trip, Delay=90 seconds
   j. Trigger 6, M:RH01:D, RHR Pump D Trip, Delay=105 seconds
   k. Trigger 6, M:MS16:C, ADS Discharge Line (2E-RV2-71C), Delay=1 minute, Ramp=5 minutes, 100%
   l. Trigger 25, R:AD07:C, 'C' SRV Isolation Switch at Remote Panel, Local
   m. Trigger 26, R:AD02:C, 'C' SRV Fuse Pull Out, Out
   n. Trigger 27, O:AN941:18, REMOTE SHUTDOWN PNL DOOR OPEN, on
   o. Trigger 22, R:SW46A, Manual Operation of 10MOV148A, 0%
   p. Trigger 23, R:SW46D, Manual Operation of 10MOV149B, 0%
   q. Trigger 22, O:SW ZLO10AS49A(1), Service Wtr Crosstie Valve, Off
   r. Trigger 22, O:SW ZLO10AS49A(2), Service Wtr Crosstie Valve, Off
   s. Trigger 23, O:SW ZLO10AS50B(1), Service Wtr Crosstie Valve, Off
   t. Trigger 23, O:SW ZLO10AS50B(2), Service Wtr Crosstie Valve, Off
   u. Preset, O:AN962:18, Air Compr 39AC-2B Trip, Off
   v. Event Trigger 4, Action: None, Command: mrf ad02:c in
   w. Event Trigger 6, Action: (zlo5ads8a == 0) && (zlo5ads8b == 0), Command: None
   x. Event Trigger 16, Action: zlo10as4b(2)==0, Command: dmf rh10:b
   y. Event Trigger 17, Action: zlo10as4d(2)==0, Command: dmf rh10:b
   z. Event Trigger 22, Action: zdi10as49a==1, Command: None
   aa. Event Trigger 23, Action: zdi10as50b==1, Command: None

4. Consumable Forms and Procedures:
   - AOP-1
   - AOP-18A
   - AOP-36

C. SCENARIO SUMMARY:

The scenario will begin at approximately 100% power with Air Compressor B out of service for maintenance. The crew will begin the shift by starting RBCLC pump A and securing RBCLC pump C for normal equipment rotation. Next the crew will lower Reactor power to approximately 95% using Recirculation flow.

Recirculation flow unit B will fail downscale. This will result in a rod block and half scram. The SRO will determine the Technical Specification impact. The crew will bypass Recirculation flow unit B and reset the half scram.

An electrical fault will develop on Bus L-15. The crew will execute AOP-18A, Loss of Switchgear L15. The crew will start Standby Gas Treatment train B and isolate normal Reactor Building Ventilation. Multiple important loads will be lost, including RHR A Containment spray/cooling valves, Core Spray A injection valves, and SLC pump A. The SRO will determine the Technical Specification impact.

SRV C will inadvertently open. The crew will execute AOP-36, Stuck Open Relief Valve(s). The crew will take actions to close SRV C. The valve will close when the isolation switch in the field is manipulated. The crew will place Torus cooling in service on RHR loop B. RHR loop A will be unavailable from the earlier loss of Bus L15.

SRV C will re-open due to mechanical failure. The crew will execute AOP-36, Stuck Open Relief Valve(s). The crew will take actions to close SRV C, but the valve will not close. The crew may lower Reactor power in anticipation of a Reactor scram. The crew will execute EOP-4, Primary Containment Control, and EOP-2, RPV Control. The crew will manually scram the Reactor per AOP-1, Reactor Scram, before Torus water temperature reaches 110°F. Following the scram, the Main Turbine will fail to automatically trip. The crew will execute guidance in AOP-1 to manually trip the Main Turbine.

The SRV C tailpipe will develop a break in the Torus airspace. This will result in rising Containment pressures and temperatures. The crew will attempt to control Containment conditions by initiating Torus and Drywell spray. RHR loop A will be unavailable for sprays due to the earlier loss of L-15. RHR pumps B and D will trip, resulting in loss of the ability to spray with RHR. The crew will attempt to spray using RHR Service Water. Loop A will be unavailable due to the earlier loss of Bus L15. Loop B will be unavailable due to failure of one of the crosstie valves to open. With no Torus and Drywell spray capability, Containment conditions will exceed the Pressure Suppression Pressure. The crew will execute and Emergency RPV Depressurization.

The scenario will be terminated when all control rods are inserted, the Emergency RPV Depressurization is in progress, and Reactor water level is controlled above 0".

Shift Turnover
The Plant is operating at approximately 100% power. Air Compressor B is out of service for maintenance. When you take the shift: 1. Start RBCLC pump A and secure RBCLC pump C per OP-40 section G.1. 2. Lower Reactor power using Recirculation flow per the provided Reactivity Maneuver Instructions.

Critical Tasks/Standards
Critical Task #1: Given a stuck open SRV, the crew will scram the Reactor before Torus water temperature exceeds the Boron Injection Initiation Temperature, in accordance with AOP-36 and EOP-4.
Critical Task #2: Given the inability to maintain Primary Containment conditions inside the Pressure Suppression Pressure, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-4.

EVENT NO.	EVENT SEQUENCE	
1.	Swap RBCLC Pumps	(Normal: BOP, SRO)
2.	Lower Reactor Power to 95% Using Recirculation Flow	(Reactivity: ATC, SRO)
3.	Recirc Flow Unit Failure	(Instrument: All) (Tech Spec: SRO)
4.	Electrical Fault on Bus L-15	(Component: BOP, SRO) (Tech Spec: SRO)
5.	SRV C Inadvertently Opens	(Component: BOP, SRO)
6.	SRV C Re-Opens, SRV Tailpipe Break Into Torus Airspace	(Major: All)
7.	Main Turbine Fails to Trip	(Instrument: ATC, SRO)
8.	RHR Pump Trip, RHR Pump Suction Valve Fails Closed, RHRSW Crossties Fail Closed	(Component: BOP, SRO)

D. TERMINATION CUES:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 Swap RBCLC Pumps	SRO	• Perform Crew Brief • Direct BOP to start RBCLC pump A and secure RBCLC pump C per OP-40 section G.1	SAT / UNSAT / NA

Role Play:
If dispatched to perform any pump checks, immediately report that the requested pump checks are SAT.
	BOP	• Start RBCLC pump A
		  • Verify RBCLC pump motor current is LESS THAN maximum normal amps
		  • Place and hold control switch for RBCLC pump C in STOP until RBCLC System discharge header pressure is stable at GREATER THAN 75 psig, then release control switch
		  • Verify RBCLC pump motor current for the running RBCLC pumps is LESS THAN maximum normal amps
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 2 Lower Reactor Power to 95% Using Recirculation Flow	SRO	• Direct ATC to lower power to 95% with Recirc flow • Provide oversight for reactivity manipulation	SAT / UNSAT / NA
	ATC	• Lower Recirc flow alternately with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level	SAT / UNSAT / NA
	BOP	• Assist ATC with peer checks and plant monitoring	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 3 **On Lead Examiner Cue: ACTIVATE TRIGGER 1** Recirc Flow Unit Failure	ATC	• Recognize / report multiple annunciators, including 09-5-2-25, FLOW REF OFF NORM • Recognize / report APRMs B, D, and F indicate normally but have an upscale trip • Recognize / report half scram	SAT / UNSAT / NA
	SRO	• Acknowledge report • Direct ARP response • Direct bypassing Recirc flow unit B per OP-16 • Direct reset of half scram • Determine one of two required channels of Technical Specification Table 3.3.1.1-1 Function 2b is not operable with an inoperable Recirc flow unit • Determine Technical Specification 3.3.1.1 Condition A must be entered (place channel in trip or place associated trip system in trip within 12 hours) • Determine one of four required channels of TRM Table T3.3.B-1 Function 1b is not operable with an inoperable Recirc flow unit • Determine TRM 3.3.B Condition A must be entered (restore inoperable channel within 7 days)	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Coordinate with BOP to bypass Recirc flow unit B per OP-16 Section E.21: o Place RWR FLOW UNIT BYP switch in B o Verify the following FLOW UNIT indications: ▪ Associated BYPASS indicating light is on ▪ Associated UPSC OR INOP light is off ▪ Associated COMPAR light is off o Verify BYPASS light is off for other flow unit channel on same side o Verify white BYP light in on at top of panel 09-14 for FLOW UNIT B o IF a flow unit is declared inoperable, THEN one of the two required APRM Neutron Flux-High (flow biased) Channels in the associated trip system must be considered inoperable o Coordinate with BOP to place switch S-1 on FLOW UNIT B to INT TEST at panel 09-14 • Reset half scram per ARP: o Place RX SCRAM RESET switch to GROUP 2 & 3, then to GROUP 1 & 4, spring return to NORM o Verify RPS B SCRAM GROUPS 1, 2, 3, and 4 lights are on	SAT / UNSAT / NA SAT / UNSAT / NA
	BOP	• Assist ATC with actions and/or plant monitoring, as required • Place switch S-1 on FLOW UNIT B to INT TEST at panel 09-14	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 4 **On Lead Examiner Cue: ACTIVATE TRIGGER 2** Electrical Fault on Bus L-15	BOP / ATC	• Recognize / report multiple annunciators • Recognize / report loss of L-15	SAT / UNSAT / NA
	SRO	• Acknowledge reports • Enter AOP-18A, Loss of Switchgear L15 • Enters / exits EOP-5, Secondary Containment Control, due to Reactor Building D/P • Determine operability is affected for Core Spray, RHR, SLC, PCIS, MSLCS, LPCI MOV IPS, and SGT • Determine most limiting Technical Specification entry is LCO 3.8.7 Condition A, which requires restoring L-15 to operable status within 8 hours	SAT / UNSAT / NA

Role Play:
If dispatched to investigate, wait 2 minutes, then report that the L-15 supply breaker (11502) is tripped and appears to be damaged.
	BOP	• Execute AOP-18A, Loss of Switchgear L15
		  o Attempt to maintain drywell pressure by controlling drywell temperature as follows:
		  ▪ Ensure running Drywell Cooling Fans 68FN-2B, 2D, 4B, 4D
		  ▪ Consider initiating Torus Vent per OP-37
		  ▪ Consider lowering RBC temperature below normal
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	BOP cont.	o Isolate Reactor Building Ventilation as follows: o Ensure running, Standby Treatment System "B" per OP-20 ▪ Open BELOW EL 369' SUCT 01-125MOV-12 ▪ Open TRAIN B INLET 01-125MOV-14B o Depress RB VENT ISOL B pushbutton at 09-75 o Verify Reactor Building Isolation per Section G of OP-51A, refer to Attachment 1 for de-energized valves o Refer to Attachment 1 for affected loads o Refer to Attachment 2 for multiple alarms associated with L15 loads o Consider shutting down the following systems: ▪ RWCU System ▪ Fuel Pool Cooling System o Direct Electricians to measure "A" LPCI Inverter Battery 71BAT-3a parameters every 4 hours	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 5 **On Lead Examiner Cue: ACTIVATE TRIGGER 3** SRV C Inadvertently Opens	BOP / ATC	• Recognize / report annunciators: o 09-4-1-16, SRV Leaking o 09-4-2-6, SRV Sonic Mon Alarm Hi • Recognize / report SRV C open	SAT / UNSAT / NA
Note: RHR loop A is unavailable for Torus Cooling due to loss of Bus L-15.	SRO	• Acknowledge report • Enter AOP-36, Stuck Open Relief Valve • If Torus water temperature exceeds 95°F or Torus water level exceeds 14.0 feet, enter EOP-4, Primary Containment Control • Direct initiation of Torus Cooling • Determine SRV C is inoperable, but is not a required ADS valve per Technical Specification 3.5.1	SAT / UNSAT / NA
	BOP	• Execute AOP-36 o Identify open SRV o Determine annunciator 09-4-2-37 is NOT in alarm o Determine annunciator 09-4-3-3 is NOT in alarm o Cycle SRV C control switch at panel 09-4 o Direct Operator to place SRV C isolation switch in LOCAL at panel 25ASP-5 o Determine SRV C closed	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: When directed to place SRV C isolation switch in LOCAL, wait 2 minutes, insert Trigger 25, wait approximately 15 seconds, then report task completion. **Role Play:** When directed to remove SRV C fuses, wait 1 minute, insert Trigger 26, then report task completion. **Role Play:** When directed to place SRV C isolation switch in REMOTE, wait 1 minute, re-insert remote **AD07:C** in **remote**, wait approximately 15 seconds, then report task completion.	BOP	o Direct Operator to remove the four control power fuses for SRV C at panel 09-45 o Direct Operator to place SRV C isolation switch in REMOTE at panel 25ASP-5 o Monitor Torus water temperature • Initiate Torus Cooling per OP-13B posted attachment: o Ensure at least one of the RHR pumps is running o Open RHR TEST TORUS CLG & SPRAY 10MOV-39B o Throttle RHR TEST & TORUS CLG 10MOV-34B to establish desired/flow o WHEN RHR Loop A(B) flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16B o Establish RHRSW flow and temperature control • Initiate RHRSW per OP-13C posted attachment: o Start one of the RHRSW pumps o Throttle RHRSW DISCH VLV FROM HX B 10MOV-89B to establish 2500 to 4000 gpm o Start the second RHRSW pump if desired o Throttle RHRSW DISCH VLV FROM HX B 10MOV-89B to establish 2500 to 4000 gpm per RHRSW pump o Close HX B BYP VLV 10MOV-66B	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Events 6, 7, & 8 **On Lead Examiner Cue:** **ACTIVATE TRIGGER 4** SRV C Re-Opens, SRV Tailpipe Break Into Torus Airspace, Main Turbine Fails to Trip, RHR Pump Trip, RHR Pump Suction Valve Fails Closed, RHRSW Crossties Fail Closed **Note:** Ensure Trigger 6 automatically goes active when the Reactor scrams to cause the SRV tailpipe break.	BOP / ATC	• Recognize / report annunciator 09-4-2-6, SRV Sonic Mon Alarm Hi • Recognize / report SRV C open	SAT / UNSAT / NA
Critical Task #1 **Critical Task #1 Standard:**		**Given a stuck open SRV, the crew will scram the Reactor before Torus water temperature exceeds the Boron Injection Initiation Temperature, in accordance with AOP-36 and EOP-4.** **The Reactor is scrammed.**	**Pass / Fail**
Critical Task #2 **Critical Task #2 Standard:**		**Given the inability to maintain Primary Containment conditions inside the Pressure Suppression Pressure, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-4.** **7 SRVs are open.**	**Pass / Fail**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SRO		SAT / UNSAT / NA
		• Acknowledge report	
		• Enter AOP-36, Stuck Open Relief Valve	
		• Acknowledges SRV C will NOT close	
		• Enters / re-enters EOP-4, Primary Containment Control on high Torus water temperature, if required	
		• May direct rapid Reactor power reduction with Recirculation flow and/or CRAM rods	
		• **Before Torus water temperature exceeds 110°F, direct Reactor scram**	**Critical Task #1**
		• Enter AOP-1, Reactor Scram	
		• Enter EOP-2, RPV Control, on low Reactor water level	
		• Direct Reactor water level controlled 180-220" using Feedwater	
		• Direct Reactor pressure controlled 800-1000# using Turbine Bypass Valves	
		• Direct preventing injection from Core Spray and RHR as Reactor pressure lowers	
		• May direct closing MSIVs	
		• Acknowledge degrading Primary Containment conditions	
		• Re-enter EOP-2 on high Drywell pressure	
		• Re-enter EOP-4 on high Drywell pressure and temperature	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SRO cont.		SAT / UNSAT / NA
Note: The Pressure Suppression Pressure is approximately 26-28 psig at the Torus water level expected during this scenario.		• When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 15 psig, direct initiation of Torus Spray • Acknowledge trip of RHR pump and inability to spray using RHR • Direct Torus Spray using RHRSW per EP-14 • Acknowledge inability to spray using RHRSW • When Torus pressure exceeds 15 psig, determine unable to spray Drywell • Monitor Primary Containment conditions on Pressure Suppression Pressure curve • **When Torus pressure cannot be maintained below the Pressure Suppression Pressure, direct opening 7 ADS valves** • Acknowledge that less than 7 ADS valves are open • **Direct opening additional SRVs until a total of 7 SRVs are open** • Acknowledge that 7 SRVs are open	**Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: When directed to place SRV C isolation switch in LOCAL, wait 2 minutes, then report task completion. Use **Trigger 27** and the associated annunciator override as necessary to simulate opening/closing the door to 25ASP-5 (but do NOT use remotes to actually cycle isolation switch or pull SRV fuses).	BOP	• Execute AOP-36 o Identify open SRV o Determine annunciator 09-4-2-37 is NOT in alarm o Determine annunciator 09-4-3-3 is NOT in alarm o Cycle SRV C control switch at panel 09-4 o Direct Operator to place SRV C isolation switch in LOCAL at panel 25ASP-5 o Determine SRV C is open o Direct Operator to place SRV C isolation switch in REMOTE at panel 25ASP-5 o Monitor Torus water temperature • Enter AOP-1 • Control Reactor water level 180-220" using Feedwater	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Enter AOP-1 • **Depress MANUAL SCRAM A and MANUAL SCRAM B pushbuttons** • **Place RX MODE switch in SHUTDOWN** • Fully insert IRMs and SRMs • Observe Reactor power lowering • Ensure closed SDIV vent and drain valves • Recognize / report failure of Main Turbine to automatically trip, if not manually tripped before automatic trip required • Manually trip Main Turbine • Verify 4KV loads transfer to reserve power	SAT / UNSAT / NA **Critical Task #1**

Note:
RHR loop A is unavailable to spray due to loss of Bus L-15. RHR pumps B and D trip on a time delay after the scram. Therefore, RHR is unavailable to spray either the Torus or the Drywell.
	ATC / BOP	• May attempt to initiate Torus spray:
		  o Place SPRAY CNTRL 10A-S17B switch to MANUAL, spring return to normal
		  o Verify white SPRAY PERM 10A-DS67B light is on
		  o May attempt to start RHR pump
		  o Recognize / report trip of RHR pumps B and D
		  o Recognize / report inability to spray using RHR
			SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP cont.	• Attempt to initiate Torus spray using RHRSW per EP-14: o Verify RHR pumps B and D are stopped o Ensure closed 10MOV-26B and/or 10MOV-31B o Ensure closed 10MOV-39B and/or 10MOV-38B o Ensure closed 10MOV-39B and/or 10MOV-34B o Ensure closed 10MOV-25B and/or 10MOV-27B o Ensure RHRSW pumps B and D are running o Ensure RHRSW DISCH VLV FROM HX B 10MOV-89B is throttled to establish 2500 to 4000 gpm per RHRSW pump. o Attempt to open both of the following valves: ▪ RHRSW TO RHR 10MOV-148B ▪ RHRSW TO RHR 10MOV-149B o Recognize / report 10MOV-149B fails to open o Recognize / report inability to spray using RHRSW	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION

Note:
SRV C is inoperable and unable to be opened. SRV G is failed open, and therefore may not be counted by the crew as open for the purposes of Emergency RPV Depressurization. Therefore, the crew may open either one or two additional non-ADS SRVs.
	ATC / BOP cont.	• May close MSIVs, as directed
		• Verify isolations per AOP-15, as time permits
		• **Attempt to open 7 ADS valves**
		• Recognize / report less than 7 ADS valves open
		• **Open additional SRVs until 7 SRVs are open**
		• Restore and maintain Reactor water level 180-220" using available injection systems
		• Control Core Spray injection:
		  o Throttle 14MOV-12B
		• Control LPCI injection:
		  o Throttle 10MOV-27A
		  o Secure RHR pumps if needed
			SAT / UNSAT / NA
			
			Critical Task #2

Termination Criteria:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

Shift Turnover
The Plant is operating at approximately 100% power. Air Compressor B is out of service for maintenance. When you take the shift: 1. Start RBCLC pump A and secure RBCLC pump C per OP-40 section G.1. 2. Lower Reactor power using Recirculation flow per the provided Reactivity Maneuver Instructions.

Reactivity/monitoring Steps – (site specific control rod movement control sheet format is to be used)

EN-RE-215 Attach 9.4

Power Reduction Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Lower **power** to 95% RTP	-	-	-	RWR	NA	-	Target rate = 1% RTP per minute

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

CONTROL ROOM OPERATOR

Reactivity/monitoring Steps – (site specific control rod movement control sheet format is to be used)

Power Reduction Today

EN-RE-215 Attach 9.4 **Page 1 of 1**

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Lower **power** to 95% RTP	-	-	-	RWR	NA	-	Target rate = 1% RTP per minute

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

INDEPENDENT VERIFIER

Facility: James A. Fitzpatrick Scenario No.: NRC-4 Op-Test No.: 14-2

Examiners: _____ Operators: _____

Initial Conditions: The plant is operating at approximately 65% power. Circulating Water pump C is ready to be returned to service following maintenance.

Turnover: Start Circulating Water pump C per OP-4 section D.17. Then, raise Reactor power using Recirculation flow per the provided reactivity instruction.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N – BOP, SRO	Start Circulating Water Pump C OP-4
2	N/A	R – ATC, SRO	Raise Reactor Power with Recirculation Flow OP-27
3	Override	I – ATC, SRO	Recirculation Pump B Runs High OP-27, Technical Specifications
4	Override	C – BOP, SRO	Loss of Steam Packing Exhauster A ARP 09-7-3-43, OP-24D
5	SW01:B	C – BOP, SRO	Loss of RBCLC Flow to Recirculation Pump B OP-27, AOP-8, Technical Specifications
6	MS05	M – All	Main Steam Leak into Turbine Building AOP-40, AOP-1, EOP-2
7	RP12	I – ATC, SRO	All MSIVs Fail to Automatically Close AOP-40
8	FW03/04 RD06 Override	M – All	Loss of High Pressure Injection EOP-2
9	Override HP02	I – BOP, SRO	HPCI Flow Controller Failure in Automatic, HPCI Trips OP-15, EOP-2
10	RC02 RC03 AD01	I - All	RCIC Fails to Automatically Initiate, RCIC Trips, ADS Fails to Automatically Initiate OP-19, EOP-2

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: **James A. Fitzpatrick**	Scenario No.: **NRC-4**	Op-Test No.: **14-2**
1. Total malfunctions (5-8) **Events 3, 4, 5, 6, 7, 8, 9, 10**	8	
2. Malfunctions after EOP entry (1-2) **Events 7, 9, 10**	3	
3. Abnormal events (2-4) **Events 3, 4, 5**	3	
4. Major transients (1-2) **Events 6 & 8**	2	
5. EOPs entered/requiring substantive actions (1-2) **EOP-2**	1	
6. EOP contingencies requiring substantive actions (0-2)	0	
7. Critical tasks (2-3)	3	
CRITICAL TASK DESCRIPTIONS: **CT-1: Given a loss of all RBCLC flow to an operating Recirculation pump, prevent a prolonged Recirculation seal loss of coolant accident by one or more of the following, in accordance with OP-27:** • **Securing the Recirculation pump** • **Isolating the Recirculation pump** **CT-2: Given a Main Steam leak into the Turbine Building and a failure of the MSIVs to automatically close, isolate the Main Steam lines, in accordance with AOP-40.** **CT-3: Given the Reactor above the injection pressure of adequate injection sources, lower Reactor pressure to allow adequate Reactor injection, in accordance with EOP-2.**		

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 14-2 NRC EXAMINATION SCENARIO 4

TITLE:	**LOI 14-2 NRC EXAMINATION SCENARIO 4**
SCENARIO NUMBER:	**NRC 4**
PATH:	**STAND ALONE**

Validation: _____ **Training:** _____ **Operations:** _____

	CANDIDATES
CRS	
ATC	
BOP	

RECORD OF CHANGES

DATE	SOURCE OF CHANGE	BRIEF DESCRIPTION OF CHANGE	INITIATOR	REVIEWED
5/22/14	New	New Scenario	T. Hooper	

A. **TITLE:** LOI 14-2 NRC EXAMINATION SCENARIO 4

B. **SCENARIO SETUP:**

1. IC-64

2. Special Instructions:

   a. The Plant is operating at approximately 65% power.
   b. Circulating Water pump C is ready to be returned to service.

3. Preset Conditions:

   a. TRIGGER 1, O:RR ZAID218416B, MG Set B Digital Speed Control, Initial=14.3, Final=25, Ramp=4 minutes
   b. TRIGGER 2, O:MS ZDI11VACN05, SPE A, STOP
   c. TRIGGER 3, M:SW01:B, Loss of RBCLC Flow to Recirculation Pump B
   d. TRIGGER 4, M:MS05, Steam Leakage Outside Primary Containment, Final=15, Ramp=3 minutes
   e. Preset, M:RP12:A, PCIS Group 1 Inboard MSIV Isolation Failiure
   f. Preset, M:RP12:B, PCIS Group 1 Outboard MSIV Isolation Failiure
   g. Preset, M:HP04, HPCI Flow Auto Flow Controller Failure, 0%
   h. TRIGGER 5, M:HP02, HPCI Turbine Trip, Delay=10 seconds
   i. Preset, M:RC02, RCIC System Failure to Auto Start
   j. TRIGGER 6, M:RC03, RCIC System Turbine Trip, Delay=1 minute
   k. Preset, M:AD01, ADS Timer Fails to Start
   l. TRIGGER 7, M:FW03:A, Rx Feedwater Pmp A Auto Controller Failure, Final=0, Delay=10 seconds
   m. TRIGGER 7, M:FW03:B, Rx Feedwater Pmp B Auto Controller Failure, Final=0, Delay=10 seconds
   n. TRIGGER 7, M:FW04:A, Rx Feedwater Pmp A Manual Controller Failure, Final=0, Delay=10 seconds
   o. TRIGGER 7, M:FW04:B, Rx Feedwater Pmp B Manual Controller Failure, Final=0, Delay=10 seconds
   p. TRIGGER 7, M:RD06:A, CRD Hydraulic Pump Trip A, Delay=10 seconds
   q. TRIGGER 7, M:RD06:B, CRD Hydraulic Pump Trip B, Delay=10 seconds
   r. Preset, OS:SL ZDI11S1, SBLC Selector Switch, STOP
   s. Preset, M:HP04, HPCI Flow Auto Controller Failure, 0%
   t. Event Trigger 1, Event: rrfpa(2)>3150, Command: None
   u. Event Trigger 5, Event: hpfd>100, Command: None
   v. Event Trigger 6, Event: rcfd>15, Command: None
   w. Event Trigger 7, Event: (zlo5ads8a == 0) && (zlo5ads8b == 0), Command: None

4. Consumable Forms and Procedures:
   - AOP-1, AOP-8, AOP-40

C. SCENARIO SUMMARY:

The scenario will begin with the plant operating at approximately 65% power. The crew will begin by starting Circulating Water pump C. The crew will then raise power with Recirculation flow.

Recirculation pump B will run high. The crew will lock the Recirculation pump B scoop tube to stop the uncontrolled positive reactivity addition. This malfunction will result in a Recirculation flow mismatch. The SRO will determine the Technical Specification impact.

The running Steam Packing Exhauster will trip. The crew will respond to the ARP to start the standby Steam Packing Exhauster, and re-establish adequate system parameters.

All RBCLC flow to Recirculation pump B will isolate. This will cause multiple high temperature alarms. If left unmitigated, this will cause degradation of both Recirculation pump B seals and loss of coolant into the Drywell. The crew will secure Recirculation pump B. If damage has occurred to both pump seals, the crew will also isolate Recirculation pump B to stop the loss of coolant. The crew will execute AOP-8 due to the reduction in core flow. The SRO will determine the Technical Specification impact.

A Main Steam leak will develop in the Turbine Building. All automatic closures of the MSIVs will fail. The crew may lower Reactor power in anticipation of a Reactor scram. The crew will scram the Reactor and manually close the MSIVs to stop the leak.

Following the scram, the Feedwater pump controllers will fail low, resulting in a loss of the normal high pressure injection source. HPCI will be available for start, however the automatic flow controller will fail such that HPCI does not automatically inject. The crew will inject with HPCI by taking manual control of the flow controller. HPCI will trip soon after injection is started. RCIC will be available for start, but will fail to automatically start if an automatic initiation signal is received. The crew will manually start RCIC. The running CRD pump will trip and the standby pump will trip upon start. Both SLC pumps will fail to start. With MSIVs closed, the crew will control Reactor pressure with SRVs. With Reactor coolant inventory being lost through the SRVs and only RCIC available as a high pressure injection source, Reactor water level control will be challenged.

RCIC will then trip. The crew will lower Reactor pressure using SRVs and inject with Condensate Booster pumps to restore Reactor water level.

The scenario will be terminated when all control rods are inserted and Reactor water level is controlled above 0".

Shift Turnover
The Plant is operating at approximately 65% power. Circulation Water pump C is ready to be returned to service following maintenance. When you take the shift: 1. Start Circulating Water pump C per OP-4 section D.17. The procedure is in progress up to step D.17.3.e. 2. Then, raise Reactor power using Recirculation flow per the provided reactivity instruction. Stop at approximately 75% power for further Reactor Engineering instructions.

Critical Tasks/Standards
Critical Task #1: Given a loss of all RBCLC flow to an operating Recirculation pump, prevent a prolonged Recirculation seal loss of coolant accident by one or more of the following, in accordance with OP-27: • Securing the Recirculation pump • Isolating the Recirculation pump
Critical Task #2: Given a Main Steam leak into the Turbine Building and a failure of the MSIVs to automatically close, isolate the Main Steam lines, in accordance with AOP-40.
Critical Task #3: Given the Reactor above the injection pressure of adequate injection sources, lower Reactor pressure to allow adequate Reactor injection, in accordance with EOP-2.

EVENT NO.	EVENT SEQUENCE	
1.	Start Circulating Water Pump C	(Normal: BOP, SRO)
2.	Raise Reactor Power with Recirculation Flow	(Reactivity: ATC, SRO)
3.	Recirculation Pump B Runs High	(Instrument: ATC, SRO)
4.	Loss of Steam Packing Exhauster A	(Component: BOP, SRO)
5.	Loss of RBCLC Flow to Recirculation Pump B	(Component: BOP, SRO)
6.	Main Steam Leak into Turbine Building	(Major: All)
7.	All MSIVs Fail to Automatically Close	(Instrument: ATC, SRO)
8.	Loss of High Pressure Injection	(Major: All)
9.	HPCI Flow Controller Failure in Automatic, HPCI Trips	(Instrument: BOP, SRO)
10.	RCIC Fails to Automatically Initiate, RCIC Trips, ADS Fails to Automatically Initiate	(Instrument: All)

D. TERMINATION CUES:

- All control rods are inserted.
- Reactor water level is being controlled above 0".

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 Start Circulating Water Pump C	SRO	• Perform Crew Brief • Direct BOP to start Circulation Water pump C per OP-4 section D.17	SAT / UNSAT / NA
Role Play: If asked for pre- and post-start checks, immediate report checks are SAT. When asked about seal water pressure, wait 1 minute, then report Circulating Water pump C seal water pressure is 25 psig and stable.	BOP	• Place and hold CIRC WTR PMP C 36P-1C control switch in START • WHEN Circulating Water Pump C 36P-1C starts, release CIRC WTR PMP C 36P-1C control switch • Verify CIRC WTR PMP DISCH VLV 36MOV-100C is full open • Verify discharge valve for each running circulating water pump is full open • Verify seal water pressure is GREATER THAN OR EQUAL TO 20 psig on 36PI-111C (circ water pump C seal water press indic) at northwest corner of circ pump pit • Verify all white lights for RPS A and RPS B power source selectors are on at panel 09-16	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 2 Raise Reactor Power with Recirculation Flow	SRO	• Direct ATC to raise power to 75% with Recirc flow • Provide oversight for reactivity manipulation	SAT / UNSAT / NA
Booth Operator: Ensure Trigger 1 automatically activates when Recirculation pump B flow exceeds approximately 11.5 Mlbm/hr to initiate the next event.	ATC	• Raise Recirc flow alternately with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 3 Recirculation Pump B Runs High	ATC	• Recognize / report Recirculation pump B speed controller is malfunctioning	SAT / UNSAT / NA
Note: Depending on the speed of the crew's actions to lock-up Recirculation pump B scoop tube, the resulting Recirculation loop flow mismatch may vary.	SRO	• Acknowledge report • Direct lock-up of Recirculation pump B scoop tube per OP-27 Section G.6 • Enter AOP-8 (Unexpected Change in Core Flow) • Enter AOP-32 (Unexplained/Unanticipated Reactivity Change) • Determine compliance with Technical Specification 3.4.1: o If core flow <70% (53.9 Mlb/hr), flow mismatch must be ≤10% (7.7 Mlb/hr) o If core flow ≥70% (53.9 Mlb/hr), flow mismatch must be ≤5% (3.85 Mlb/hr) o If these limits not met, enter Condition B and restore within 24 hours	SAT / UNSAT / NA
Role Play: If asked as management or Reactor Engineering about how to restore Recirculation flow mismatch to within limits, direct the crew to maintain Recirculation flow at the current value until further investigation and analysis is completed.	ATC	• Place RWR B SCOOP TUBE control switch to TRIP • Place SCOOP TUBE B AUTO UNLOCK control switch in ON • Monitor for Thermal Hydraulic Instabilities • Monitor Feedwater response	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 4 **On Lead Examiner Cue: ACTIVATE TRIGGER 2** Loss of Steam Packing Exhauster A	ATC / BOP	• Recognize / report annunciator 09-7-3-43, SPE VAC LO • Recognize / report neither Steam Packing Exhauster is running	SAT / UNSAT / NA
	SRO	• Acknowledge report • Direct ARP response • Direct starting standby Steam Packing Exhauster	SAT / UNSAT / NA
Role Play: If dispatched to investigate Steam Packing Exhauster A, wait 2 minutes, then report that the breaker for Steam Packing Exhauster A is tripped but there are no other abnormal conditions.	BOP	• Execute ARP 09-7-3-43 • Start Steam Packing Exhauster B per OP-24D section G.1: o Start SPE B 38C-5B o Throttle open SPE B DISCH 38MOV-D2 until red open indicating light comes on (dual position indication) o Close SPE A DISCH 38MOV-D1, while throttling SPE B DISCH 38MOV-D2 to establish 10 to 20 inches of water vacuum on VAC 94PI-09	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Event 5 **On Lead Examiner Cue: ACTIVATE TRIGGER 3** Loss of RBCLC Flow to Recirculation Pump B	BOP / ATC	• Recognize / report EPIC low flow alarm • Recognize / report multiple annunciators, including: o 09-4-3-16, RWR PMP B SEAL CLR FLOW LO o 09-4-3-26, RWR PUMP B MTR WINDING CLR FLOW LO o 09-4-3-33, RWR PMP A OR B TEMP HI	SAT / UNSAT / NA
Critical Task #1		**Given a loss of all RBCLC flow to an operating Recirculation pump, prevent a prolonged Recirculation seal loss of coolant accident by one or more of the following, in accordance with OP-27:** • **Securing the Recirculation pump** • **Isolating the Recirculation pump**	**Pass / Fail**
Critical Task #1 Standard:		**Stop Recirculation pump B.** **And/or** **Isolate Recirculation pump B.**	
	SRO	• Acknowledge reports • Direct ARP execution • **Direction shutdown of Recirculation pump B per OP-27** • Enter AOP-8 (Unexpected Change in Core Flow) • Determine Technical Specification 3.3.1.1 Condition C and TRO 3.3.B Condition C entry is required (1 hour to establish single loop limits for APRM flow biased scram and rod block) • Determine Technical Specification 3.4.1 Condition B entry is required (24 hours)	SAT / UNSAT / NA **Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Note: Some indication for 15FIS-102B is available on EPIC screen RWRB1. **Role Play:** If dispatched to check RBC flow rate to RWR pump B, wait 2 minutes, then report that there is no RBC flow to RWR pump B.	BOP	• Execute ARP 09-4-3-16, as time permits: o Monitor seal cavity temps on 02TR-031 (points 20 & 21) o If seal cavity temp increases to 250°F, then shutdown B RWR pump per Section G of OP-27 o Ensure open 15AOV-132B and 15AOV-133B o Verify RBC flow rate >300 gpm on 15FIS-102B o Monitor DW leakage for signs of seal leakage • Execute ARP 09-4-3-26, as time permits: o Monitor temps on 02-2TR-31 o Verify RBC flow rate >300 gpm on 15FIS-102B o If RBC flow cannot be restored and RWR pump and motor temps are rising, then shut down RWR loop B per OP-27 Section G o Monitor DW sump levels • Execute ARP 09-4-3-33, as time permits: o Check 02-2TR-31 o Check RBC temp o Check RBC lineup and verify at least 300 gpm on 15-FIS-102B o Monitor computer and annunciators for problem o Monitor DW leakage for possible leak in RBC system o If any RWR motor bearing exceeds 220°F, then shut down RWR pump per Section G of OP-27	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION

Note:
If Recirculation pump B is secured before damage to the seals results in coolant leakage into the Drywell, isolation of the pump is not required to meet the critical task.
 	
Role Play:
If dispatched to close 02-2RWR-39B, wait 2 minutes, then report task completion.
 	
Note:
It is expected to move to the next event before the crew addresses Recirculation loop temperature and SLO scram/rod block setpoint issues.
	BOP cont.	• Secure Recirculation pump B per OP-27:
		  ○ **Close RWR PMP B DISCH 02MOV-53B**
		  ○ Verify RWR PMP 02-2P-1B is tripped
		  ○ Place RWR PMP 02-2P-1B control switch in PULL TO LOCK
		  ○ Verify open RWR MG B GEN FIELD BKR
		  ○ **IF loop B isolation is required, THEN ensure closed the following valves:**
		  ▪ **RWR PMP B DISCH 02MOV-53B**
		  ▪ **RWR PMP B SUCT 02MOV-43B**
		  ▪ 02-2RWR-39B (RWR pump B seal purge upstr isol valve)
		• Coordinate with ATC to execute AOP-8, as time permits
		• Monitor for thermal-hydraulic instability
		• Ensure RPV water level returns to normal and stabilizes
		• Determine operating point on Power-Flow Map
		• Demand a 3D Monicore Official Program and review margin to thermal limits
			SAT / UNSAT / NA
			
			Critical Task #1
			
			Critical Task #1

	ATC	• Monitor Reactor power • Monitor for thermal-hydraulic instability • Monitor Feedwater response	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Events 6, 7, 8, & 9 **On Lead Examiner Cue: ACTIVATE TRIGGER 4** Main Steam Leak into Turbine Building, All MSIVs Fail to Automatically Close Loss of High Pressure Injection HPCI Flow Controller Failure in Automatic, HPCI Trips RCIC Fails to Automatically Initiate, RCIC Trips, ADS Fails to Automatically Initiate	ATC / BOP	• Recognize / report annunciator 09-3-1-39, TURB BLDG ARM RAD HI • Recognize / report rising radiation levels in Turbine Building	SAT / UNSAT / NA
Critical Task #2		**Given a Main Steam leak into the Turbine Building and a failure of the MSIVs to automatically close, isolate the Main Steam lines, in accordance with AOP-40.**	**Pass / Fail**
Critical Task #2 Standard:		**Close at least one MSIV in each Main Steam line.**	
Critical Task #3		**Given the Reactor above the injection pressure of adequate injection sources, lower Reactor pressure to allow adequate Reactor injection, in accordance with EOP-2.**	**Pass / Fail**
Critical Task #3 Standard:		**Lower Reactor pressure using SRVs to below the discharge pressure of the Condensate Booster pumps.**	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO		SAT / UNSAT / NA
		• Acknowledge reports	
		• Direct ARP execution	
		• May direct Reactor power reduction with CRAM rods, as time permits	
Note: The crew will monitor Main Steam Tunnel temperatures and likely set a benchmark of 185°F for inserting a scram.		• Enter AOP-40 (Main Steam Line Break)	
		• Direct a manual Reactor scram	
		• Enter AOP-1 (Reactor Scram)	
		• **Direct closure of MSIVs**	**Critical Task #2**
		• Enter EOP-2 (RPV Control) on low Reactor water level	
		• Direct Reactor water level controlled 180 to 220" (expands band as necessary due to injection failures)	
		• Direct Reactor pressure controlled 800-1000 psig using SRVs	
Note: Depending on the pre-scram power level, Reactor water level may not reach the HPCI and RCIC automatic initiation setpoint of 126.5" on the scram.		• Acknowledge failure of Feedwater controllers	
		• Direct manual start of HPCI	
		• Acknowledge failure of HPCI to inject in automatic	
		• Direct manual control of HPCI flow	
		• Acknowledge trip of HPCI	
		• Acknowledge failure of RCIC to automatically start	
		• Direct manual start of RCIC	
		• Acknowledge trip of RCIC (after one minute of injection)	
		• May direct maximizing CRD injection	
		• May direct injection with SLC	
		• **Direct reducing Reactor pressure using SRVs**	**Critical Task #3**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	SRO cont.	• Direct Reactor water level controlled 180 to 220" using Condensate Booster pumps • As time permits, direct Turbine Building evacuation, verification of isolations, and alignment of Control Room, Relay Room, and TSC ventilation • As time permits, direct initiation of Torus Cooling	SAT / UNSAT / NA
	ATC	• May insert CRAM rods, as time permits • Enter AOP-1 • Depress MANUAL SCRAM A and MANUAL SCRAM B pushbuttons • Place RX MODE switch in SHUTDOWN • Fully insert IRMs and SRMs • Observe Reactor power lowering • Ensure closed SDIV vent and drain valves • Ensure Main Turbine is tripped • Verify 4KV loads transfer to reserve power • **Close MSIVs** • Control Reactor pressure 800-1000 psig using SRVs • **Reduce Reactor pressure using SRVs**	SAT / UNSAT / NA **Critical Task #2** **Critical Task #3**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Role Play: If dispatched to investigate in Turbine Building, wait 2 minutes, then report there is a lot of steam coming from the Turbine Deck and very high temperatures. **Role Play:** If dispatched as RP to survey Turbine Building, wait 2 minutes, then report radiation levels matching current status of ARMs. **Role Play:** If dispatched to investigate Feedwater pump control, wait 2 minutes, then report that you have found no indications why Feedwater pump control has failed. **Role Play:** If dispatched to investigate HPCI trip, wait 2 minutes, then report that there appears to be damage to the HPCI Turbine Stop Valve, 23HOV-1.	BOP	• Execute ARP 09-3-1-39, as time permits: o Determine which ARM is in alarm o Evacuate personnel at location of ARM in alarm o Attempt to reset ARM o Direct RP to survey area • Enter AOP-1 • Attempt to control Reactor water level 180-220" using Feedwater • Recognize / report inability to inject with high pressure Feedwater pumps • Recognize / report failure of HPCI to inject • Take manual control of HPCI flow controller and raise flow • Recognize / report HPCI trip • Recognize / report failure of RCIC to automatically start • Start RCIC per OP-19 posted attachment: o Verify Annunciator 09-4-0-32 RCIC LOGIC RX LVL HI is clear o Verify RCIC is lined up to one of the following suction paths: ▪ CST SUCT VLV 13MOV-18 open for suction from CSTs ▪ The following valves open for suction from torus: • INBD TORUS SUCT 13MOV-41 • OUTBD TORUS SUCT 13MOV-39 o Start VAC PMP 13P-3	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
Note: RCIC will trip approximately one minute after start. **Role Play:** If dispatched to investigate RCIC trip, wait 2 minutes, then report that there appears to be damage to the RCIC trip/throttle valve, 13HOV-1. **Note:** Condensate Booster pumps will be capable of injection to the Reactor once Reactor pressure is reduced to approximately 700 psig.	BOP cont.	• Start RCIC per OP-19 posted attachment (cont.): o Open OIL CLR WTR SUPP 13MOV-132 o Perform the following without unnecessary delay: ▪ Open TURB STM SUPP VLV 13MOV-131 ▪ Open INJ VLV 13MOV-21 • Recognize / report trip of RCIC • Recognize / report trip of CRD pump • May attempt to start standby CRD pump o Recognize / report trip of 2nd CRD pump • May attempt to initiate SLC o Recognize / report failure of SLC pumps to start • Control Reactor water level 180 to 200" using Condensate Booster pumps	SAT / UNSAT / NA

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS / EVALUATION
	ATC / BOP	• As time permits, verify isolations per AOP-15 • May initiate Torus Cooling per OP-13B posted attachment: o Ensure at least one of the RHR pumps is running o Open RHR TEST TORUS CLG & SPRAY 10MOV-39A(B) o Throttle RHR TEST & TORUS CLG 10MOV-34A(B) to establish desired/flow o WHEN RHR Loop A(B) flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16B o Establish RHRSW flow and temperature control • May initiate RHRSW per OP-13C posted attachment: o Start one of the RHRSW pumps o Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89 A(B) to establish 2500 to 4000 gpm o Start the second RHRSW pump if desired o Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89 A(B) to establish 2500 to 4000 gpm per RHRSW pump o Close HX A(B) BYP VLV 10MOV-66 A(B)	SAT / UNSAT / NA

Termination Criteria:

- All control rods are inserted.
- Reactor water level is being controlled above 0".

Shift Turnover

The Plant is operating at approximately 65% power.

Circulation Water pump C is ready to be returned to service following maintenance.

When you take the shift:

1. Start Circulating Water pump C per OP-4 section D.17. The procedure is in progress up to step D.17.3.e.
2. Then, raise Reactor power using Recirculation flow per the provided reactivity instruction. Stop at approximately 75% power for further Reactor Engineering instructions.

Reactivity/monitoring Steps – (site specific control rod movement control sheet format is to be used)

EN-RE-215 Attach 9.4

Power Ascension Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Raise **power** to 75% RTP	-	-	-	RWR	NA	-	Target rate = 1% per minute
	2	Wait 5 minutes, then demand 3D Monicore case	-	-	-	-	-	-	

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

CONTROL ROOM OPERATOR

Reactivity/monitoring Steps – (site specific control rod movement control sheet format is to be used)

Power Ascension
Today

EN-RE-215 Attach 9.4 **Page 1 of 1**

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Raise **power** to 75% RTP	-	-	-	RWR	NA	-	Target rate = 1% per minute
	2	Wait 5 minutes, then demand 3D Monicore case	-	-	-	-	-	-	

Prepared By: Joe Allen
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INDEPENDENT VERIFIER