Training Id: **2024 NRC Admin RO COO1** Revision: **0.0**

Title: **N1-ST-D0 DAILY CHECKS (Partial)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	02/15/2024
Validated By	Ken Graham	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 10 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. NUREG 1123, 2.1.7 (4.4)
2. N1-ST-DO, Daily Checks

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to record and interpret plant surveillance data and identify inoperable equipment. Control room RPV water level readings are taken for N1-ST-DO. Out of spec readings and inoperable equipment are identified by the operator.

2. Task Information:

   a. NS-REL-01001, Perform System Surveillances.

   b. K/A 2.1.19 (3.9)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Simulator

5. JPM Setup (if required)

   a. Provide copies of N1-ST-DO
   b. Initialize simulator to IC-239
   c. Plant is operating at approximately 15% power
   d. Verify the following overrides are set
      1) **AO-523**, 1F3/36-09, FINAL = 73.00
      2) **AO-524**, 1F3/36-10, FINAL = 75.00
      3) **AO-552**, 1F3/ID59A, FINAL = 68.00 *(GEMAC Channel 11)*
      4) **AO-554**, 1F9/ID59B, FINAL = 76.00 *(GEMAC Channel 12)*
      5) **AO-1125**, 6K27A/1D59C, FINAL = 68.00 *(RPV Level Indication on K-panel)*

6) **AO-929**, 1E9/1D59D, FINAL = 68.00 *(RPV Level indication on E-console)*
7) **AO=568**, 1F14/1D14 PEN 2, FINAL = 68.00 *(RPV Level Trend Recorder on F=panel)*

e. Take the simulator to run, verify plant parameters, then return simulator to freeze
f. Verify average Drywell temperature is less than 130°F
g. Verify total recirculation flow is 38 Mlbm/hr
h. Verify FWLC is selected to column 11
i. Turn off PI monitor
j. Ensure a calculator is available.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is operating at approximately 15% power • N1-ST-DO Daily Checks are in progress • Another operator will perform independent verifications once section 6.4.2 is complete • The plant process computer is NOT available **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, complete N1-ST-DO steps 6.4.2.1 through 6.4.2.10. When completed, report findings and provide completed sections to SRO.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure. **Note:** Completed N1-ST-DO sections are attached as JPM key. Small differences in recorded values may occur due to instrument interpolation.	P	SAT / UNSAT **STD:** N1-ST-DO sections 6.4.2 obtained. Remainder of procedure referenced if necessary.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
3.	Record Reactor Water Level Low-Low alarm status **Note:** Step 6.4.2.2 is N/A due to no alarms present.	P	SAT / UNSAT **STD:** Determines no reactor water level low-low alarms are present. Marks alarms clear for step 6.4.2.1 and N/A for step 6.4.2.2.
4.	Records Feedwater Level Column and Reactor Pressure Column selection **Note:** Step 6.4.2.5 is N/A due to no level or pressure column locked out.	P	SAT / UNSAT **STD:** Determines Channel 11 selected for both Feedwater Level and Reactor Pressure. Marks Channel 11 on steps 6.4.2.3 and 6.4.2.4. Determines no columns are locked out and marks 6.4.2.5 N/A.
5.	Records vessel level indications and total recirculation flow **Note:** Small differences in recorded values may occur due to instrument interpolation.	P	SAT / UNSAT **STD:** Determines multiple reactor water level indications and total recirculation flow in accordance with step 6.4.2.6.
6.	Calculates Yarway indicators LI-36-09 and LI-36-10 variance **Note:** Small differences in recorded values may occur due to instrument interpolation.	P	SAT / UNSAT **STD:** Determines Yarway indication variance in accordance with step 6.4.2.6.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
7.	Verifies Yarway indicators LI-36-09 and LI-36-10 RPV level indication is less than 10 inches **Note:** Small differences in recorded values may occur due to instrument interpolation. However, grossly inaccurate interpolation would be required to determine the Yarway indicators inoperable.	P	***PASS / FAIL** **STD:** Determines Yarway indication variance is less than 10 inches in accordance with step 6.4.2.8.
8.	Calculates GEMAC Channel 11 and Channel 12 level meter variance **Note:** Small differences in recorded values may occur due to instrument interpolation.	P	SAT / UNSAT **STD:** Determines GEMAC indication variance in accordance with step 6.4.2.9.
9.	Determines GEMAC 11/12 variance as a function of total recirculation flow **Note:** Small differences in recorded values may occur due to instrument interpolation. However, grossly inaccurate interpolation would be required to determine the GEMAC indicators inoperable.	P	***PASS / FAIL** **STD:** Determines GEMAC indication variance is greater than 6 inches at the given total recirculation flow in step 6.4.2.10
10.	Determines and checks the box INOP RANGE, Declare GEMAC 11 AND/OR 12 INOP.	P	***PASS / FAIL** **STD:** Checks the box for "INOP Range" in step 6.4.2.10
11.	Provides completed sections to SRO. Notifies SRO GEMAC Channel 11/12 variance readings are out of specification.	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Control room readings are taken for Reactor Water Level checks per N1-ST-DO, Section 6.4, and determines that Yarway indications are within variance and GEMAC indications at the given recirculation flow in in the INOP RANGE.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is operating at approximately 15% power. • N1-ST-DO, Daily Checks, is in progress. • Another operator will perform independent verifications once section 6.4.2 is complete. • The plant process computer is NOT available.

INITIATING CUE	**(Operators Name)**, complete N1-ST-DO steps 6.4.2.1 through 6.4.2.10. When completed, report findings and provide completed sections to SRO.

6.4. **IF** an approved SOMS printout has **not** been attached,
THEN RECORD the following Plant Data,
OTHERWISE MARK these steps N/A:

6.4.1. **INDICATE** Mode Switch Position:

- [X] RUN
- [ ] STARTUP
- [ ] SHUTDOWN
- [ ] REFUEL

PMR

6.4.2. Control Room Reactor Water Level Checks: **[T/S]**

1. **RECORD** Reactor Water Level Low-Low Alarm status:

   - [ ] Alarm(s) In
   - [X] Alarm(s) Clear

   PMR

2. **IF** Low-Low Level Alarms are present,
   THEN RECORD reason in Remarks,
   OTHERWISE MARK this step N/A.

   N/A

3. **RECORD** Feedwater Level Column selection:

   - [X] 11
   - [ ] 12

   PMR

4. **RECORD** Reactor Pressure Column selection:

   - [X] 11
   - [ ] 12

   PMR

5. **IF** any Level Column
   OR Pressure Column is locked out,
   THEN RECORD reason in Remarks,
   OTHERWISE MARK this step N/A.

   N/A

6.4.2 (Continued)

6. **RECORD** the following levels:

- E Panel Vessel Level Indicator:

  68 inches
- K Panel Vessel Level Indicator:

  68 inches
- K Panel Flange Level Indicator:

  - 3 feet
- Reactor Vessel Level Recorder:

  68 inches
- Wide Range Level Indicator:

  5 feet
- Ch 11 GEMAC Level Column ID59A:

  68
- Ch 12 GEMAC Level Column ID59B:

  76
- Total Recirc Flow: 38 Mlb/Hr
- Yarway RPS Level Column LI-36-09:

  74 inches
- Yarway RPS Level Column LI-36-10:

  76 inches

PMR

6.4.2 (Continued)

NOTE

Yarway RPS Level Column references: 3.6.2a(4), 4.6.2a(4), 3.6.2k(1), 4.6.2k(1), Operability Evaluation OpEval# ENGDOC-21-000006 from IR 04415668.

7. **CALCULATE** Yarway indicators LI-36-09 **AND** LI-36-10 variance:

74 inches (LI-36-09) – 76 inches (LI-36-10)

= - 2 inches variance

PMR

IV

8. **IF** Yarway indicators LI-36-09 and LI-36-10 RPV level indication deviation is greater than 10 inches, **THEN PERFORM** the following, **OTHERWISE MARK** these steps N/A:

- **REVIEW** previous readings for the instrument(s). ..... ☐
- **IF** a single reading is the cause for the variance value being greater than 10 inches, **THEN VERIFY** that reading, **AND IF** variance is still greater than 10 inches, **THEN CONSIDER** the indicator OPERABLE **AND GENERATE** an IR to have the calibration checked, **OTHERWISE MARK** this step N/A. ..... ☐
- **IF** variance is grossly greater than 10 inches, **THEN CONSIDER** the indicator INOPERABLE, **OTHERWISE MARK** this step N/A. ..... ☐
- **INITIATE** the required Technical Specification actions (AR 02031163). ..... ☐
- **SEE** 2.4.9 TS Guidance for Level Indication Deviation for additional guidance. ..... ☐

N/A

6.4.2 (Continued)

9. **CALCULATE** Ch 12
AND Ch 11 GEMAC Level Meter variance:

76 inches (Ch 12) – 68 inches (Ch 11)

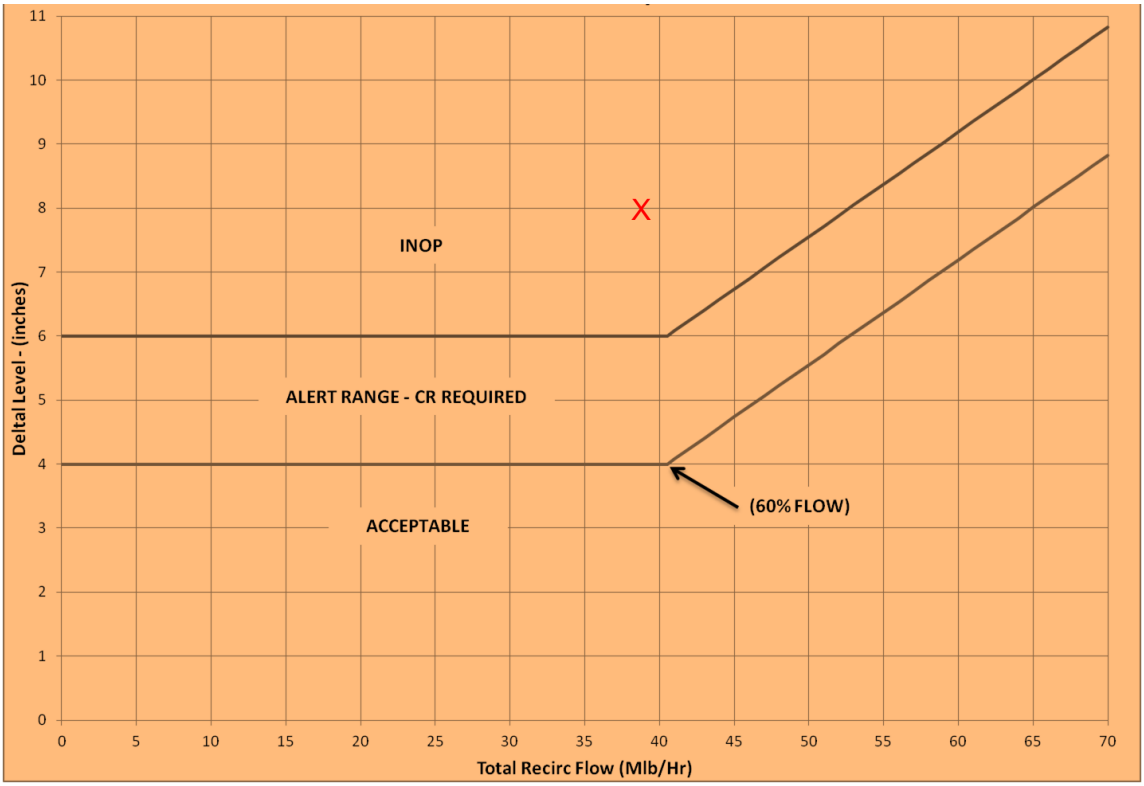
= 8 inches variance PMR

IV

NOTE

Ignore negative sign, if any.

10. **DETERMINE** GEMAC 11/12 Variance as a function of Total Recirc Flow:



AND CHECK applicable result:

☐ **ACCEPTABLE** Range, **no** action required.

☒ **INOP** Range,
DECLARE GEMAC 11 **AND/OR** 12 INOP

☐ **ALERT** Range,
GENERATE IR for Engineering Evaluation. PMR

6.4.2 (Continued)

11. **IF** GEMAC 11/12 Variance as a function of Total Recirc Flow is **not** acceptable,
THEN PERFORM the following,
OTHERWISE MARK these steps N/A:

- **REVIEW** previous readings for the instrument(s). ..... ☐
- **IF** a single reading is the cause for the variance value being greater than required,
THEN VERIFY that reading,
AND IF variance is still greater required,
THEN CONSIDER the indicator OPERABLE
AND GENERATE an IR to have the calibration checked,
OTHERWISE MARK this step N/A. ..... ☐
- **IF** variance is grossly greater than required,
THEN CONSIDER the indicator INOPERABLE,
OTHERWISE MARK this step N/A. ..... ☐
- **INITIATE** the required Technical Specification actions (AR 02031163). ..... ☐
- **SEE** 2.4.9 TS Guidance for Level Indication Deviation for additional guidance..... ☐ _____

Constellation

Training Id: **2024 NRC Admin RO COO2** Revision: **0.0**

Title: **Perform Heat-up Rate Determination**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	2/15/2024
Validated By	Tim Heagerty	3/29/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-43A, Plant Startup

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to record and calculate heat-up rate data. An out of spec heat-up rate will be identified.

2. Task Information:

   a. K/A 2.1.7 (4.4)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   1. Prepare a picture of RRP 11 suction temperature gauge indicating approximately 529°F.
   2. Provide each candidate a calculator.
   3. Prepare N1-OP-43A Attachment 17 with the following data (next page):

Date/Time	RRP Suction Temp	ΔT/15 min	ΔT/15 min Limits	Heatup Rate Limits
Today 0900	350	N/A	N/A	N/A
Today 0915	370	20	SAT	N/A
Today 0930	380	10	SAT	N/A
Today 0945	400	20	SAT	N/A
Today 1000	415	15	SAT	SAT
Today 1015	435	20	SAT	SAT
Today 1030	470			
Today 1045	490			
Today 1100				

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • A plant startup is in progress. • Current time is 1100 Today. • N1-OP-43A Attachment 17 is provided with heat-up data for the last hour. • All RRP suction temperature readings have been taken from Recirc loop 11. • The picture provided below shows the current Recirc loop 11 suction temperature indication **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, obtain the time 1100 reading for N1-OP-43A Attachment 17, then complete the attachment for times 1030, 1045, and 1100. When completed, report findings and provide completed sections.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure. **Note:** A completed N1-OP-43A Attachment 17 is provided as a JPM key. Small differences in recorded values may occur due to instrument interpolation.	P	SAT / UNSAT **STD:** N1-ST-43A attachment 17 obtained, rest of procedure referenced if necessary.
3.	Record current RRP suction temperature	P	*** PASS / FAIL** **STD:** Records current RRP suction temperature (517°F)

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Calculate and record ΔT/15 min for times 1030-1100	P	SAT / UNSAT **STD:** Calculates and records ΔT/15 min: 1030: 470°F - 435°F = 35°F 1045: 490°F - 470°F = 20°F 1100: 517°F - 490°F = 27°F
5.	Analyze and record ΔT Limits for ΔT/15 min	P	*** PASS / FAIL** **STD:** Determines UNSAT for 1030
		P	*** PASS / FAIL** **STD:** *Determines SAT for 1045*
		P	*** PASS / FAIL** **STD:** *Determines UNSAT for 1100*
6.	Calculate hourly ΔTs for times 1030-1100 **Note:** There is no column on N1-OP-43A Attachment 17 to record this step. It is provided to document an intermediate step taken to arrive at JPM Step #7. If the candidate does not provide these intermediate values, the JPM step may be graded "NA".	P	SAT / UNSAT / NA **STD:** Calculates ΔTs: 1030: 470°F - 380°F = 90°F 1045: 490°F - 400°F = 90°F 1100: 517°F - 415°F = 102°F
7.	Analyze and record Heat-up Rate Limits for 100°F/hr limits.	P	*** PASS / FAIL** **STD:** Determines SAT for 1030

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
		P	*** PASS / FAIL** **STD:** Determines SAT for 1045
		P	*** PASS / FAIL** **STD:** Determines UNSAT for 1100
8.	Provides completed attachment to examiner and informs of issues.	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Current plant heat-up data taken per N1-OP-43A Attachment 17. Current and past heat-up rates calculated. Candidate correctly determines the current RRP 11 suction temperature and calculates heat up rates in accordance with N1-OP-43A. Candidate determines 100°F/hr limit is satisfactory for 1030 and 1045, and is unsatisfactory at 1100. Candidate also determines Delta T 15 limit is satisfactory for 1045 and unsatisfactory for 1030 and 1100.

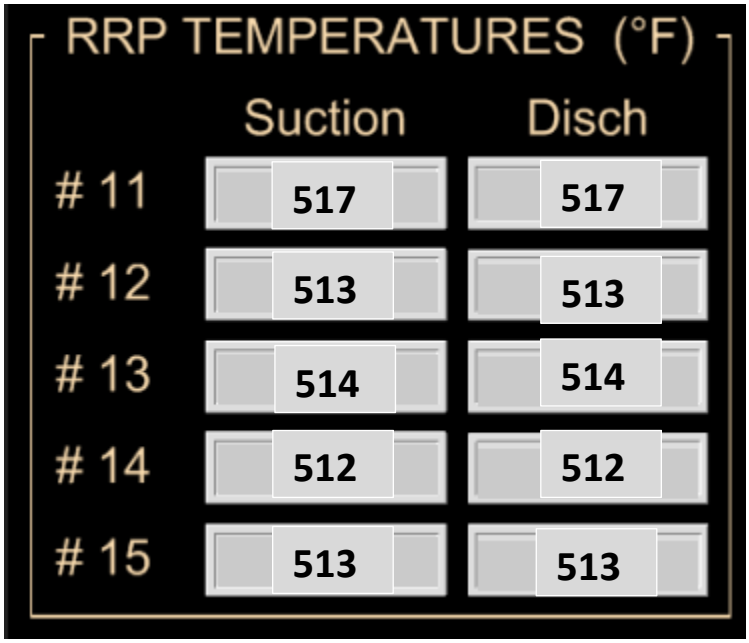
STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • A plant startup is in progress. • Current time is 1100 Today. • N1-OP-43A Attachment 17 is provided with heat-up data for the last hour. • All RRP suction temperature readings have been taken from Recirc loop 11. • The picture provided below shows the current Recirc loop 11 suction temperature indication.

INITIATING CUE	**(Operators Name)**, obtain the time 1100 reading for N1-OP-43A Attachment 17, then complete the attachment for times 1030, 1045, and 1100. When completed, report findings and provide completed sections.

See RRP Temperature attachment on the following page.


RRP TEMPERATURES (°F)
Suction
Disch
11
517
517
12
513
513
13
514
514
14
512
512
15
513
513

Attachment 17, Heatup Rate Monitoring

Date/Time (T+15 min)	RRP Suction Temp (°F)	ΔT/15 min[I]	ΔT Limits ΔT/15 min ≤25 °F	Heatup Rate Limits[H] (PTLR) ≤100 °F/hr	Init.	Init (SRO)
Today 0900	350	N/A	N/A	N/A	RO	SRO
Today 0915	370	20	SAT	N/A	RO	SRO
Today 0930	380	10	SAT	N/A	RO	SRO
Today 0945	400	20	SAT	N/A	RO	SRO
Today 1000	415	15	SAT	SAT	RO	SRO
Today 1015	435	20	SAT	SAT	RO	SRO
Today 1030	470					
Today 1045	490					
Today 1100						

[H] Heatup Rate Limitations are performed on an hour ΔT.

[I] ΔT/15 min is calculated by subtracting the previous temperature from the current temperature.

Constellation

Training Id: **2024 NRC Admin RO EC** Revision: **0.0**

Title: **Develop Clearance – RBCLC Pump 13**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/24/2024
Validated By	Ken Graham	3/29/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 25 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. EWDs C-19436-C Sheets 1 and 3
2. P&ID C-18022-C Sheet 2
3. OP-AA-109-101-F-07 Worker Tagout (WTO) Form
4. OP-AA-109-101 Personnel and Equipment Tagout Process
5. N1-OP-11 Reactor Building Closed Loop Cooling System
6. NUREG 1123 2.2.15 (3.9)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to develop a tagout in accordance with OP-AA-109-101 Personnel and Equipment Tagout Process.

2. Task Information:

   a. K/A 2.2.15 (3.9)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Verify copies of the following reference material provided to the candidate:

      1) EWD C-19436-C Sheets 1 and 3

      2) P&ID C-18022-C Sheet 2

      3) OP-AA-109-101 Personnel and Equipment Tagout Process

      4) OP-AA-109-101-F-07 Worker Tagout (WTO) Form

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is operating at 100% power • RBCLC Pumps 11 and 12 are operating • RBCLC Pump 13 is shutdown • Maintenance is required to replace RBCLC Pump 13 shaft seal under work order C91234567 • The pressure switch is not required to be tagged out for this maintenance • eSOMS is unavailable • Operations has determined that the WTO process is appropriate for this task **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, identify the components required to be tagged for RBCLC Pump 13 shaft seal replacement. Record the required components and their tagged positions starting on page 2 of OP-AA-109-101-F-07 Worker Tagout (WTO) Form.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure. **Note:** OP-AA-109-101 provides guidance on tagging standards and isolations. If eSOMS is unavailable, then the Worker Tagout (WTO) process shall be used per OP-AA-109-101-F07.	P	SAT / UNSAT **STD:** OP-AA-109-101 obtained and referenced as necessary.
3.	Obtains and references appropriate drawings and/or procedures to determine appropriate isolations.	P	SAT / UNSAT **STD:** P&ID C-18022-C sheet 2 and EWD C-19436-C sheets 1 and 3 referenced as necessary.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Determines 70-03 Reactor Building Closed Loop Cooling Pump 13 Control Switch INFO/CAUTION tagged in PULL-TO-LOCK position **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary.	P	SAT / UNSAT **STD:** In accordance with OP-AA-109-101.
5.	Determines 70-03 Reactor Building Closed Loop Cooling Pump 13 motor breaker TRIP fuses tagged in PULLED or INSTALLED IN OFF position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary. Candidate may elect any type of tag (if any) for the trip fuses since they do not provide any protection for the work to be performed. If the operator does not place a tag on this component, mark this step as N/A.	P	SAT / UNSAT / N/A **STD:** In accordance with OP-AA-109-101.
6.	Determines 70-03 Reactor Building Closed Loop Cooling Pump 13 motor breaker CLOSE fuses tagged in PULLED or INSTALLED IN OFF position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary. Candidate may elect any type of tag (if any) for the close fuses since they do not provide any protection for the work to be performed. If the operator does not place a tag on this component, mark this step as N/A.	P	SAT / UNSAT / N/A **STD:** In accordance with OP-AA-109-101.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
7.	Determines 70-03 Reactor Building Closed Loop Cooling Pump 13 motor breaker DANGER tagged in RACKED OUT or DISCONNECTED position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary.	p	***PASS / FAIL** **STD:** In accordance with OP-AA-109-101.
8.	Determines 70-09, BV – 13 RBCLC Pump Discharge DANGER tagged in CLOSED position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary.	P	***PASS / FAIL** **STD:** In accordance with OP-AA-109-101.
9.	Determines 70-141, BV – 13 RBCLC Pump Suction DANGER tagged in CLOSED position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary.	P	***PASS / FAIL** **STD:** In accordance with OP-AA-109-101.
10.	Determines 70-500, Drain – 13 RBCLC Pump tagged in OPEN position. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary. Candidate may elect any type of tag (if any) for the drain valve since it does not provide any protection for the work to be performed.	P	SAT / UNSAT / N/A **STD:** In accordance with OP-AA-109-101.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
11.	Determines 70-501, Vent – 13 RBCLC Pump tagged in OPEN position and UNCAPPED. **Note:** Due to unavailability of eSOMS and other electronic databases, exact component IDs, names, and tagging positions may vary. Candidate may elect any type of tag (if any) for the vent valve since it does not provide any protection for the work to be performed.	P	SAT / UNSAT / N/A **STD:** In accordance with OP-AA-109-101.
12.	Provides completed Worker Tagout (WTO) Form to examiner	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	The following isolations for Reactor Building Closed Loop Cooling Pump 13 identified and recorded on OP-AA-109-101-F-07: 70-03, RBCLC Pump Breaker danger tagged RACKED OUT or DISCONNECTED 70-09, BV – 13 RBCLC Pump Discharge danger tagged CLOSED 70-141, BV – 13 RBCLC Pump Suction danger tagged CLOSED

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is operating at 100% power • RBCLC Pumps 11 and 12 are operating • RBCLC Pump 13 is shutdown • Maintenance is required to replace RBCLC Pump 13 shaft seal under work order C91234567 • The pressure switch is not required to be tagged out for this maintenance • eSOMS is unavailable • Operations has determined that the WTO process is appropriate for this task

INITIATING CUE	**(Operators Name)**, identify the components required to be tagged for RBCLC Pump 13 shaft seal replacement. Record the required components and their tagged positions starting on page 2 of OP-AA-109-101-F-07 Worker Tagout (WTO) Form.

Constellation

Training Id: **2024 NRC Admin RO RC** Revision: **0.0**

Title: **Application of Radiation Exposure Limits – Drywell**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	2/13/2024
Validated By	Ken Graham	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. RP-AA-203
2. NISP-RP-002

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to evaluate radiological survey data against exposure limits in order to determine availability to perform operator tasks.

2. Task Information:

   a. S-RAP-RPP0703-00002, Authorize extension of emergency exposure limits

   b. K/A 2.3.12 (3.2/3.7), Knowledge of radiation exposure limits under normal or emergency conditions.

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide a copy of the Drywell survey map for each operator performing the JPM.
   b. Provide a copy of RP-AA-203 and NISP-RP-002 to each candidate.
   c. Ensure calculators are available for the applicant's use.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is shut down for a refueling outage • All Reactor Recirculation Pumps are secured • All Reactor Recirculation Pump discharge valves are open • The discharge valves for Reactor Recirculation Pumps 11, 12, and 13 require manual closure • All dose rates were taken at the Recirculation Pump Discharge Valve Handwheels • Assume no radiation exposure is received in transit to and from the job location **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, given supporting information, determine the dose required for each discharge valve closure. The discharge valves are to be closed in the order stated. Determine which discharge valves may be closed, if any, without exceeding your administrative dose limit. Your current dose is 1800 mrem.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Using the provided survey map, calculate the respective dose for each discharge valve closure as follows:		
2a.	Dose for Reactor Recirculation Pump 11 discharge valve: (1/3 hour x 150 mrem/hr) = 50 mrem	P	*** PASS / FAIL** **STD:** Determines dose for closing discharge valve 11 is 50 mrem.
2b.	Dose for Reactor Recirculation Pump 12 discharge valve: (1/3 hour x 300 mrem/hr) = 100 mrem	P	*** PASS / FAIL** **STD:** Determines dose for closing discharge valve 12 is 100 mrem.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
2c.	Dose for Reactor Recirculation Pump 13 discharge valve: (1/3 hour x 225 mrem/hr) = 75 mrem	P	*** PASS / FAIL** **STD:** Determines dose for closing discharge valve 13 is 75 mrem.
3.	Determines remaining dose the operator is allowed to receive. 2000 mrem – 1800 mrem = 200 mrem	P	SAT / UNSAT **STD:** Determines 200 mrem remain prior to exceeding administrative dose limits.
4.	Determines which jobs can be completed without exceeding administrative dose limits. **Note**: The applicant may choose a different combination of valves to close if they do not go by the order of valves provided in the initiating cue. The applicant can still get a PASS for this step if they chose any of the following combination of valves to close: 1) Discharge Valves 11 and 12 2) Discharge Valves 12 and 13 3) Discharge Valves 11 and 13 **Any of the above listed combinations are acceptable to pass this step of the JPM.**	P	*** PASS / FAIL** **STD:** Determine that discharge valves for Reactor Recirculation Pumps 11 and 12 can be closed without exceeding the administrative dose limit. Discharge Valve 11 – 50 mrem Discharge Valve 12 – 100 mrem Discharge Valve 13 – 75 mrem Total dose for all three discharge valves would be 225 mrem. The operator can only close discharge valves 11 and 12 with exceeding the administrative dose limit.
5.	Provides completed handout to examiner	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Calculates the dose for each job and determines that only TWO Discharge valves can be closed without exceeding the administrative dose limit of 2000 mrem/yr. Any combination of TWO pumps are acceptable, (11&12, 12&13, OR 11&13)

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is shut down for a refueling outage • All Reactor Recirculation Pumps are secured • All Reactor Recirculation Pump discharge valves are open • The discharge valves for Reactor Recirculation Pumps 11, 12, and 13 require manual closure • Assume no radiation exposure is received in transit to and from the job location

INITIATING CUE	**(Operators Name)**, given supporting information, determine the dose required for each discharge valve closure. The discharge valves are to be closed in the order stated. Determine which discharge valves may be closed, if any, without exceeding your administrative dose limit. Your current dose is 1800 mrem.

1. **Reactor Recirculation Pump 11 Discharge Valve**
    a. Total time for discharge valve closure: 20 minutes
    b. Determine dose required for valve closure:

2. **Reactor Recirculation Pump 12 Discharge Valve**
    a. Total time for discharge valve closure: 20 minutes
    b. Determine dose required for valve closure:

3. **Reactor Recirculation Pump 13 Discharge Valve**
    a. Total time for discharge valve closure: 20 minutes
    b. Determine dose required for valve closure:

4. **Determine which discharge valves may be closed without exceeding administrative dose limit:**

Constellation. **RADIOLOGICAL SURVEY MAP**

DATE	TIME	RX POWER	H2 SCFM
Today	0600	U1[0.00] U2[100.00]%	0

STATION	UNIT	BLG	ELEV	ROOM #	MAP #
NMP	1	Drywell	237	N/A	1DW237

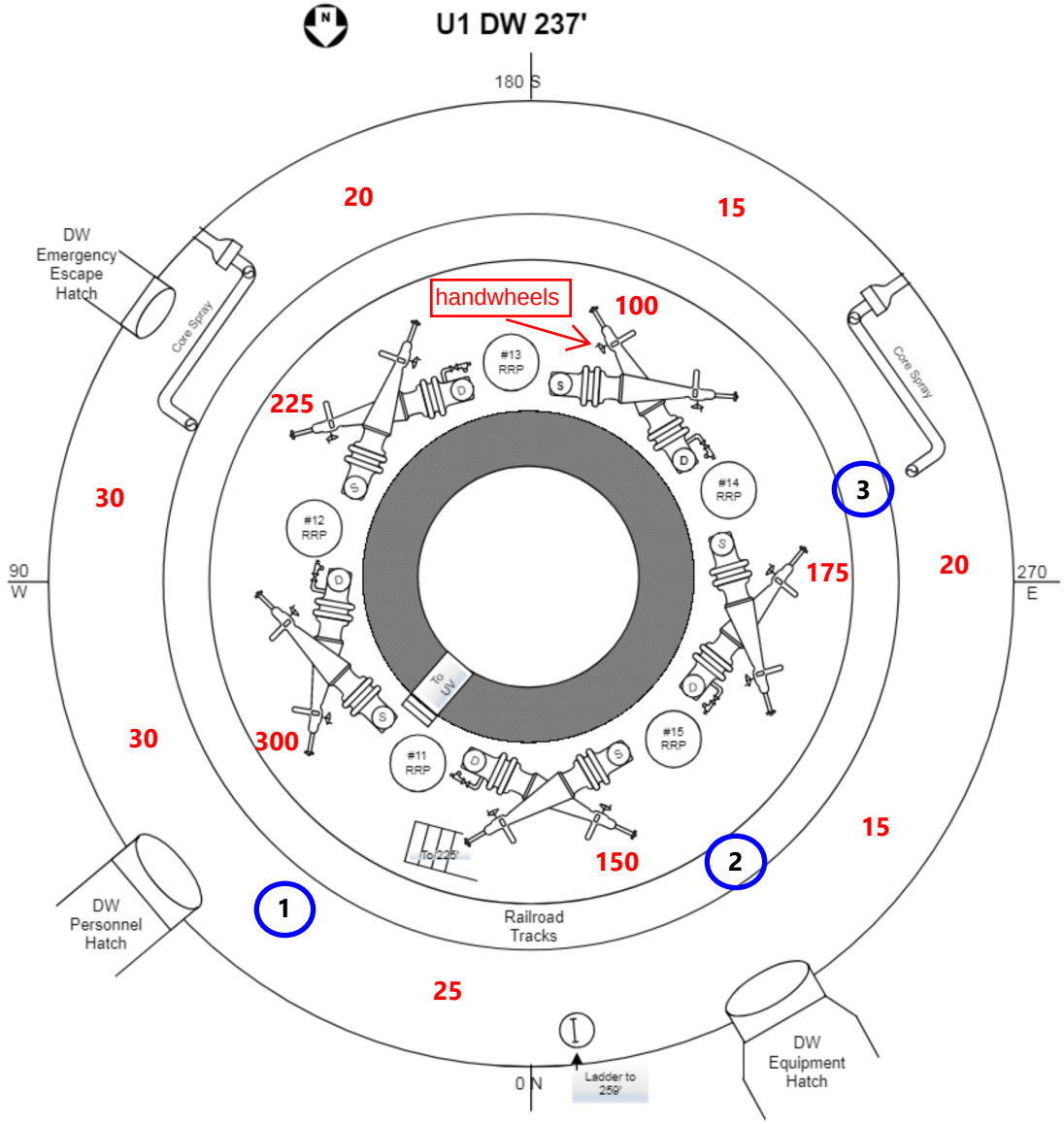
AREA DESCRIPTION COMPONENT: Open Area

RADIATION AREA RANGE: 10 TO 900 mRem/hr

AIRBORNE RESULTS: < 0.02 UID (Unidentified DAC)

SURVEY #: 2024-999999

*Unless otherwise noted on the survey, all radiation dose rates are in mRem/hr and contamination units are in dpm/100cm2 (beta/gamma contamination)



NOTES: N/A

CONTAMINATION SURVEY UNIT KEY: LAS dpm/ LAS | LAS ncpm/LAS | mRad/hr/100cm2 | dpm/100cm2

#	LOCATION/AREA	LEVEL	UNITS	#	LOCATION/AREA	LEVEL	UNITS	#	LOCATION/AREA	LEVEL	UNITS
1	Grating	5k		2	Grating	10k		3	Grating	20k	

ALPHA CONTAMINATION RESULTS

BG/A Ratio Average:

#	DPM / 100CM2	RATIO (B&G:A)
1	< 6	> 30000

ELECTRON CAPTURE RESULTS

#	LEVEL	UNIT

SURVEYORS: Radiation Protection

SURVEY INSTRUMENT INFORMATION

INST. TYPE	INST. NUMBER	CAL DUE	MDA*

* INSTRUMENT MDA IS IN DPM UNLESS OTHERWISE SPECIFIED

SURVEY #	APPROVED BY	EMPLOYEE ID #
2024-999999	RP Supervisor	999999

DATE	TIME	SURVEY TYPE
Today	0600	Initial

RWP #	WO #	SURVEY DOSE
NM-1-24-9999	N/A	12.0

TEMPLATE #	DESCRIPTION
1DW237	Open Area

NEXT DUE DATE	RX POWER	H2 SCFM
N/A	U1[0.00] U2[100.00]%	0

PEER CHECK BY	EMPLOYEE ID #	TIME
Radiation Protection	111999	0630

CORRECTION FOR SURVEY #
N/A

SURVEYOR NAME	EMPLOYEE ID #
Radiation Protection	191919

NOTES:

N/A

COMMON POSTINGS, ABBREVIATIONS & SYMBOLS: (VHRA)-Very High Rad Area (LHRA)-Locked High Rad Area (HRA)-High Rad Area (KO)-Keep Out (RA)-Radiation Area (RCA)-Radiologically Controlled Area (RM)-Radioactive Materials (ARA)-Airborne Radioactivity Area (CA)-Contaminated Area (HCA)-High Contamination Area (DRPBA)-DRP Buffer Area (L2AA)-Level 2 Alpha Area (L3AA)-Level 3 Alpha Area (RPB)- Radiation Protection Brief Required For Entry (NMR)-Neutron Monitoring Required (RPE)- Radiation Protection Escort Required For Entry (RWP)- Radiation Work Permit Required For Entry (DRFE)-Dosimetry Required For Entry (CRP7)-Contact RP Prior To Working Above 7FT (NEDS)-No Eating Drinking Smoking (RPSRPTE)- Radiation Protection Survey Required Prior To Entry (ND)-Non Detectable (NDB)-No Detectable Beta (t:#)-Telemetry (#)-Gamma Dose Rate(mRem/hr) (#B)-Beta Dose Rate(mRad/hr) (#N)-Neutron Dose Rate(mRem/hr) (*#/#)-Dose Rate @ Contact/30cm (H|C|W|K)-Head|Chest|Waist|Knee (K)-Kilo x 1000 (LAS)-Large Area Smear (DRP)-Discrete Radioactive Particle (DPM)-Disintegrations per Minute (NCPM)-Net Counts per Minute (#)-Smear Location (.....)-Radiological Boundary (SOP)-Step Off Pad (△)-Air Sample Location

Training Id: **2024 NRC Admin SRO COO1** Revision: **0.0**

Title: **Reactivate SRO Licenses In Accordance With OP-AA-105-102**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/26/2024
Validated By	Branden Dempsey	04/01/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. NUREG 1123, 2.1.4 (3.8)
2. OP-AA-105-102 NRC Active License Maintenance

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to evaluate license reactivation documentation.

2. Task Information:

   a. S-ODP-TQS0101-00002, Reactivate an inactive license

   b. K/A 2.1.4 (3.8), Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide copy of OP-AA-105-102
   b. If multiple operators are going to perform the JPM at the same time, ensure each operator has a copy of OP-AA-105-102.
   c. Provide marked up copies of OP-AA-105-102, attachment 2.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • Due to recent SRO attrition, several SRO licenses are being reactivated. • Two inactive license holders are completing the requirements to reactivate their licenses. • OP-AA-105-102, Attachment 2, Reactivation of License Log is completed up to the Shift Manager review. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, perform the Shift Manager review of OP-AA-105-102, Attachment 2, Reactivation of License Log, and return it to me.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure.	P	SAT / UNSAT **STD:** OP-AA-105-102 obtained
3.	Reviews shift hours for SRO #1	P	SAT / UNSAT **STD:** Reviews OP-AA-105-102 attachment 2
4.	Determines SRO #1 does not meet the requirements for license reactivation.	P	***PASS / FAIL** **STD:** Recognize that not all required shift hours were completed in the same calendar quarter, as required in step 4.2.2.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
5.	Reviews shift hours for SRO #2	P	SAT / UNSAT **STD:** Reviews OP-AA-105-102 attachment 2
6.	Determines SRO #2 does not meet the requirements for license reactivation.	P	***PASS / FAIL** **STD:** Recognize that not all required shift hours were completed in a shift position required by technical specifications.
9.	Reports SRO reactivation status	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Shift Manager review of attachment 2, Reactivation of License Log, is complete recognizing neither SRO meets the requirements for license reactivation

STOP TIME	

Answer Key (DO NOT PROVIDE TO CANDIDATES)

SRO	Stand Watch (Circle One)	Explanation, If needed
SRO #1	**Yes / No**	Not all required shift hours were completed in the same calendar quarter, as required in step 4.2.2.
SRO #2	**Yes / No**	Not all required shift hours were completed in a shift position required by technical specifications per Op-AA-105-102, Attachment 1.

JPM Handout

INITIAL CONDITIONS	Given: • Due to recent SRO attrition, several SRO licenses are being reactivated. • Two inactive license holders are completing the requirements to reactivate their licenses. • OP-AA-105-102, Attachment 2, Reactivation of License Log is completed up to the Shift Manager review.

INITIATING CUE	**(Operators Name)**, based on Shift Manager review of OP-AA-105-102, Attachment 2, determine if SRO #1 and SRO #2 can stand watch on the upcoming shift. Provide explanation, if needed. Document your answer below.

SRO	Stand Watch (Circle One)	Explanation, If needed
SRO #1	**Yes / No**	
SRO #2	**Yes / No**	

Training Id: **2024 NRC Admin SRO COO2** Revision: **0.0**

Title: **Determine Operator Qualifications Using LMS**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/29/2024
Validated By	Brandon Dempsey	4/1/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. NUREG 1123, 2.1.8 (4.1)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the senior operator's ability to evaluate an operator's qualifications to perform specific tasks.

2. Task Information:

   a. NS-FLDSUP-001 – Lead Prejob Briefs for Operator Teams

   b. K/A 2.1.8 (4.1), Ability to coordinate personnel activities outside the control room.

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide copies of LMS printouts for each applicant
   b. Provide copies of OP-AA-109-101

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given:
	• A maintenance activity is being planned.
	• Qualifications need to be verified for the following aspects of the maintenance activity:
	  ○ Write the tagout for a system (which will include disabling fire suppression systems)
	  ○ Accept and Release the tagout
	  ○ Hang/remove tags and align systems in accordance with the tagout
	  ○ Perform duties as the fire watch while the tagout is active
	
	Evaluator: *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, given the LMS sheets and the tasks required, determine which operator(s) is/are qualified to perform the tasks.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtains and reviews the tasks and the LMS sheets and determines who is qualified to perform the tasks as shown on the KEY. **Note**: Applicant can evaluate the operators in any order.	P	SAT / UNSAT **STD:** LMS sheets and task information obtained and reviewed.
2a.	Evaluates RO1	P	***PASS / FAIL** **STD**: Determines RO1 can perform tasks #1, #2, & #3.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
2b.	Evaluates RO2	P	****PASS / FAIL** **STD:** Determines RO2 can perform tasks #1, #3, & #4.
2c.	Evaluates EO1	P	***PASS / FAIL** **STD**: Determines EO1 can perform tasks #3 and #4
2d.	Evaluates EO2	P	***PASS / FAIL** **STD:** Determines EO2 can perform only task #4
9.	Reports qualification status	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Applicant determines which Operators are qualified to perform the tasks using LMS.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given:
	• A maintenance activity is being planned.
	• Qualifications need to be verified for the following aspects of the maintenance activity:
	  ○ Write the tagout for a system (which will include disabling fire suppression systems)
	  ○ Accept and Release the tagout
	  ○ Hang/remove tags and align systems IAW the tagout
	  ○ Perform duties as the fire watch while the tagout is active

INITIATING CUE	**(Operators Name)**, given the LMS sheets and the tasks required, determine which operator is qualified to perform the tasks.

Task Number	**Task Description**
1	Write a tagout for a system (which will include disabling fire suppression systems)
2	Accept and Release the tagout
3	Hang/remove the tags and align the systems IAW the tagout
4	Perform the duties of a fire watch while the tagout is active

Is the Operator Qualified to Perform the Task? (Yes / No)				
Operator	**Task 1**	**Task 2**	**Task 3**	**Task 4**
RO 1				
RO 2				
EO 1				
EO 2				

*******Answer Key*******
Do Not Provide to Applicant

Task Number	Task Description
1	Write a tagout for a system (which will include disabling fire suppression systems) Qualification Required: N-NM-SA-TAG-WRITER-PREPARER
2	Accept and Release the tagout Qualification Required: N-AN-SA-TAG-TO-HOLDER
3	Hang/remove the tags and align the systems IAW the tagout Qualification Required: N-AN-SA-TAG-APPLIER-REMOVER
4	Perform the duties of a fire watch while the tagout is active Qualification Required: N-AN-SA-FIREWATCH

Is the Operator Qualified to Perform the Task? (Yes / No)				
Operator	**Task 1**	**Task 2**	**Task 3**	**Task 4**
RO 1	Yes	Yes	Yes	No
RO 2	Yes	No	Yes	Yes
EO 1	No	No	Yes	Yes
EO 2	No	No	No	Yes

*******Answer Key*******
Do Not Provide to Applicant

Date: Today

Employee ID: 333333

Employee Name: **Equipment Operator 1 (EO 1)**

Legend:

Y = Currently Qualified (will not expire in next 60 days)

O = Currently Qualified (due to expire in 60 days or less)

N = Not Qualified (expired)

(blank)= Qualification Never Assigned

30 Qualifications Found

Page 1 of 2

Qualification ID	Qualification Title	Status	Expiration Date
N-AN-HR-MEDICAL_RESPIRATOR	RESPIRATOR MEDICAL	Y	12/31/2024
N-AN-RP-NGET-1	General Employee Trng Level 1 – EXELON EMPLOYEE (FFD/PAT)	Y	12/31/2024
N-AN-RP-NGET-2	General Employee Trng Level 2 – EXELON EMPLOYEE (FFD/PAT/RWT)	Y	12/31/2024
N-AN-RP-RESP_LEVEL-1_TRAINED	Respiratory Protection Level 1 (Training Only)	Y	12/7/2024
N-NGET-RESP-R	Generic Respiratory Protection (NANTeL)	Y	12/31/2024
N-CE-SA-SAF-ASBESTOS	Asbestos OSHA Training (Northeast Sites: CC, GN, NMP)	O	9/5/2024
N-AN-SA-BLOODBORNE	Bloodborne Pathogens Level 2	Y	12/9/2024
N-AN-SA-CONF-SPC-SUPV	Confined Space Entry Supervisor	Y	
N-AN-SA-CONF-SPC-MONITOR	Confined Space Air Monitoring	Y	
N-AN-SA-ELECTRAL-SAFTY	Electrical Safety	Y	
N-AN-SA-FALL-PROT	Fall Protection	Y	
N-AN-SA-FIREWATCH	Fire Extinguisher-Fire Watch for Hotwork Activities	O	9/5/2024

N-AN-SA-FIRSTAID/CPR/AED	First Aid, CPR. and AED Qualified	O	9/5/2024
N-AN-TQ-OJT_TRAINER	Exelon OJT Trainer	Y	11/31/2024
N-AN-TQ-TPE-JPM-EVALUATOR	Exelon TPE/JPM Evaluator	N	6/31/2024
N-AN-CM-258010	Class 1, 4, and 5 Powered Industrial Truck	Y	2/16/2025
N-AN-CM-258040	Class 6 Powered Industrial Truck	Y	2/16/2025
N-AN-EP-CR-SHIFT-COM	Shift Communicator	Y	12/31/2024
N-NM-OPS-1103-POQUALQ01	NMP1 Equipment Operator Qualification	Y	12/31/2024
N-NM-OPS-S100-LVL100CPT	Operations Shift Level 100 Complete	Y	12/31/2024
N-NM-OPS-SHIFTQUAL-U1-FBL	Fire Brigade Leader Shift Qualification - NMP Unit 1	Y	11/30/2024
N-NM-OPS-SHIFTQUAL-U1-FBM	Fire Brigade Member Shift Qualification - NMP Unit 1	Y	11/30/2024
N-AN-RP-RESP-FIT-SCT3000-MD	Scott AV-3000 Mask Fit Test (Medium)	Y	11/30/2024
N-NM-SA-SAF-SCBA	Self Contained Breathing Apparatus	Y	11/30/2024
N-AN-SY-CRITICAL-GROUP	Critical Group	Y	10/16/2025
N-NM-OPS-S100-HOSTSRVC01	Hostage Survival (CBT)	Y	12/31/2026
N-AN-SA-TAG-APPLIER-REMOVER	Tagout Applier / Remover	Y	10/25/2024
N-NM-AA-S000-SITERQC02	SPDES (STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM)	Y	
N-AN-SA-ELECT-SAFTY-QUALD-WKR	Generic Electrical Safety for Qualified Worker	Y	
N-NM-IM-S303-296300Q01	LOCAL LEAK RATE TESTING NS303296300Q01	Y	

Date: Today

Employee ID: 444444

Employee Name: **Equipment Operator 2 (EO 2)**

Legend:

Y = Currently Qualified (will not expire in next 60 days)

O = Currently Qualified (due to expire in 60 days or less)

N = Not Qualified (expired)

(blank)= Qualification Never Assigned

26 Qualifications Found

Page 1 of 2

Qualification ID	Qualification Title	Status	Expiration Date
N-AN-HR-MEDICAL_RESPIRATOR	RESPIRATOR MEDICAL	Y	12/31/2024
N-AN-RP-NGET-1	General Employee Trng Level 1 – EXELON EMPLOYEE (FFD/PAT)	Y	12/31/2024
N-AN-RP-NGET-2	General Employee Trng Level 2 – EXELON EMPLOYEE (FFD/PAT/RWT)	Y	12/31/2024
N-AN-RP-RESP_LEVEL-1_TRAINED	Respiratory Protection Level 1 (Training Only)	Y	12/7/2024
N-NGET-RESP-R	Generic Respiratory Protection (NANTeL)	Y	12/31/2024
N-CE-SA-SAF-ASBESTOS	Asbestos OSHA Training (Northeast Sites: CC, GN, NMP)	O	9/15/2024
N-AN-SA-BLOODBORNE	Bloodborne Pathogens Level 2	Y	12/12/2024
N-AN-SA-CONF-SPC-SUPV	Confined Space Entry Supervisor	Y	
N-AN-SA-CONF-SPC-MONITOR	Confined Space Air Monitoring	Y	
N-AN-SA-ELECTRAL-SAFTY	Electrical Safety	Y	
N-AN-SA-FALL-PROT	Fall Protection	Y	
N-AN-SA-FIREWATCH	Fire Extinguisher-Fire Watch for Hotwork Activities	Y	12/31/2024
N-AN-SA-	First Aid, CPR. and AED Qualified	O	9/30/2024

FIRSTAID/CPR/AED			
N-AN-TQ-OJT_TRAINER	Exelon OJT Trainer	Y	11/31/2024
N-AN-CM-258010	Class 1, 4, and 5 Powered Industrial Truck	Y	2/16/2025
N-AN-EP-CR-SHIFT-COM	Shift Communicator	Y	12/31/2024
NM-OPS-1103-POQUALQ01	NMP1 Equipment Operator Qualification	Y	12/31/2024
N-NM-OPS-S100-LVL100CPT	Operations Shift Level 100 Complete	Y	12/31/2024
N-NM-OPS-SHIFTQUAL-U1-FBM	Fire Brigade Member Shift Qualification - NMP Unit 1	O	9/30/2024
N-AN-RP-RESP-FIT-SCT3000-MD	Scott AV-3000 Mask Fit Test (Medium)	O	9/30/2024
N-NM-SA-SAF-SCBA	Self Contained Breathing Apparatus	Y	11/30/2024
N-AN-SY-CRITICAL-GROUP	Critical Group	Y	10/16/2025
N-NM-OPS-S100-HOSTSRVC01	Hostage Survival (CBT)	Y	12/31/2026
N-NM-AA-S000-SITERQC02	SPDES (STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM)	Y	
N-AN-SA-ELECT-SAFTY-QUALD-WKR	Generic Electrical Safety for Qualified Worker	Y	
N-NM-OPS-219200-00003	Collect Vibration Data	Y	

Date: Today

Employee ID: 111111

Employee Name: **Reactor Operator 1 (RO1)**

Legend:

Y = Currently Qualified (will not expire in next 60 days)

O = Currently Qualified (due to expire in 60 days or less)

N = Not Qualified (expired)

(blank)= Qualification Never Assigned

30 Qualifications Found

Page 1 of 2

Qualification ID	Qualification Title	Status	Expiration Date
N-AN-HR-MEDICAL_RESPIRATOR	RESPIRATOR MEDICAL	O	9/30/2024
N-AN-RP-NGET-1	General Employee Trng Level 1 – EXELON EMPLOYEE (FFD/PAT)	O	9/30/2024
N-AN-RP-NGET-2	General Employee Trng Level 2 – EXELON EMPLOYEE (FFD/PAT/RWT)	O	9/30/2024
N-AN-RP-RESP_LEVEL-1_TRAINED	Respiratory Protection Level 1 (Training Only)	O	9/30/2024
N-NGET-RESP-R	Generic Respiratory Protection (NANTeL)	Y	11/30/24
N-CE-SA-SAF-ASBESTOS	Asbestos OSHA Training (Northeast Sites: CC, GN, NMP)	Y	12/31/2024
N-AN-SA-BLOODBORNE	Bloodborne Pathogens Level 2	N	5/31/2017
N-AN-SA-CONF-SPC-SUPV	Confined Space Entry Supervisor	Y	
N-AN-SA-CONF-SPC-MONITOR	Confined Space Air Monitoring	Y	
N-AN-SA-ELECTRAL-SAFTY	Electrical Safety	Y	
N-AN-SA-FALL-PROT	Fall Protection	Y	
N-AN-SA-FIREWATCH	Fire Extinguisher-Fire Watch for Hotwork Activities	N	5/31/2017
N-AN-SA-FIRSTAID/CPR/AED	First Aid, CPR. and AED Qualified	N	5/31/2017

N-AN-SA-TAG-TO-HOLDER	Tagout Holder	Y	11/30/2024
N-AN-SA-TAG-REQUESTER	Tagout Requester	Y	11/30/2024
N-AN-EP-CR-SHIFT-COM	Shift Communicator	Y	12/31/2024
N-NM-OPS-1103-POQUALQ01	NMP1 Equipment Operator Qualification	Y	9/30/2024
N-NM-OPS-S100-LVL100CPT	Operations Shift Level 100 Complete	Y	9/30/2024
N-NM-OPS-1200-ROSFTQUAL	Unit 1 Reactor Operator Shift Qualified	Y	9/30/2024
N-NM-OPS-1102-NRCROLIC	Unit 1 RO License Valid	Y	9/30/2024
N-NM-RP-S202-SCBAFIT	SCBA Fit Test (AV2000/3000)	Y	12/31/2024
N-NM-SA-SAF-SCBA	Self Contained Breathing Apparatus	Y	12/31/2024
N-AN-SY-CRITICAL-GROUP	Critical Group	Y	5/7/2025
N-NM-OPS-S100-HOSTSRVC01	Hostage Survival (CBT)	Y	12/30/2026
N-AN-SA-TAG-APPLIER-REMOVER	Tagout Applier/Remover	Y	11/30/2024
N-NM-SA-TAG-WRITER-PREPARER	Tagout Writer / Preparer - Nine Mile Point	Y	11/30/2024
N-NM-AA-S000-SITERQC02	SPDES (STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM)	Y	
N-NM-OPS-1103-262002040	UPS-175	Y	
N-AN-SA-ELECT-SAFTY-QUALD-WKR	Generic Electrical Safety for Qualified Worker	Y	
N-AN-OP-HUMAN-PERFORMANCE	Operations Human Performance Qualification	Y	

Date: Today

Employee ID: 222222

Employee Name: **Reactor Operator 2 (RO 2)**

Legend:

Y = Currently Qualified (will not expire in next 60 days)

O = Currently Qualified (due to expire in 60 days or less)

N = Not Qualified (expired)

(blank)= Qualification Never Assigned

30 Qualifications Found

Page 1 of 2

Qualification ID	Qualification Title	Status	Expiration Date
N-AN-HR-MEDICAL_RESPIRATOR	RESPIRATOR MEDICAL	Y	11/30/2024
N-AN-RP-NGET-1	General Employee Trng Level 1 – EXELON EMPLOYEE (FFD/PAT)	Y	11/30/2024
N-AN-RP-NGET-2	General Employee Trng Level 2 – EXELON EMPLOYEE (FFD/PAT/RWT)	Y	11/30/2024
N-AN-RP-RESP_LEVEL-1_TRAINED	Respiratory Protection Level 1 (Training Only)	Y	12/31/2024
N-NGET-RESP-R	Generic Respiratory Protection (NANTeL)	Y	12/31/2024
N-CE-SA-SAF-ASBESTOS	Asbestos OSHA Training (Northeast Sites: CC, GN, NMP)	Y	12/31/2024
N-AN-SA-BLOODBORNE	Bloodborne Pathogens Level 2	O	9/30/2024
N-AN-SA-CONF-SPC-SUPV	Confined Space Entry Supervisor	Y	
N-AN-SA-CONF-SPC-MONITOR	Confined Space Air Monitoring	Y	
N-AN-SA-ELECTRAL-SAFTY	Electrical Safety	Y	
N-AN-SA-FALL-PROT	Fall Protection	Y	
N-AN-SA-FIREWATCH	Fire Extinguisher -Fire Watch for Hotwork Activities	O	9/19/2024
N-AN-SA-FIRSTAID/CPR/AED	First Aid, CPR. and AED Qualified	O	9/19/2024

N-AN-TQ-OJT_TRAINER	OJT Trainer	Y	12/31/2024
N-AN-TQ-TPE-JPM-EVALUATOR	TPE/JPM Evaluator	N	12/31/2023
N-AN-EP-CR-SHIFT-COM	Shift Communicator	O	9/15/2024
N-NM-OPS-1103-POQUALQ01	NMP1 Equipment Operator Qualification	Y	12/31/2024
N-NM-OPS-S100-LVL100CPT	Operations Shift Level 100 Complete	Y	12/31/2024
N-NM-OPS-1200-ROSFTQUAL	Unit 1 Reactor Operator Shift Qualified	Y	12/31/2024
N-NM-OPS-1102-NRCROLIC	Unit 1 RO License Valid	Y	12/31/2024
N-NM-RP-S202-SCBAFIT	SCBA Fit Test (AV2000/3000)	Y	12/31/2024
N-NM-SA-SAF-SCBA	Self Contained Breathing Apparatus	Y	12/31/2024
N-AN-SY-CRITICAL-GROUP	Critical Group	Y	5/7/2025
N-NM-OPS-S100-HOSTSRVC01	Hostage Survival (CBT)	Y	12/30/2026
N-AN-SA-TAG-APPLIER-REMOVER	Tagout Applier/Remover	O	9/30/2024
N-NM-SA-TAG-WRITER-PREPARER	Tagout Writer / Preparer - Nine Mile Point	O	9/30/2024
N-NM-AA-S000-SITERQC02	SPDES (STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM)	Y	
N-NM-OPS-1103-262002040	UPS-175	Y	
N-AN-SA-ELECT-SAFTY-QUALD-WKR	Generic Electrical Safety for Qualified Worker	Y	
N-AN-OP-HUMAN-PERFORMANCE	Operations Human Performance Qualification	Y	

Training Id: **2024 NRC Admin SRO EC** Revision: **0.0**

Title: **Review and Approval of Completed Surveillance Test, N1-ST-M8, Reactor Building Emergency Ventilation System Operability Test**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/29/2024
Validated By	Brandon Dempsey	4/1/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-ST-M8 Reactor Building Emergency Ventilation System Operability Test
2. Unit 1 Technical Specifications
3. NUREG 1123, 2.2.12 (4.1)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to use and comply with facility surveillance procedures. Given a partial copy of N1-ST-M8, Reactor Building Emergency Ventilation System Operability Test, the candidate will review the results and identify any discrepancies.

2. Task Information:

   a. N1-261000-01015 Perform or Support Performance of N1-ST-M8 Reactor Building Emergency Ventilation System Operability Test (Branching Task)

   b. K/A 2.2.12 (4.1) Knowledge of Surveillance Procedures

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide marked up copies of N1-ST-M8, Reactor Building Emergency Ventilation System Operability Test
   b. Verify Technical Specifications are available
   c. Verify calculators are available

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is operating at 100% power. • N1-ST-M8 has just been completed up to the Operations Review. • You are the Shift Manager **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, using the completed surveillance provided, complete Section 10.1 Operations Review and Section 10.2 SM Review. Report findings and any required actions to the examiner.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure. **Note**: Evaluator is to provide the marked up copy of N1-ST-M8, Reactor Building Emergency Ventilation System Operability Test, to the candidate	P	SAT / UNSAT **STD:** N1-ST-M8 obtained. General Test Methods, References / Commitments and the Precaution and Limitation reviewed.
3.	Determines status of the completed surveillance. Reviews N1-ST-M8, Reactor Building Emergency Ventilation System Operability Test and identifies the following:		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
3a.	Performs Operations Review step 10.1.1. **Note**: May inform examiner verbally of issues	P	***PASS / FAIL** **STD:** Identifies a mathematical error at step 8.1.9.c for the sum of Train 11 Filter D/P's. Actual sum of Train 11 Filer D/P's is greater than 6"H20. Step 10.1.1.c should be marked UNSAT.
3b..	Performs Operations Review step 10.1.1 **Note**: May inform examiner verbally of issues	P	***PASS / FAIL** **STD**: Identifies RBEVS Loop 12 flow is less than 1440 cfm. Step 10.1.2.b should be marked UNSAT.
4.	Identifies the surveillance as UNSAT per step 10.2 and actions are required for components being declared inoperable per the Acceptance Criteria **Note**: May inform examiner verbally of issues	P	***PASS / FAIL** **STD:** The following actions are required for an UNSAT performance of the surveillance per step 10.2 SM Review: Enter component in ESL, enter applicable TS LCO, make entry in SM log, place EST on component, write an IR, notify U1 SOS or designee.

TASK STANDARD	Determination of the status of this surveillance as UNSAT with the following errors identified below: • Train 11 Filter D/P is greater than 6"H20. Train 11 is inoperable • Train 12 flow is less than 1440 cfm. Train 12 is inoperable

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is operating at 100% power. • N1-ST-M8 has just been completed up to the Operations Review. • You are the Shift Manager

INITIATING CUE	**(Operators Name)**, using the completed surveillance provided, complete Section 10.1 Operations Review and Section 10.2 SM Review. Report findings and any required actions to the examiner.

NINE MILE POINT NUCLEAR STATION UNIT 1

SURVEILLANCE TEST PROCEDURE

N1-ST-M8

REVISION 01700

REACTOR BUILDING EMERGENCY VENTILATION SYSTEM OPERABILITY TEST

TECHNICAL SPECIFICATION REQUIRED

Approval Authority: Director - Operations

SUMMARY OF ALTERATIONS

Revision	Change	Summary of Revision or Change
017	00	Minor Revision to incorporate:

PCR-18-02991 Add Sections to allow data collection if RBEVS is already in service. This would allow N1-ST-M8 to be completed SAT without SQRS.

PCR-18-02991:

- 4.1, Update Step references.
- 8.3, Add new Section.
- 8.4, Add new Section.
- 9.2, Update Steps to accommodate restoration with new sections.
- 9.3, Update Steps to accommodate restoration with new sections.
- 10.1.1, Add N/A statement.
- 10.1.1.a & b, Add Acceptance Criteria if new Section is used.
- 10.1.2, Add N/A statement.
- 10.1.2.a & b, Add Acceptance Criteria if new Section is used.

OPS REVIEW:

- 10.1.1.b, Change to "Steps 8.1.9.a AND 8.1.10 OR 8.3.4.a AND 8.3.5.
- 10.1.1.c, Change to "Steps 8.1.9.c OR 8.3.4.c.
- 10.1.2, Change to "Steps 8.2.9.a AND 8.2.10 OR 8.4.4.a AND 8.4.5.

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1.0 PURPOSE

Provide instructions necessary to perform operability verification of the Emergency Ventilation System per the requirements of Plant Technical Specifications.

2.0 TECHNICAL SPECIFICATIONS

2.1 Surveillance Requirements

- 4.4.4.e, Emergency Ventilation System
- 4.4.4.i, Surveillance with Inoperable Component

2.2 Limiting Conditions for Operation (LCO)

- 3.4.4, Emergency Ventilation System

2.3 Frequency

- This procedure shall be performed monthly during all periods when this system is required for operability.
- This procedure may be performed daily, IF deemed necessary by the Shift Manager (SM), to verify operability with an inoperable train of Emergency Ventilation.

3.0 REFERENCES AND COMMITMENTS

3.1 Licensee Documentation

- UFSAR, Section VII.H, Emergency Ventilation System

3.2 Policies, Programs, and Procedures

- WC-AA-111, Surveillance Program Requirements
- N1-OP-10, Reactor Building Heating, Cooling and Ventilating System

3.3 Technical Information

- C-18013-C, Reactor Building Heating, Cooling and Ventilation
- C-18022-C, Sh 1, Service Water Reactor and Turbine Buildings
- C-19432-C, Sh 2, Elementary Wiring Diagram, 600 Volt Power Board 151 Control Circuits
- C-19434-C, Sh 2, Elementary Wiring Diagram, 600 Volt Power Boards 153A and 153C Control Circuits
- C-19820-C, Sh 3, 480V Power Boards H10 and H101 Floor Plan and Front View
- C-19824-C, Sh 3, 480V Power Boards H14 and H15 Floor Plan and Front View
- C-19826-C, Sh 3, 480V Power Boards H151, H16 and H161 Floor Plan and Front View
- C-22322-C, Sh 2, 480V Power Board H10 Interconnection Diagram
- 5-C-53881, Channel Base
- 7-C-53052, Makeup Air Heater
- 7-W-63259, 54C Type S Adjustax Fan
- 7-W-63698, 54C Type S Adjustax Arrangement 9

3.4 Supplemental References

- Problem Report 1619, Reactor Building Emergency Ventilation System
- Occurrence Report 89-530, RBEVS Design

3.5 Commitments

Sequence Number	Commitment Number	Description
None		

4.0 GENERAL TEST METHODS

4.1 Subsections 8.1, 8.2, 8.3 and 8.4 may be performed in any order as necessary to facilitate Post-Maintenance Testing and to minimize shifting of plant equipment. Subsections 8.1, 8.2, 8.3 and 8.4 shall NOT be performed concurrently. Steps within the subsections shall be performed in order unless otherwise specified.

4.2 The letters T/S in brackets **[T/S]** will denote steps required for compliance with Plant Technical Specifications. If specific acceptance criteria are required, the acceptable value will be given in brackets for example [30 secs.].

4.3 Testing is performed by operating each Emergency Ventilation System for a minimum of 15 minutes.

4.4 Post-Maintenance Testing

4.5 This procedure may be used for Post-Maintenance testing and verification of operability for any equipment covered by this procedure. When used for this purpose, Sections 1.0 through 6.0, and the applicable subsections/steps of Sections 1.0 through 10.0 shall be performed.

4.6 Use of N/A may only be used as directed in this procedure, except as allowed by HU-AA-104-101, Procedure Use and Adherence.

5.0 TEST EQUIPMENT

Acceptance Criteria Instrumentation

Instrument ID	Instrument Name	Location
FI-202-49B	Flow	K Panel
FI-202-92B	Flow	K Panel
DPI-202-43	D/P	TB-261
DPI-202-44	D/P	TB-261
DPI-202-45	D/P	TB-261
DPI-202-46	D/P	TB-261
DPI-202-56	D/P	TB-261
DPI-202-57	D/P	TB-261

6.0 PRECAUTIONS AND LIMITATIONS

6.1 Applicable Radiological precautions shall be observed. Radiation protection shall be contacted for guidance, as required.

6.2 All ALARA practices shall be observed to minimize personnel exposure and spread of contamination.

6.3 Failure to notify the Shift Manager (SM) immediately whenever a procedural step cannot be completed as stated, or if any other problem develops during the test, may result in invalidating the test results.

6.4 The SM shall be notified immediately if the test results exceed the acceptance criteria.

6.5 Failure to use calibrated test equipment of the specified accuracy may result in invalidating test data obtained.

6.6 Only one Reactor Building Emergency Ventilation System shall be operated at a time.

6.7 A total combined leakage of 70 SCFM and a 1" hole are defined as the limiting conditions per calculation H21C043-00D for the RBEV System.

Initials

7.0 PREREQUISITES

> **NOTE**
>
> Steps 7.1 through 7.4 may be performed in any order or concurrently.

7.1 Specify reason for test performance.

- [x] Routine Surveillance
- [ ] Post-Maintenance Testing, WD Number _____
- [ ] Inoperable Component
- [ ] Other (specify)_____ NR

7.2 Verify permanent plant instrumentation is calibrated.

Parameter	Instrument ID Number	Cal Due Date
D/P	DPI-202-17D	5/31/25
Flow	FI-202-49B	5/31/25
Flow	FI-202-92B	5/31/25
D/P	DPI-202-43	5/31/25
D/P	DPI-202-44	5/31/25
D/P	DPI-202-45	5/31/25
D/P	DPI-202-46	5/31/25
D/P	DPI-202-56	5/31/25
D/P	DPI-202-57	5/31/25 NR

7.3 Personnel responsible for performance of this test have read AND thoroughly understand its content PRIOR to test commencement. NR

7.4 The Emergency Ventilation System is in normal configuration per N1-OP-10. Any exceptions have been noted AND evaluated by the SM AND determined to have NO impact on the performance of this test. SM

SM

Initials

7.5 Discuss plant impact with SM and obtain permission to perform procedure.

PLANT IMPACT: **EACH REACTOR BUILDING EMERGENCY VENTILATION SYSTEM WILL BE OPERATED FOR A MINIMUM OF FIFTEEN MINUTES.**

SM
SM

7.6 Notify Control Room Operator (CRO) procedure is to be performed.
Discuss Plant Impact.

CRO
CRO

7.7 Record test start time AND date:

0500 / TODAY
Start Time Date

NR

Initials

8.0 PROCEDURE

8.1 Operation of RBEVS Loop 11

> **NOTE**
>
> All steps are performed at Control Room Panel L, unless otherwise specified.

8.1.1 Verify 202-36, EM VENTILATION FROM REACTOR BLDG BV open. NR

8.1.2 Verify 202-47, EM VENTILATION TIE BV closed. NR

8.1.3 Open 202-37, EM VENTILATION LOOP 11 INLET BV. NR

8.1.4 Start 202-53, EVS FAN 11. NR

8.1.5 Verify EM VENT EXHAUST FAN 11 OUTLET BV open. NR

8.1.6 Confirm proper operation of EM VENT EXHAUST FAN 11 INLET FCV, by observing indicating lights and flow indication. NR

8.1.7 SM direct adjusting Normal Reactor Building Ventilation System flow per N1-OP-10 as necessary to accommodate Emergency Ventilation System Loop 11 operation. SM
SM

8.1.8 Record 202-53, EVS FAN 11 start time.

Start Time: 0515 NR

8.1.9 Document information as follows:

a. At Control Room Panel L, record the following: **[T/S]**

- 202-49B, EMER VENT FLOW 11 CFM X 10

  202-49B 1650 cfm
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D −0.25 in H_2O NR

b. Record the following Train 11 filter D/P's

- Filter 111, DPI-202-44 2 inch H_2O NR
- Charcoal Filter 11, DPI-202-46 3 inch H_2O NR
- Filter 112, DPI-202-57 2 inch H_2O NR

c. Calculate sum of the 3 filter D/P's 5 inch H_2O **[T/S]** NR
[<6"H_2O]

IV
IV

Initials

8.1.9 (Continued)

d. IF sum of filter D/P's are greater 5"H_2O, THEN notify Shift Manager — NR

8.1.10 WHEN at least 15 minutes has elapsed, THEN at Control Room Panel L record the following:

- 202-49B, EMER VENT FLOW 11 CFM X 10 **[T/S]**

  202-49B 1650 cfm
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D -0.25 in H_2O — NR

8.1.11 Verify RB Normal Ventilation is in service. — NR

8.1.12 Place 202-53, EVS FAN 11, control switch in STOP. — NR

8.1.13 Record 202-53, EVS FAN 11 stop time.

Stop Time: 0530 — NR

8.1.14 Perform the following:

a. Place 202-37, EM VENTILATION LOOP 11 INLET BV, control switch in AUTO position. — NR

b. Verify 202-37 closed. — NR

8.1.15 Verify 202-34, EM VENT EXHAUST FAN 11 OUTLET BV closed. — NR

8.1.16 Record 202-53, EVS FAN 11, total run. **[T/S]**

0 hrs 15 mins
[≥ 15 minutes] — NR

IV
IV

8.1.17 SM direct restoration of Reactor Building Normal Ventilation flow as desired per N1-OP-10.

SM
SM

Initials

8.2 Operation of RBEVS Loop 12

> **NOTE**
>
> All steps are performed at Control Room Panel L, unless otherwise specified.

8.2.1 Verify 202-36, EM VENTILATION FROM REACTOR BLDG BV open. ____

8.2.2 Verify 202-47, EM VENTILATION TIE BV closed. ____

8.2.3 Open 202-38, EM VENTILATION LOOP 12 INLET BV. ____

8.2.4 Start 202-33, EVS FAN 12. ____

8.2.5 Verify EM VENT EXHAUST FAN 12 OUTLET BV open. ____

8.2.6 Confirm proper operation of EM VENT EXHAUST FAN 12 INLET FCV, by observing indicating lights AND flow indication. ____

8.2.7 SM direct adjusting Normal Reactor Building Ventilation System flow per N1-OP-10 as necessary to accommodate Emergency Ventilation System Loop 12 operation. ____ SM

8.2.8 Record 202-33, EVS FAN 12 start time. ____

Start Time: 0545

8.2.9 Document information as follows:

a. At Control Room Panel L, record the following: **[T/S]**

- 202-92B, EMER VENT FLOW 12 CFM X 10

  202-92B 1350 cfm ____
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D −0.25 in H_2O ____

b. Record the following Train 12 filter D/P's

- Filter 121, DPI-202-43 1 inch H_2O ____
- Charcoal Filter 12, DPI-202-45 2 inch H_2O ____
- Filter 122, DPI-202-56 1 inch H_2O ____

c. Calculate sum of the 3 Filter D/P's 4 inch H_2O ____
[<6"H_2O]

IV
IV

d. IF sum of filter D/P's are greater than 5"H_2O, THEN notify Shift Manager. ____

Initials

8.2.10 WHEN at least 15 minutes has elapsed,
THEN record the following at Control Room Panel L:

- 202-92B, EMER VENT FLOW 12 CFM X 10 **[T/S]**

  202-92B 1350 cfm
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D -0.25 in H_2O

8.2.11 Verify RB Normal Ventilation is in service.

8.2.12 Place 202-33, EVS FAN 12, control switch in STOP

8.2.13 Record 202-33, EVS FAN 12 stop time.

Stop Time: 0600

8.2.14 Perform the following:

a. Place 202-38, EM VENTILATION LOOP 12 INLET BV, control switch in AUTO position.

b. Verify 202-38 closed.

8.2.15 Verify 202-35, EM VENT EXHAUST FAN 12 OUTLET BV closed.

8.2.16 Record 202-33, EVS FAN 12, total run. **[T/S]**

0 hrs 15 mins
[≥ 15 minutes]

IV
IV

8.2.17 SM direct restoration of Reactor Building Normal Ventilation flow as desired per N1-OP-10.

SM
SM

Initials

8.3 Data Collection IF RBEVS Loop 11 is Already In Service.

NOTE

This Section should be used for data collection only. This is to satisfy the requirements of N1-ST-M8, if RBEVS Loop 11 is already in service.

8.3.1 Verify RBEVS Loop is in Service. _____

8.3.2 SM direct adjusting Normal Reactor Building Ventilation System flow per N1-OP-10 as necessary to accommodate Emergency Ventilation System Loop 11 testing. _____ SM

8.3.3 Record data collection start time.

Start Time: _____ _____

8.3.4 Document information as follows:

a. At Control Room Panel L, record the following: **[T/S]**

- 202-49B, EMER VENT FLOW 11 CFM X 10

  202-49B _____ cfm
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D_____ in H_2O _____

b. Record the following Train 11 filter D/P's

- Filter 111, DPI-202-44_____inch H_2O _____
- Charcoal Filter 11, DPI-202-46_____inch H_2O _____
- Filter 112, DPI-202-57_____inch H_2O _____

c. Calculate sum of the 3 filter D/P's _____inch H_2O **[T/S]** _____
[<6"H_2O]

_____ IV

d. IF sum of filter D/P's are greater 5"H_2O,
THEN notify Shift Manager. _____

Initials

8.3.5 WHEN at least 15 minutes has elapsed,
THEN at Control Room Panel L record the following:

- 202-49B, EMER VENT FLOW 11 CFM X 10 **[T/S]**

  202-49B _____ cfm
  [1440 to 1760]

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D_____ in H_2O _____

8.3.6 Record data collection stop time.

Stop Time: _____ _____

8.3.7 Record the time between the start AND stop of data collection

_____hrs _____ mins
[≥ 15 minutes] _____

_____
IV

8.3.8 SM direct restoration of Reactor Building Normal Ventilation flow as desired per N1-OP-10.

_____
SM

Initials

8.4 Data Collection IF RBEVS Loop 12 is Already In Service.

NOTE

This Section should be used for data collection only. This is to satisfy the requirements of N1-ST-M8, if RBEVS Loop 12 is already in service.

8.4.1 Verify RBEVS Loop is in Service. _____

8.4.2 SM direct adjusting Normal Reactor Building Ventilation System flow per N1-OP-10 as necessary to accommodate Emergency Ventilation System Loop 12 testing. _____ SM

8.4.3 Record data collection start time.

Start Time: _____ _____

8.4.4 Document information as follows:

a. At Control Room Panel L, record the following: **[T/S]**

- 202-92B, EMER VENT FLOW 12 CFM X 10

  202-92B _____ cfm [1440 to 1760] _____

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D_____ in H_2O _____

b. Record the following Train 12 filter D/P's

- Filter 121, DPI-202-43_____inch H_2O _____
- Charcoal Filter 12, DPI-202-45_____inch H_2O _____
- Filter 122, DPI-202-56_____inch H_2O _____

c. Calculate sum of the 3 Filter D/P's _____inch H_2O [<6"H_2O] _____

_____ IV

d. IF sum of filter D/P's are greater than 5"H_2O, THEN notify Shift Manager. _____

Initials

8.4.5 WHEN at least 15 minutes has elapsed,
THEN record the following at Control Room Panel L:

- 202-92B, EMER VENT FLOW 12 CFM X 10 **[T/S]**

  202-92B _____ cfm
  [1440 to 1760]

  _____

- 202-17D, REACT BLD/ATM DIFF PR IN H_2O

  DPI 202-17D_____ in H_2O _____

8.4.6 Record data collection stop time.

Stop Time: _____ _____

8.4.7 Record the time between the start AND stop of data collection

_____hrs _____ mins
[≥ 15 minutes] _____

_____
IV

8.4.8 SM direct restoration of Reactor Building Normal Ventilation flow as desired per N1-OP-10.

_____
SM

Initials

9.0 RETURN TO NORMAL

9.1 Verify Reactor Building Emergency Ventilation System is in the normal configuration per N1-OP-10.

N/A, RBEV will Remain in service..... ☐ MR

9.2 Independently verify RBEVS Loop 11 has been returned to normal:

N/A, RBEV Loop 11 will remain in service. ..... ☐

9.2.1 202-53, EVS FAN 11 CONTROL SWITCH, in Green Flag Auto Start position. MR

IV

9.2.2 202-37, EM VENTILATION LOOP 11 INLET BV, closed. MR

IV

9.2.3 202-34, EM VENT EXHAUST FAN 11 OUTLET BV, closed. MR

IV

9.3 Independently verify RBEVS Loop 12 has been returned to normal:

N/A, RBEV Loop 12 will remain in service. ..... ☐

9.3.1 202-33, EVS FAN 12 CONTROL SWITCH, in Green Flag Auto Start position. MR

IV

9.3.2 202-38, EM VENTILATION LOOP 12 INLET BV, closed. MR

IV

9.3.3 202-35, EM VENT EXHAUST FAN 12 OUTLET BV, closed. MR

IV

9.4 Verify ALL test personnel performing this procedure have initialed AND signed in Attachment 1, Test Personnel Signature and Initial Log. MR

9.5 Verify ALL independent verification steps have been completed. MR

9.6 Verify ALL test documentation, including Acceptance Criteria, is completed. MR

		Initials
9.7	Notify SM AND CRO procedure is completed.	NR
9.8	Record test stop time AND date:	
	0615 / TODAY Stop Time Date	NR

10.0 ACCEPTANCE CRITERIA

10.1 Operation Review

10.1.1 Reactor Building Emergency Ventilation Loop 11 has met the following Tech Spec requirements:

N/A, RBEV Loop 11 was NOT tested. ..... ☐

a. EVS FAN 11 operated a minimum of 15 minutes per Step 8.1.16 OR 8.3.7.

☒ SAT ☐ UNSAT

b. RBEV Loop 11 flow 1440 to 1760 cfm per Steps, 8.1.9.a AND 8.1.10 OR 8.3.4.a AND 8.3.5.

☒ SAT ☐ UNSAT

c. RBEV Loop 11 Filter D/P is less than 6" H_2O per Step 8.1.9.c OR 8.3.4.c.

☒ SAT ☐ UNSAT

10.1.2 Reactor Building Emergency Ventilation Loop 12 has met the following Tech Spec requirements:

N/A, RBEV Loop 12 was NOT tested. ..... ☐

a. EVS FAN 12 operated a minimum of 15 minutes per Step 8.2.16 OR 8.4.7.

☒ SAT ☐ UNSAT

b. RBEV Loop 12 flow 1440 to 1760 cfm per Steps, 8.2.9.a AND 8.2.10 OR 8.4.4.a AND 8.4.5

☒ SAT ☐ UNSAT

c. RBEV Loop 12 Filter D/P is less than 6" H_2O per Step 8.2.9.c or 8.4.4.c.

☒ SAT ☐ UNSAT

10.2 SM Review

☒ Satisfactory, no corrective action required.

☐ Satisfactory, corrective action required. (Use Remarks Section as necessary and initiate an WD.)

☐ Unsatisfactory, immediately notify Shift Operations Superintendent or designee.

_____
Name of person notified

For any component tested with this surveillance test that is declared inoperable per the Acceptance Criteria, perform the following:

- Enter it in the ESL.
- Enter any applicable Technical Specification LCOs.
- Make an entry in the SM log.
- Place an Equipment Status tag on the component.
- Write an IR.
- Notify Unit 1 SOS or designee.

Remarks: None

SM / Today / 0630
Signature SM Date Time

10.3 Second Review

All test data reviewed AND all documentation completed.

_____ / _____ / _____
STA/SRO Signature Date Time

ATTACHMENT 1: TEST PERSONNEL SIGNATURE AND INITIAL LOG

Sheet 1 of 1

PRINTED NAME	SIGNATURE	INITIALS
Shift Manager		SM
Control Room Operator		CRO
Patrick Ryan		PR

Training Id: **2024 NRC Admin SRO RC** Revision: **0.0**

Title: **Determine Actions for Inoperable Stack Radiation Monitor**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/26/2024
Validated By	Brandon Dempsey	4/1/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-ARP-H3
2. N1-OP-50B
3. NUREG 1123, 2.3.11 (4.3)
4. CY-NM-170-301 Offsite Dose Calculation Manual

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to determine actions required for a failed gaseous radiation monitor per the Offsite Dose Calculation Manual.

2. Task Information:

   a. NS-PS115-03001 Maintain cognizance of entry into technical specification action statements.

   b. K/A 2.3.11 (4.3) Ability to control radiation releases

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide copy of N1-ARP-H1-3-8
   b. Provide copy of CY-NM-170-301

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is operating at 100% power. • Annunciator H1-3-8, STACK GAS MONITORING TROUBLE alarmed. • Computer Point C061, OGESMS RAD MON STATUS - TRBL alarmed. • OGESMS radiation monitor RN-10A indicates downscale. • RN-10A input to H1-3-8 has been defeated per S-ARP-001. • Annunciator H1-3-8 is now clear. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, determine the appropriate actions, compensatory measures, and reporting requirements in response to ARP H1-3-8. Record your findings on the provided attachment.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure.	P	SAT / UNSAT **STD:** CY-NM-170-301 and N1-ARP-H1-3-8 obtained
3.	Requests Chemistry to implement CY-NM-170-309 OGESMS OFF-NORMAL PROCEDURES	P	SAT / UNSAT **STD:** In accordance with N1-ARP-H1-3-8

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Determines OGESMS is inoperable and Secondary Containment is required. Determines 8 Drywell and Torus Vent and Purge Valves (201-07, 201-08, 201-09, 201-10, 201-16, 201-17, 201-31, and 201-32) must be closed and administratively tagged. **Note:** This action may be determined using either N1-ARP-H1-3-8 or CY-NM-170-301.	P	***PASS / FAIL** **STD:** In accordance with N1-ARP-H3-1-8
5.	Reviews CY-NM-170-301 ODCM 3.6.14	P	SAT / UNSAT **STD:** In accordance with CY-NM-170-301
6.	Determines DLCO per 3.6.14.b - With less than the minimum number of radioactive gaseous process and effluent monitoring instrumentation channels functional, take the action shown in Table D 3.6.14-2. Restore the instruments to functional status within 30 days or outline in the next Radioactive Effluent Release Report the cause of the nonfunctionality and how the instruments were or will be restored to functional status.	P	***PASS / FAIL** **STD:** In accordance with CY-NM-170-301 step 3.6.14.b.
7.	Reviews CY-NM-170-301 Table D 3.6.14-2	P	SAT / UNSAT **STD:** In accordance with CY-NM-170-301

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
8.	Determines ODCM Table D 3.6.14-2 note (a)(1) applies - With the number of channels functional 1 less than required by the minimum channels functional requirement, effluent releases via this pathway may continue provided: (a) The nonfunctional channel is placed in the tripped condition, OR (b) Vent and Purge valves are closed and administratively controlled, OR (c) Primary containment integrity is not required.	P	***PASS / FAIL** **STD:** In accordance with CY-NM-170-301 step 3.6.14.b.
9.	Reports DLCO actions	P	SAT / UNSAT **STD:** Proper communications used.

TASK STANDARD	Determine that the 8 Drywell and Torus Vent and Purge Valves must be closed and administratively tagged due to the inoperability of the OGEMS detector RN10A per ARP H1-3-8. Determines that entry into DLCO 3.6.14.b is required due to the number of functional channels 1 less than required by the minimum channels functional requirement and that 3.6.14.b, Note (a)(1) applies per CY-NM-107-301 Offsite Does Calculation Manual in response to stack radiation monitor downscale condition.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is operating at 100% power. • Annunciator H1-3-8, STACK GAS MONITORING TROUBLE alarmed. • Computer Point C061, OGESMS RAD MON STATUS - TRBL alarmed. • OGESMS radiation monitor RN-10A indicates downscale. • RN-10A input to H1-3-8 has been defeated per S-ARP-001. • Annunciator H1-3-8 is now clear.

INITIATING CUE	**(Operators Name)**, determine the appropriate actions, compensatory measures, and reporting requirements in response to ARP H1-3-8. Record your findings on the provided attachment.

Attachment 1

ANSWER KEY

Determine the appropriate actions in response to these conditions.	
Action	Required By (Document)
Request Chemistry implement CY-NM-170-309 OGESMS OFF-NORMAL PROCEDURES. Verify the 8 Drywell and Torus Vent and Purge valves CLOSED and administratively tag.	ARP H1-3-8
ODCM Table D 3.6.14-2 note (a)(1) applies - With the number of channels functional 1 less than required by the minimum channels functional requirement, effluent releases via this pathway may continue provided: (a) The nonfunctional channel is placed in the tripped condition, OR (b) Vent and Purge valves are closed and administratively controlled, OR (c) Primary containment integrity is not required.	ODCM Table D 3.6.14-2
DLCO 3.6.14.b requires - Restore the instruments to functional status within 30 days or outline in the next Radioactive Effluent Release Report the cause of the non-functionality and how the instruments were or will be restored to functional status.	ODCM DLCO 3.6.14.b

Attachment 2

JPM Scorecard for Applicant Use

Determine the appropriate actions in response to these conditions.	
Action	Required By (Document)

Training Id: **2024 NRC Admin SRO EP** Revision: **0.0**

Title: **Emergency Event Classification & Notification**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Patrick Ryan	1/26/2024
Validated By	Brandon Dempsey	4/1/2024
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-EOP-C5 (1-2) RPV Control - ATWS
2. N1-EOP-PC Primary Containment Control (1-2)
3. EP-AA-1013, Addendum 3, Appendix 1, NMP Unit 1 EAL Wallboard
4. EP-AA-111, Emergency Classification and Protective Action Recommendations
5. NUREG 1123, 2.4.41 (4.6)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the SRO's ability to classify an event and perform the station specific Part 1 Notification Form.

2. Task Information:

   a. NS-EP101-03018, Prepare and Approve a Part 1 Notification Fact Sheet for an Emergency Classification.

   b. K/A 2.4.41 (4.6), Knowledge of the emergency action level thresholds and classifications.

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Classroom
Time Critical Task	Yes
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Classroom

5. JPM Setup (if required)

   a. Provide sufficient copies of the following:
      1) EP-AA-112-100-F-01 Shift Emergency Director Checklist
      2) EP-AA-114-F-02 BWR Release in Progress Determination Guidance
      3) EP-CE-114-100-F-05 Part 1 Notification Facts Sheet
      4) EP-AA-112-100-F-06 ERO Notification Form
      5) EP-AA-112-F-09 Emergency Public Address Announcements
      6) EPA-28 Simplified Classification Sequence
      7) EP-AA-1013 Addendum 3 Nine Mile Point Unit 1 Emergency Classification Technical Bases
      8) EP-AA-1013 Addendum 3 Appendix 1 NMP Unit 1 Wallboard
      9) N1-EOP-PC

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given:
	• The plant was operating at 100% power when a main steam line break caused an automatic closure of all Main Steam Isolation Valves
	• An automatic reactor SCRAM was generated from the MSIV closure, however multiple control rods failed to insert
	• All manual and ARI actions to shut down the reactor have been unsuccessful
	• Reactor pressure is stable at 900 psig with the following pressure control methods
	  ○ Both ECs in service
	  ○ 4 ERVs open
	• Torus water level is 12.5 feet and rising slowly
	• Torus water temperature is 120°F and rising slowly
	• NMP Unit 2 is operating at 100% reactor power
	
	Evaluator: *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	The time that conditions are available in the Control Room is upon completion of the initiating cue. **(Operators Name)**, classify this event and complete the station specific initial notification form in accordance with EP-AA-112-100-F-01 SHIFT EMERGENCY DIRECTOR CHECKLIST. ***"This is a Time Critical JPM"***

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** *Acknowledge repeat back providing correction if necessary.*	P	SAT / UNSAT **STD:** Proper communications used.
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure.	P	SAT / UNSAT **STD:** Obtains EAL Flowchart and Shift Emergency Director binder.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
Evaluator Note	• Steps may not be performed in the order exactly as listed in the JPM. • The Operator may choose to utilize the Simplified Classification Sequence guide NMP EP AID EPA-28.		
3.	Starts EP-AA-112-100-F-01, Shift Emergency Director Checklist	P	SAT / UNSAT **STD:** Maintains place keeping throughout performance of this checklist

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	If the event is classified as an SITE AREA EMERGENCY, then perform the following: RECORD the EAL and declaration time	P	***PASS / FAIL** **STD**: Classifies the event as a **SITE AREA EMERGENCY MS3 and/or FS1** **Critical Step Justification**: Emergency classification and declaration shall be completed as soon as possible but no later than 15 from the time indications an EAL threshold being met or exceeded are available in the Control Room. The time written on the ED Checklist or SED job aid will count as declaration time if no announcement is made. The time difference below must be 15 minutes or less: **JPM Start Time**: _____ **Declaration Time**: _____

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
5.	ANNOUNCE the event classification, possible escalation paths, and declaration time to the Control Room staff. **Cue**: If asked for a peer check, report that the STA/IA is not available for peer check DECLARE the event by announcing the following (from EPA-28): - I am declaring a(n) (EAL Classification) at (time) due to (brief reason). Escalation criteria is(are) (criteria) and I am assuming the role as Shift ED."	P	SAT/UNSAT STD: Announces to Control Room personnel the EAL classification, possible escalation paths, and declaration times.
6.	Calls Shift Communicators and Shift dose Assessors to their respective Control Rooms	P	SAT / UNSAT **STD**: Uses Gai-Tronics to call personnel to Control Room
7.	Security Related Events, GO TO Step 4.1 Security Related Events. **Note**: Determines NO Security Event is in progress (N/A for this scenario)	P	SAT / UNSAT **STD:** Determines that this is not a Security Event, step is N/A
8.	If all the ERO has not been activated, then DIRECT activation of the ERO Notification using 1, "Actual Event Respond to Facility" or 3, "Actual Event Alternative Facility Response" as appropriate, per EP-AA-112-100-F-06. **Cue**: As Shift Communicator, acknowledge direction to notify ERO **Note**: Record time SED directs the Shift Communicator to activate the ERO as recorded in the SED Checklist	P	SAT/UNSAT **STD**: Accurately fills out and completes ERONS Notification Details (CNG) • Circles NMP • Circles "Actual Event Respond to Facility" **Note**: Operator may only call U2 and direct them to activate ERONs. This satisfies the requirement.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
9.	SELECT the Emergency Public Address Announcements from the form and DIRECT performance of the public address announcement within 15 minutes of the event classification using EP-AA-112-F-09 **Cue**: As Shift Communicator, acknowledge direction. Wait 1 minute and then report that Station announcement has been made.	P	SAT / UNSAT **STD**: Directs Shift communicator to makes Emergency PA Announcement

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
10.	DIRECT performance of State/Local notifications within 15 minutes of the event classification as required per the Notifications procedure. • Notification Procedure: (Tab 3) • Notification form: (Tab 4) • Release in Progress Determination Guidance: (Tab 21) • Release in Progress Determination Guidance Technical Basis: (Tab 26) **Cue**: If operators asks for a peer check, report that the STA/IA is not available for peer check Provides the completed form to Shift Communicator and directs them to notify State and Local. **Cue**: As Shift Communicator, acknowledge direction and record time Part 1 Notification received. **Note**: The accurate declaration "MS3 and/or FS1" is not required for a passing grade determination. The requirement is the Shift Manager make the correct event classification. In this case the SM/ED needs to declare a "SITE AREA EMERGENCY" to receive credit. (per TQ-AA-155, Attachment 6, Step 2.4)	P	***PASS / FAIL** **STD**: Accurately fills in and completes all information inside SHADED boxes of Part 1 Notifications. Marks "Nine Mile Point Unit 1" on first row Step 2: B Step 3: C Step 4: Declaration Time Step 5: A Step 6: A This notification is required to be completed within 15 minutes of the Emergency Declaration. This means that the state and local are required to be notified within 15 minutes. **Critical Step Justification**: This information is required to be accurate when providing transmitting this information to outside organizations and the NRC The time difference below must be 15 minutes or less: **Declaration Time**: _____ **Notification Time**: _____

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
11.	The Operator may perform the following steps before completing the Part 1 Notification Fact Sheet. These steps are NOT required to be completed for Satisfactory completion of the JPM		
12.	DIRECT performance of required NRC notifications immediately following notification of the appropriate State and Local agencies: • Notification Procedure: (Tab 20) • Notification Form: (Tab 10)	P	SAT/UNSAT **STD**: Accurately fills out and completes the Reactor Plant Event Notification Worksheet (NRC Form 361)
13.	If a release is in progress, then: **Note**: Operator should determine there is NO release in progress based on initial conditions and this step is N/A	P	SAT / UNSAT **STD**: Determines that there is not a Release in Progress, step is N/A
14.	If the emergency involves any type or size LOCA, then ENSURE Control Room(s) emergency ventilation is initiated. **Note**: Operator should determine there is NO LOCA progress based on initial conditions and this step is N/A	P	SAT / UNSAT **STD**: Determines there is no LOCA in progress, this step is N/A
15.	Determines if SAFER FLEX Equipment is deemed necessary. **Note**: Operator should determine there is no need for SAFER FLEX equipment, this step is N/A	P	SAT / UNSAT **STD**: Determines there is no need for SAFER FLEX equipment, this step is N/A
Termination Cue	Once the Part 1 Notification Fact Sheet is completed and the Shift communicator is Directed to make State and Local notifications, report “At this time, the JPM is completed”		

TASK STANDARD	A SITE AREA EMERGENCY (MS3 or FS1) has been classified and NMP Notification Fact Sheet-Part 1 is completed.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given:
	• The plant was operating at 100% power when a main steam line break caused an automatic closure of all Main Steam Isolation Valves
	• An automatic reactor SCRAM was generated from the MSIV closure, however multiple control rods failed to insert
	• All manual and ARI actions to shut down the reactor have been unsuccessful
	• Reactor pressure is stable at 900 psig with the following pressure control methods
	  ○ Both ECs in service
	  ○ 4 ERVs open
	• Torus water level is 12.5 feet and rising slowly
	• Torus water temperature is 120°F and rising slowly
	• NMP Unit 2 is operating at 100% reactor power

INITIATING CUE	The time that conditions are available in the Control Room is upon completion of the initiating cue. **(Operators Name)**, classify this event and complete the station specific initial notification form in accordance with EP-AA-112-100-F-01 SHIFT EMERGENCY DIRECTOR CHECKLIST. ***"This is a Time Critical JPM"***

Emergency Meteorology Report

Last 15 Minute Emergency Meteorology Report Data Data from Nine Mile Point Met System Date: XX/XX/XXXX Time (Local): XX:XX:XX							
Elevated				Ground			
200'	Wind Speed (Main)	37	(mph)	30'	Wind Speed (Main)	32	(mph)
200'	Wind Dir From (Main)	352	(deg)	30'	Wind Dir From (Main)	350	(deg)
200'	Delta Temperature	0.05	(deg F)	100'	Delta Temperature	0.7	(deg F)
	Stability Class	E			Stability Class	C	
30'	Air Temperature	50	(deg F)		Precipitation (15 min)	1.02	(in)

Training Id: **2023 NRC NMP1 Simulator JPM S-A** Revision: **0.0**

Title: **Shift Reactor Building Operating Exhaust and Supply Fans (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/08/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-10, Reactor Building Heating, Cooling, and Ventilating System
2. NUREG 1123 K/A 288000 A4.01, (3.1/2.9)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to operate the Reactor Building Ventilation System.

   b. This JPM is considered alternate path, because one of the newly started fans displays abnormal operating parameters which should prompt the operator to restore reactor building ventilation back to a functioning lineup.

   c. Critical steps are annotated in the Evaluator standard column with a bolded ***PASS/FAIL**.

2. Task Information:

   a. N1-288001-01002

   b. K/A 288000 A4.01, (3.2)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. Initialize simulator to IC-231 (244)
   b. RX Building Supply and Exhaust Fans #11 in service in slow speed.
   c. RB VENT JPM SETUP
      - Event trigger – set TRG 3 to ZDHVF02T==0
      - Overrides assigned to TRG 3 (Delete overrides when Supply Fan 12 switch is taken to STOP.)
        - DI-5485, INOP 2L11/202-02A POS A, FINAL = On
          (RB Supply Fan 12 & Inlet Damper)
        - AO-1257, 2L1/202-02C, Analog Value = 1
          (React Bldg supply Fan 12 AMP meter)
        - DO-9525, OFF 202-02 G, DV = OFF
          (Reactor Bldg Supply Fan 12 Green light OFF)
        - DO-9526, OFF 202-02 R, DV = ON
          (Reactor Bldg Supply Fan 12 SLOW Red light ON)
        - DO-9512, OFF 202-04 G, DV = OFF, DT = 10 sec
          (Reactor Bldg Supply Fan 12 Inlet Damper Green light OFF)
        - DO-9513, OFF 202-04 R, DV = ON
          (Reactor Bldg Supply Fan 12 Inlet Damper Red light ON)

6. JPM Setup (if required)

   a. No steps need to be marked up.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • Reactor Building Exhaust Fan #11, and Reactor Building Supply Fan # 11 are in service. • All Reactor Building Ventilation Fans in service are operating in slow speed. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, Shift Reactor Building Ventilation to place Reactor Building Exhaust and Supply Fans #12 in service IAW N1-OP-10 Section F.1.0 and F.2.0.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-OP-10 obtained. Precautions & limitations reviewed & section F.1.0 and F.2.0 referenced.
3.	Verify operating RX Building supply and exhaust fans in SLOW. **Role Play**: If contacted as Chemistry that Operations are shifting Reactor building Ventilation Fans, acknowledge the report.	P (F.1.2.a)	SAT / UNSAT **STD:** Visually observe REACTOR BLDG SUPPLY FAN 11 and REACTOR BLDG EXHAUST FAN 11 fans in SLOW red slow light illuminated.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Start REACTOR BLDG EXHAUST FAN 12 on SLOW	P (F.1.2.b)	***PASS / FAIL** **STD:** Rotate REACTOR BLDG EXHAUST FAN 12 control switch CW to the slow position observe red slow light illuminated, green light off.
5.	Confirm damper 202-07, REACTOR BLDG EXHAUST FAN 12 OUTLET DAMPER open.	P (F.1.2.c)	SAT / UNSAT **STD:** Observe 202-07 open red light on, green light off.
6.	Stop REACTOR BLDG EXHAUST FAN 11. *Annunciators L1-3-4 and L1-2-5 in alarm* *RB dp indication returns to normal*	P (F.1.2.d)	***PASS / FAIL** **STD:** Rotate REACTOR BLDG EXHAUST FAN 11 control switch CCW to the Off position.
7.	Confirm damper 202-08, REACTOR BLDG EXHAUST FAN 11 OUTLET DAMPER closed.	P (F.1.2.e)	SAT / UNSAT **STD:** Observe REACTOR BLDG EXHAUST FAN 11 OUTLET DAMPER closed green light on, red light off.
8.	Confirm normal system flow.	P (F.1.3)	SAT / UNSAT **STD:** Observe annunciator L1-2-5 RB VENT EXH FLOW LOW is clear.
9.	Start REACTOR BLDG SUPPLY FAN 12 on SLOW.	P (F.2.2.b)	***PASS / FAIL** **STD:** Rotate REACTOR BLDG SUPPLY FAN 12 control switch CW to the Slow position observe red slow light illuminated, green light off.
10.	Confirm damper FCV 202-04, REACTOR BLDG SUPPLY FAN 12 INLET DAMPER open.	P (F.2.2.c)	SAT / UNSAT / NA **STD:** Observe 202-04 open red light on, green light off

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
Alternate Path	**Note:** Candidate may not notice amps are low and continue in procedure to secure Fan 11. There are 2 success paths. 1. Low amps identified after Supply Fan 12 start. Candidate performs steps 11,12,13 and 18, with step 13 a critical step. 2. Low amps not identified after Supply Fan 12 start. Candidate performs steps 14,15,16,17,18, with steps 16 and 17 as critical step.		
11.	Identify low amps on REACTOR BLDG SUPPLY FAN 12.	P	SAT / UNSAT / NA **STD:** Observe low amps on Fan 12 (5-10 amps) with Fan 11 amps remaining at normal (~30 amps).
12.	Inform SM of low amps on REACTOR BLDG SUPPLY FAN 12. **Cue:** As SM, concur and allow Fan 11 to remain in service.	P	SAT / UNSAT / NA **STD:** Recommend Fan 11 remains in service and Fan 12 be shutdown.
13.	Secure REACTOR BLDG SUPPLY FAN 12. **Note:** Booth operator, delete all overrides when Supply Fan 12 is secured.	P	***PASS / FAIL / NA** **STD:** Rotate REACTOR BLDG SUPPLY FAN 12 control switch CCW to the Off position.
14.	Secure REACTOR BLDG SUPPLY FAN 11 **Cue:** If directed from L1-2-4 report the following, as the operator in the field: • Heating Unit is tripped • Inlet Filter differential pressure is normal	P (F.2.2.d)	SAT / UNSAT / NA **STD:** Rotate REACTOR BLDG SUPPLY FAN 11 control switch CCW to the Off position and observe red slow light off, green light illuminated. Observe annunciator L1-3-4 and L1-2-4 alarm Observe RB dp indication rises indicating high negative dp

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
15.	Report abnormal indication to SM **Cue:** As SM, concur and allow Fan 11 to be returned to service and Fan 12 to be shutdown.		SAT / UNSAT / NA **STD:** Recommend returning Fan 11 to service and securing Fan 12
16.	Start REACTOR BLDG SUPPLY FAN 11 on SLOW. *Annunciators L1-3-4 and L1-2-4 clear* *RB dp indication returns to normal*		***PASS / FAIL / NA** **STD:** Rotate REACTOR BLDG SUPPLY FAN 11 control switch CW to the Slow position observe red slow light illuminated, green light off.
17.	Secure REACTOR BLDG SUPPLY FAN 12 **Note:** Booth operator, delete all overrides when Supply Fan 12 is secured. **Note:** Applicant may reference the OP to secure fan 12		***PASS / FAIL / NA** **STD:** Rotate REACTOR BLDG SUPPLY FAN 12 control switch CCW to the Off position and observe red slow light off, green light illuminated.
18.	Notify US/SM that REACTOR BLDG SUPPLY FAN 11 has been returned to service with normal dp and REACTOR BLDG supply FAN 12 is secured. **Cue:** Acknowledge report.	P	SAT / UNSAT / NA **STD:** Proper communications used.
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	While placing Supply Fan 12 into service, abnormal operation was identified on Supply Fan 12. Secured Supply Fan 12 and placed Supply Fan 11 in service. Supply Fan 11 and Exhaust Fan 12 are running.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • Reactor Building Exhaust Fan #11, and Reactor Building Supply Fan # 11 are in service.

INITIATING CUE	**(Operators Name)**, Shift Reactor Building Ventilation to place Reactor Building Exhaust and Supply Fans #12 in service IAW N1-OP-10 Section F.1.0 and F.2.0.

Training Id: **2023 NRC NMP1 Simulator JPM S-B** Revision: **0.0**

Title: **Place 11 Shutdown Cooling Loop in Service (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/08/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-4, Shutdown Cooling System
2. NUREG 1123 K/A 205000, A4.01, (3.9)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to operate the SDC system. The operator will attempt to put SDC system 11 in service.

   b. This JPM is considered alternate path because shortly after a SDC pump is started, it will trip. The operator will be expected to make a recommendation, based on plant conditions, to place 12 SDC loop in service.

   c. Critical steps are annotated in the Evaluator standard column with a bolded ***Pass/Fail**.

2. Task Information:

   a. N1-205000-01002

   b. K/A 205000, A4.01, (3.9)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. Initialize simulator to IC 232
   b. Verify SDC temperature recorder on.
   c. Update 70-49, 70-54, and 70-58 status to “4”.
   d. Verify recirc suction temperature is displayed (computer point A427).
   e. Verify SDC is removed from service (TCVs closed, pumps secured, IVs closed, inlet BVs closed).
   f. Verify SDC Pump 13 in PTL and info/caution tagged
   g. Verify SDC 13 suction valve is info/caution tagged (38-05)
   h. Verify Malfunction SC01C inserted
   i. Verify Malfunction SC01A on TRG 1 with 30 second TD
   j. Verify TRG 1 condition is “ZDSCPSTR(1)==1”
   k. Verify the following remotes are preset:
      - SC01 = close
      - SC02 = installed
      - SC03 = close
   l. Verify remotes SC04A(B)(C) = 100% are preset.
   m. Verify overrides are preset:
      - DI-4979, INOP 5K20/38-05A POS C, DV = Off
      - DO-8923, 38-01 G, DV = Off

6. JPM Setup (if required)

   a. N1-OP-4, E.3.1 marked complete.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The Reactor is shutdown with all control rods inserted. • Reactor pressure is less than 120 psig. • N1-OP-4 has been completed through step E.3.1 for placing Shutdown Cooling in service. • Shutdown Cooling has been filled and vented within the last 24 hours and does not require further filling or venting. • Shutdown Cooling IV fuses/breakers have been installed. • Cooling Water has been placed in service per section E.2.0 • SDC pump 13 is OOS for maintenance. • Reactor water level is being monitored by another operator. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, place Shutdown Cooling loop 11 in service per N1-OP-4 starting at step E.3.2.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-OP-4 obtained, precautions & limitations reviewed, & section E.3.0 referenced
3.	Open the following valves: (Step 3.2)		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
3a.	Open 38-03, SDC VALVE 11 PUMP SUCTION	P (E.3.2)	***PASS / FAIL** **STD:** Opens 38-03 by rotating control switch CW to OPEN
3b.	Open 38-04, SDC VALVE 12 PUMP SUCTION	P (E.3.2)	***PASS / FAIL** **STD:** Opens 38-04 by rotating control switch CW to OPEN
3c.	Open 38-05, SDC VALVE 13 PUMP SUCTION **Note:** Candidate may request an SQR one-time procedure change be processed before proceeding. **Cue:** Inform the Operator that the step can be left open and to proceed without opening valve 38-05.	P (E.3.2)	SAT / UNSAT **STD:** Recognizes 38-05 is tagged closed
4.	Fill AND vent the SDC System by performing the following:	P (E.3.3)	SAT / UNSAT **STD:** Determines fill and vent not required due to initial conditions
5	If RCS pressure is less than 120 psig or RCS pressure will be less than 120 psig with one hour Then mark step E.3.5 N/A ***Note**: The operator should mark E.3.5 as N/A due to RCS pressure being less than 120 psig as directed by step E.3.4.*	P (E.3.4)	SAT / UNSAT **STD:** Determines RCS pressure is less than 120 psig due to initial conditions or simulator setup

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
6.	Verify all rods inserted UNLESS directed by EOPs	P (E.3.6)	SAT / UNSAT **STD:** Determines all rods are inserted per initial conditions or simulator setup
7.	IF SDC IV fuses AND breakers have NOT been installed, THEN perform the following:	P (E.3.7)	SAT / UNSAT **STD:** Determines SDC IV fuses and breakers have been installed per initial conditions or simulator setup
8.	Open IV-38-02, SDC SYSTEM IN IV 12 (OUTSIDE)	P (E.3.8)	***PASS / FAIL** **STD:** Opens 38-02 by rotating control switch CW to OPEN
9.	WHEN Reactor pressure is less than 120 psig, un-isolate Shutdown Cooling System as follows:	P (E.3.9)	
9a	Monitor Reactor vessel level	P (E.3.9.a)	SAT / UNSAT **STD:** Determines another operator is monitoring Reactor water level per initial conditions
9b	IF Reactor vessel level begins to go down WHILE un-isolating Shutdown Cooling System, THEN isolate Shutdown Cooling System AND determine cause of reduction in Reactor Vessel level	P (E.3.9.b)	SAT / UNSAT **STD:** Determines Reactor water level is stable in subsequent steps

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
9c	Open 38-13, SDC SYSTEM OUT IV 1 (INSIDE)	P (E.3.9.c)	***PASS / FAIL** **STD:** Opens 38-13 by rotating control switch CW to OPEN
9d	Open 38-01, SDC SYTEM IN IV 11 (INSIDE)	P (E.3.9.d)	***PASS / FAIL** **STD:** Opens 38-01 by rotating control switch CW to OPEN
10.	If system was NOT in-service within last 24 hours OR system was NOT filled AND vented with 24 hours, then vent shutdown cooling pumps using the following valves:	P (E.3.10)	SAT / UNSAT **STD:** Determines venting not required due to initial conditions
11.	If system was NOT in-service within last 24 hours OR system was NOT filled AND vented with 24 hours, then vent heat exchangers using the following valves:	P (E.3.11)	SAT / UNSAT **STD:** Determines venting not required due to initial conditions
12.	Verify open the following valves: • 38-134, SDC PUMP RECIRC VALVE 11 • 38-131, SDC PUMP RECIRC VALVE 12 • 38-128, SDC PUMP RECIRC VALVE 13 **Note:** Candidate may disregard 38-128 because the associated pump is tagged out.	P (E.3.12)	SAT / UNSAT **STD:** Observes green light off, red light on for all

13.	Start 11 SDC Pump as follows: (Step E.3.13)	**Note:** Pump Seal was NOT discovered de-staged (E.3.13.b)	
13a	Verify Cooling Water in Service per N1-OP-4 Section E	P (E.3.13.a)	SAT / UNSAT **STD:** Determines this is already complete per the initial conditions.
13b	If respective pump seal was discovered de-staged then prior to placing SDC Loop in service, fill and vent associated SDC Loop per Section H. **Role Play**: if asked, the pump seal was **NOT** discovered de-staged.	P (E.3.13.b)	SAT / UNSAT **STD:** Determines this is N/A based on information provided by the evaluator.
13b	Verify SD COOLING TCV 11 manual controller selected for zero output demand	P (E.3.13.c.1))	SAT / UNSAT **STD:** Observes SD COOLING TCV 11 manual controller selected for zero output demand
13c	Place 11 SDC Pump Control Switch in START UNTIL 11 SDC PUMP running light is lit	P (E.3.13.c.2))	***PASS / FAIL** **STD:** Starts SDC pump 11 by rotating control switch CW to START
Alternate Path	11 SDC pump will fail, initiating the alternate path.		
13d	Open 38-09, SD COOLING TCV 11, approximately 10%: **NOTE:** 1 minute after 11 SDC pump in service, verify tripped 11 SDC pump (event trigger). Alarm K3-1-1, SDC Pump 11 trip, comes in on the pump trip. The alarm response procedure gives direction to start another pump.	P (E.3.13.c.3))	***PASS / FAIL / NA** **STD:** Opens 38-09 by rotating knurled knob CW **Note:** Step may be NA if pump trips prior to executing.

	Cue: If applicant does not make a recommendation to place another SDC pump in service, ask "What would you recommend?" or concur with their recommendation. **Role Play:** If candidate recommends placing **SDC Loop 12** in service, direct them to place SDC Loop 12 into service. **Role Play:** If candidate asks about normalizing **SDC loop 11**, tell them to leave SDC loop 11 as is.		
14.	Start 12 SDC Pump as follows: (E.3.13.d)	**Note:** Pump Seal was NOT discovered de-staged (E.3.13.b)	
14a	Verify SD COOLING TCV 12 manual controller selected for zero output demand	P (E.3.13.d.1))	SAT / UNSAT **STD:** Observes SD COOLING TCV 12 manual controller selected for zero output demand
14b	Place 12 SDC Pump Control Switch in START UNTIL 12 SDC PUMP running light is lit (Step 3.11.2.o)	P (E.3.13.d.2))	***PASS / FAIL** **STD:** Starts SDC pump 12 by rotating control switch CW to START
14c.	Open 38-10, SD COOLING TCV 12, approximately 10% SDC Loop:	P (E.3.13.d.3))	***PASS / FAIL** **STD:** Opens 38-10 by rotating knurled knob CW to greater than 5% open
15.	If reactor water flashing occurs in SDC System, reduce reactor water flow via selected SDC cooling TCV and maximize RBCLC cooling water flow. **Cue:** No flashing observed.	P (E.3.13.f)	SAT / UNSAT **STD:** Pump amp indicator observed as steady.

16.	Adjust 38-10, SDC COOLING TCV 12 for gradual warmup of the system and to achieve desired cooldown rate of less than or equal to 75^0F/hr. **NOTE:** Operator will monitor temperatures on panel recorder. **NOTE:** Operator may choose not to make any further adjustments based on the rate at which the loop is warming up with 38-10 10% open. **Cue:** Tell operator no further adjustments in the system are required.	P (E.3.13.g)	SAT / UNSAT **STD:** Rotate knob on controller 38-10 CW or CCW as required for a gradual warmup as indicated on 38-136B.
18.	Inform SM SDC Loop 12 in service **Cue:** Acknowledge report	P	SAT / UNSAT
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	While placing SDC loop into service the applicant recognizes failure of Shutdown Cooling Pump 11. The applicant will place Shutdown Cooling pump 12 in service.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The Reactor is shutdown with all rods in. • Reactor pressure is less than 120 psig. • N1-OP-4 has been completed through step E.3.1 for placing Shutdown Cooling in service. • Shutdown Cooling has been filled and vented within the last 24 hours and does not require further filling or venting. • Shutdown Cooling IV fuses/breakers have been installed. • Cooling Water has been placed in service per section E.2.0 • SDC pump 13 is OOS for maintenance. • Reactor water level is being monitored by another operator.

INITIATING CUE	**(Operators Name)**, place Shutdown Cooling loop 11 in service per N1-OP-4 starting at step E.3.2.

Constellation

Training Id: **2023 NRC NMP1 Simulator JPM S-C** Revision: **0.0**

Title: **Secure a Reactor Recirculation Pump, Pump Trips (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/08/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-1, Nuclear Steam Supply System
2. NUREG 1123 K/A 202001 A4.01, (4.0)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to operate controls associated with the Reactor Recirculation System.

   b. This JPM is considered alternate path because when the operator reduces flow on the pump to be secured, the pump will trip, requiring the operator to respond in accordance with the SOP.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-202001-01002

   b. K/A 202001 A4.01, (4.0)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)
    a. The reactor is in a power operating condition at approximately 90% Reactor power
    b. Initialize simulator to IC 233
    c. Verify the following malfunctions are preset:
        - RR01A, RR Pump 11 27x Short Drive Bkr Trip, **TRG 1**
        - **TRG 1** event trigger action set to "hzarrfi(1)<0.44" (Causes drive breaker to trip when individual loop flow reaches $8x10^6$ lbm/hr)

6. JPM Setup (if required)
    a. Verify Reactor power is at approximately 90%
    b. Verify sufficient copies are available of N1-OP-1 P&L's and section H.1

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The reactor is operating at 90% power • Reactor Recirculation Pump 11 is being removed for maintenance • Reactor power will be allowed to lower for the evolution • Recirculation pump 11 will remain idle and unisolated • Another operator is monitoring computer points during this evolution **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, Remove Recirc Pump 11 from service in accordance with N1-OP-1, section G.2.0

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-OP-1 obtained.
3.	IF Recirc Pump 11 is in Local Lock, THEN continue at Step G.2.4 **Role Play**: If asked, reply "Recirc Pump 11 is NOT in Local Lock"	P (G.2.1)	SAT / UNSAT **STD:** Determines Recirc Pump 11 is not in Local Lock.
4.	Place RRECIRC PUMP 11 SPEED CONTROL in BAL and null out Deviation Meter (top meter)	P (G.2.2)	SAT / UNSAT **STD:** Verifies RRECIRC PUMP 11 SPEED CONTROL in BAL and nulls out Deviation Meter (top meter)

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
5.	Place RRECIRC PUMP 11 SPEED CONTROL AUTO/BAL/MAN switch to MAN	P (G.2.3)	***PASS / FAIL** **STD:** Rotates RRECIRC PUMP 11 SPEED CONTROL AUTO/BAL/MAN switch CW to MAN
6.	Verify open REACTOR R PUMP 11 BYPASS VALVE **Note:** Step G.2.5 is N/A per initial conditions	P (G.2.4)	SAT / UNSAT **STD:** Verifies open REACTOR R PUMP 11 BYPASS VALVE by observing red light on, green light off
7.	IF present power level is NOT to be maintained, THEN reduce flow on Reactor Recirc Pump 11 to 6 to 8 x 10^6 lbm/hr	P (G.2.6)	***PASS / FAIL** **STD:** Slowly reduces Recirculation pump 11 flow to 6 to 8x10^6 lbm/hr by rotating knob CCW
Alternate Path	The alternate path starts when the operator is lowering pump flow. The recirc pump will trip requiring entry into N1-SOP-1.3, Recirc Pump Trip at Power.		
8.	Recognize Recirc Pump 11 trip and required entry in to N1-SOP-1.3, RECIRC PUMP TRIP AT POWER. **Note**: Annunciator F2-1-1 will alarm when Recirc Pump 11 trips	P	SAT / UNSAT **STD:** Enters N1-SOP-1.3
9.	Verify proximity to restricted zone using P/F map for remaining loop operation	P	SAT / UNSAT **STD:** Using the four loop power to flow map, confirms the restricted zone has not been entered.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
10.	Verify ALL operating Recirculation Pumps are within the following limits: Generator MW: 0.790 MW Generator Amps: 240 A RRP Flow: 16.8 x 106 lbm/hr continuous Generator Frequency: 11.5 Hz to 56 Hz **Note**: the limits listed above are maximum operating limits and should not be exceeded.	P	SAT / UNSAT **STD:** Verifies recirc pumps 12-15 are operating within required limits.
11.	Notify SM that: APRMs are inoperable. 8 hr ENS report is required **Role Play**: Acknowledge the report	P	SAT / UNSAT **STD:** Makes required notifications to SM.
12.	Close RECIRC PUMP 11 DISCHARGE VALVE **Note:** Power is expected to rise ~ 3% **Role Play**: **if** the operator informs the US that power is expected to rise ~ 3%, **then** acknowledge the report.	P	***PASS / FAIL** **STD:** Closes REACTOR R PUMP 11 DISCHARGE VALVE by rotating control switch CCW and holding until green light is on, red light is off, observes lowering loop flow.
13.	**Override Statement:** IF RECIRC PUMP 11 DISCHARGE VALVE is closed, THEN Hold open for 2-3 seconds RECIRC PUMP 11 DISCHARGE VALVE.	P	SAT / UNSAT **STD:** Rotates CW and holds in OPEN position for 2 to 3 seconds, REACTOR R PUMP 11 DISCHARGE VALVE, observes red light on, green light on.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
14.	Notify SM that APRMs are operable	P	SAT / UNSAT **STD:** Notifies SM that APRMs are operable.
15.	Green Flag RECIRC PUMP 11 SB switch	P	SAT / UNSAT **STD:** Green Flags RECIRC PUMP 11 SB switch by rotating CCW
16.	Place RECIRC PUMP 11 SPEED CONTROL AUTO/BAL/MAN switch to MAN **Note:** This step was performed earlier in the JPM	N/A	SAT / UNSAT **STD:** Verifies RECIRC PUMP 11 SPEED CONTROL AUTO/BAL/MAN switch in MAN
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	*While attempting to shutdown Recirc Pump 11, the pump tripped as Recirc flow was being lowered. The applicant entered and executed N1-SOP-1.3, RECIRC PUMP TRIP AT POWER. Actions completed for a Recirc Pump trip at power with its associated discharge valve closed.*

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The reactor is operating at 90% power • Reactor Recirculation Pump 11 is being removed for maintenance • Reactor power will be allowed to lower for the evolution • Recirculation pump 11 will remain idle and unisolated • Another operator is monitoring computer points during this evolution

INITIATING CUE	**(Operators Name)**, Remove Recirc Pump 11 from service in accordance with N1-OP-1, section G.2.0

Constellation

Training Id: **2024 NRC NMP1 Sim JPM S-D** Revision: **0.0**

Title: **Respond to a Loss of Service Water (PRA) (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 10 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-SOP-18.1, Loss of Service Water
2. NUREG 1123 K/A 295018, AA1.01, (3.3)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to safely operate control room systems during a loss of Service Water.

   b. This JPM is considered alternate path because after the standby service water pump is started, it trips, requiring override steps in the SOP to be executed.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **PASS/FAIL**.

2. Task Information:

   a. N1-SOP-18.1-01000, Respond to Service Water Failure (PRA)

   b. K/A 295018, AA1.01, (3.3)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)
   a. Initialize Simulator to IC-234
   b. Verify Service Water pump 11 is red flagged and Service Water pump 12 is green flagged
   c. Verify malfunction CW02B is on trigger 1 with a 10 second time delay
   d. Verify trigger 1 command is set to zdcwpstr(4)==1 (Service Water pump 12 control switch in start)
   e. Verify malfunction CW02A is active

6. JPM Setup (if required)

   a. No steps need to be marked up.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is operating at approximately 100% power. • Service Water pump 11 has tripped on overcurrent. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, enter and execute N1-SOP-18.1 for Service Water Failure.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-SOP-18.1 obtained.
3.	Start standby Service Water pump by placing control switch on Panel H to START **Note:** Service Water pump 12 will trip after a 10 second time delay, requiring an alternate path to execute the override for loss of both Service Water pumps	P	***PASS / FAIL** **STD:** Rotates Service Water pump 12 control switch CW to start, observes red light on, green light off, proper pump amps
Alternate Path	The alternate path starts when Service Water pump 12 trips approximately 10 seconds after the applicant starts the pump. Service Pump 12 tripping will require the applicant to perform the override for "If Neither Service Water Pump can be started".		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Identifies trip of Service Water pump 12	P	SAT / UNSAT **STD:** Observes Service Water pump 12 green light on, red light off, pump amps drop to zero, annunciator H1-2-2 alarms
5.	If neither Service Water pump can be started OR Service Water Header pressure can NOT be restored to greater than 60 psig, then performs the following steps:	P	SAT / UNSAT **STD:** Enters override of N1-SOP-18.1
6.	Start Emergency Service Water pumps	P	***PASS / FAIL** **STD:** Rotates ESW pump 11 control switch CW to start, observes red light on, green light off, proper pump amps ***PASS / FAIL** **STD:** Rotates ESW pump 12 control switch CW to start, observes red light on, green light off, proper pump amps
7.	SCRAM the Reactor AND concurrently execute N1-SOP-1 **Cue:** **When** the applicant has completed actions to scram the reactor, inform them that "*another operator will perform SOP-1 actions. Continue your actions in SOP-18.1.*"	P	***PASS / FAIL** **STD:** Depresses the Reactor Trip 11 and 12 pushbuttons AND rotates the Reactor Mode Switch CW to Shutdown

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
8.	Initiate Emergency Condensers **Cue:** Once the applicant has rotated the Emergency Condenser switches to the OPEN position, inform them that "*another operator will maintain Reactor pressure per N1-EOP-RPV (1-2).*"	P	***PASS / FAIL** **STD:** Rotates 39-05 control switch CW to open and rotates 39-06 control switch CW to open
9.	Close MSIVs		
9a		P	***PASS / FAIL** **STD:** Rotates 01-01 control switch CCW to close
9b		P	***PASS / FAIL** **STD:** Rotates 01-02 control switch CCW to close
9c		P	***PASS / FAIL** **STD:** Rotates 01-03 control switch CCW to close
9d		P	***PASS / FAIL** **STD:** Rotates 01-04 control switch CCW to close
10.	Trip all Rx Recirculation Pumps **Cue:** When the applicant has tripped all Reactor Recirculation pumps inform them that "*another operator will monitor RBCLC and TBCLC temperatures.*"		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
10a		P	***PASS / FAIL** **STD:** Rotates RRP 11 control switch CCW to stop
10b		P	***PASS / FAIL** **STD:** Rotates RRP 12 control switch CCW to stop
10c		P	***PASS / FAIL** **STD:** Rotates RRP 13 control switch CCW to stop
10d		P	***PASS / FAIL** **STD:** Rotates RRP 14 control switch CCW to stop
10e		P	***PASS / FAIL** **STD:** Rotates RRP 15 control switch CCW to stop
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	The applicant attempted to place the standby Service Water pump 12 in service, 10 seconds later Service Water pump 12 trips. The applicant entered and completed N1-SOP-18.1 actions through the override step for a sequential loss of Service Water pumps.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is operating at approximately 100% power. • Service Water pump 11 has tripped on overcurrent.

INITIATING CUE	**(Operators Name)**, enter and execute N1-SOP-18.1 for Service Water Failure.

Constellation

Training Id: **2023 NMP1 NRC Simulator JPM S-E** Revision: **0.0**

Title: **Transfer to the MPR at Power**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-31, Tandem Compound Reheat Turbine
2. NUREG 1123 K/A 241000, A1.01, (4.4)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to manually operate reactor pressure control devices in the control room.

   b. This JPM is NOT considered alternate path.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-248000-01002, Transfer To/From MPR at Power

   b. K/A 241000, A1.01, (4.4)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. Initialize simulator to IC 235 (244)
   b. Verify the EPR is in service

c. Verify MPR Servo Stroke is 8-12% lower than the EPR Servo Stroke

6. JPM Setup (if required)

a. Provide sufficient copies of N1-OP-31 P&Ls and section F.2.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The CRS has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The reactor is operating at approximately 100% power • EPR is in service • Pressure control will be transferred to the MPR • Thermal limits have been verified SAT per N1-OP-31 section H, Operation with One Pressure Regulator Inoperable • An Equipment Operator is standing by at the Front Standard for support **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, transfer Reactor pressure control from the EPR to the MPR in accordance with N1-OP-31, section F.2.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-OP-31 obtained, precautions and limitation reviewed, section F.2.0 referenced
3.	Verify Thermal Limits satisfied per Section H. Operation with one Pressure Regulator Inoperable **Role Play**: If asked report that Thermal Limits have been verified SAT for use of the EPR as a back up regulator. **Note**: Already verified per initial conditions provided	P (F.2.1)	SAT / UNSAT **STD:** Applicant should mark this step as complete based on initial conditions provided.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Record Reactor pressure (from ID77 "Reactor Pressure Suppressed Range" on F Panel)	P (F.2.2)	SAT / UNSAT **STD:** Records Reactor pressure as read on F Panel
5.	Record MPR Bushing Rotation Speed. **Role Play**: When asked report that the MPR Bushing Speed is 31 rpm	P (F.2.3)	SAT / UNSAT **STD:** Applicant should record MPR bushing speed with information provided from the Role Play.
6.	During transfer from EPR to MPR, IF pressure oscillations greater than 5 psi OR greater than 4% APRM oscillations are observed, stop the transfer AND return control to the EPR per subsection F.3.0	P (F.2.4)	SAT / UNSAT **STD:** Monitors Reactor pressure and power during transfer, determines no oscillations occur.
7.	Slowly lower MPR setpoint, move-and-wait manner, until MPR servo position begins to move upscale (E panel)	P (F.2.5)	***PASS / FAIL** **STD:** Rotates MPR setpoint control switch CW to lower, observes MPR servo stroke rise
8.	WHEN MPR servo position approaches EPR servo position, observe MPR assuming control by response of steam pressure, MPR control light and Annunciator A2-4-4 MPR in control	P (F.2.6)	SAT / UNSAT **STD:** Observes MPR assuming control based on Reactor pressure lowering, MPR yellow light on, annunciator A2-4-4 alarming
9.	ASSURE MPR has taken control by slowly lowering MPR setpoint again in move-and-wait manner, UNTIL reactor pressure lowers by 1 to 2 psig **Note:** Reactor pressure may lower by more than 1 to 2 psig due to the relatively coarse nature of the MPR setpoint control switch.	P (F.2.7)	SAT / UNSAT **STD:** Rotates MPR setpoint control switch CW to lower, observes Reactor pressure lower

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
10.	Confirm Reactor pressure steady on MPR	P (F.2.8)	SAT / UNSAT **STD:** Observes Reactor pressure stable
11.	Raise EPR to high stop, 1010 psig or raise EPR setpoint approximately 2 psig, observing NO change in Reactor pressure. **Cue:** Direct the applicant to set the EPR to 1010 psig. **Note:** Raising the EPR setpoint to 1010 psig is a lengthy adjustment. The EPR setpoint control switch may be released and re-gripped during this step. **Cue:** At the evaluator's discretion, when EPR pressure setpoint is greater the 930 psig, inform the candidate, "Time compression. EPR setpoint is 1010 psig".	P (F.2.9)	***PASS / FAIL** **STD:** Rotates EPR setpoint control switch CCW to raise, observes EPR setpoint rise to 1010 psig or approximately 2 psig, releases EPR setpoint control switch when EPR setpoint reaches 1010 psig or EPR setpoint raised by approximately 2 psig.
12.	Confirm EPR light OFF	P (F.2.10)	SAT / UNSAT **STD:** Observes EPR yellow light off
13.	Adjust MPR setpoint to return Reactor pressure to pre-transfer value **Cue:** Another operator will return pressure to the pre-transfer value.	P (F.2.11)	SAT / UNSAT **STD:** Proper communications used
Evaluator Note:	**Cue:** Your task is complete.		

TASK STANDARD	MPR has been placed in service in accordance with N1-OP-31 section F.2.0

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The reactor is operating at approximately 100% power • EPR is in service • Pressure control will be transferred to the MPR • Thermal limits have been verified SAT per N1-OP-31 section H, Operation with One Pressure Regulator Inoperable • An Equipment Operator is standing by at the Front Standard for support

INITIATING CUE	**(Operators Name)**, transfer Reactor pressure control from the EPR to the MPR in accordance with N1-OP-31, section F.2.

Training Id: **2024 NRC NMP1 Simulator JPM S-F** Revision: **0.0**

Title: **Vent Torus through RBEVS**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 10 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-EOP-4.1
2. NUREG 1123 K/A 223001 K1.17, (3.2)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to vent the Torus using RBEVS train 11, in accordance with N1-EOP-4.1, section 1.0.

   b. This JPM is NOT considered Alternate Path.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-EOP-4.1-01001

   b. K/A 223001 K1.17, (3.2)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. The reactor operating at 100% reactor power
   b. Initialize simulator to IC 236
   c. Drywell pressure ~ 1.85 psig as follows:
      i. Take the simulator out of freeze
      ii. Add N_2 to the drywell via the N_2 Makeup and Bleed System until Drywell pressure is approximately 1.85 psig
      iii. After Shutting off N_2 flow, allow Drywell temperature to restore to normal

6. JPM Setup (if required)

    a. Copies of N1-OP-9, Precaution and Limitations and Section H.1.0

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • Drywell Pressure is 1.85 psig. • H_2O_2 is Out of Service • Chemistry sample has identified Hydrogen in the Drywell • N1-EOP-PC, Primary Containment Control, has been entered • Torus water level is below 27 ft. • Offsite releases are expected to stay below ODCM limits during venting **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, vent the Torus using RBEVS train 11, in accordance with N1-EOP-4.1, section 1.0.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** *N1-EOP-4.1, Section 1.0 has been obtained and referenced*
3.	Verify the following valves are closed:	1.1	
	• 201.2-32, DRYWELL N2 MAKE-UP & BLEED ISOL VALVE 11.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 201.2-03, DRYWELL N2 MAKE-UP & BLEED ISOL VALVE 12.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
	• 201.2-33, TORUS N2 MAKE-UP & BLEED ISOL VALVE 11.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 201.2-06, TORUS N2 MAKE-UP & BLEED ISOL VALVE 12.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 201-11, TORUS VENT TO CONDENSER. • **NOTE:** Candidate will likely identify component label in simulator is as "TORUS/DRYWELL…."	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 201-21, DRYWELL & TOR VENT & PURGE FAN INLET BV.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 202-47, EM VENTILATION TIE BV.	P	SAT / UNSAT ***STD:*** *Verifies that the green light is ON and the red light is OFF.*
	• 201.13-74, HCVS INBOARD PRIMARY CONTAINMENT IV **Cue:** Another operator has verified that valve 201.13-74 indicates closed on the HCVS Primary Operating Panel in the Auxiliary Control Room.	P	SAT / UNSAT ***STD:*** *Acknowledges cue using proper communications that IV 210.13-74 has been verified closed*
	• 201.13-71, HCVS OUTBOARD PRIMARY CONTAINMENT IV **Cue:** Another operator has verified that valve 201.13-71 indicates closed on the HCVS Primary Operating Panel in the Auxiliary Control Room.	P	SAT / UNSAT ***STD:*** *Acknowledges cue using proper communications that IV 210.13-74 has been verified closed*

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Close 202-36, EM VENTILATION FROM REACTOR BLDG BV	P 1.2	***PASS / FAIL** ***STD:*** *Unlocks and rotates the keylock selector switch CCW to CLOSE position on L Panel. Verifies Green Light ON, Red Light OFF.*
5.	OPEN 201-18 EM VENTLATION FROM DW & TORUS BV.	P 1.3	***PASS / FAIL** ***STD:*** *Rotates the control switch CW to the OPEN position and verifies RED light ON and GREEN light OFF.*
6.	IF pressure on indicator 201.2-540A, N_2 VENT TO EM VENT PRESS, on L Panel is >0 psig, then perform the following. **Note**: The applicant should verify that indicator 201.2-540A is reading 0 psig and should mark step 1.4 as N/A	N/A 1.4	SAT / UNSAT ***STD:*** *Verifies that indicator 201.2-540A is reading 0 psig and should mark this step as N/A.*
7.	• Line up one loop of EVS: • For loop 11, open 202-37, EM VENTILATION LOOP 11 INLET BV **Note**: based on initial conditions provided the applicant should mark the block for loop 11 and open BV 202-37	P 1.5	***PASS / FAIL** ***STD:*** *Rotates the control switch CW to the OPEN position and verifies RED light ON and GREEN light OFF.*
8.	• Start the selected EVS Fan (System 11).	P 1.6	***PASS / FAIL** ***STD:*** *Rotates the control switch CW to start 202-53 EVS FAN 11. Verifies control switch is RED Flagged, RED light ON and GREEN light OFF.* .

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
9.	Open 201-16, TORUS N_2 VENT & PURGE ISOLATION VALVE 11	P 1.7	***PASS / FAIL** ***STD:*** *Rotates the control switch CW to the OPEN position and verifies RED light ON and GREEN light OFF.*
10.	Using Pull-To-Stop, throttle open 201-17, TORUS N_2 VENT & PURGE ISOLAITON VALVE 12	P 1.8	***PASS / FAIL** ***STD:*** *Rotates the control switch CW in a turn and Pull-to-Stop fashion to slowly OPEN 201-31. Verifies both RED light and GREEN light are ON as the valve is throttled OPEN.*
11.	Adjust 201-17, 201-17, TORUS N_2 VENT & PURGE ISOLAITON VALVE 12, as necessary to maintain EVS flow <1600 cfm.	P 1.9	***PASS / FAIL** ***STD:*** *Verifies flow rate is ≤1600 CFM on EMER VENT FLOW 11 flow meter.*
Note	Task will be complete when flow rate of ≤ 1600 CFM has been established.		
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	Torus venting in progress through the Reactor Building Emergency Ventilation system in accordance with N1-EOP-4.1, Section 1.0.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • Drywell Pressure is 1.85 psig. • H_2O_2 is Out of Service • Chemistry sample has identified Hydrogen in the Drywell • N1-EOP-PC, Primary Containment Control, has been entered • Torus water level is below 27 ft. • Offsite releases are expected to stay below ODCM limits during venting

INITIATING CUE	**(Operators Name)**, vent the Torus using RBEVS train 11, in accordance with N1-EOP-4.1, section 1.0.

Training Id: **2024 NRC NMP1 Simulator JPM S-G** Revision: **0.0**

Title: **Adjust Generator Reactive Output (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/13/24
Validated By	Tim Heagerty	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 10 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-OP-32
2. N1-SOP-33B.1
3. NUREG 1123 K/A 700000 AA2.11, (3.5)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to raise Main Generator reactive loading when requested by Power Control in accordance with N1-OP-32, section F.1.0

   b. This JPM is considered alternate path because once the reactive loading has been adjusted a grid disturbance on the 345Kv will occur. The operator will be required to execute N1-SOP-33B.1 to scram the reactor and stabilize the plant.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-SOP-33B.1-01001

   b. K/A 700000 AA2.11, (3.5)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. The reactor operating at 100% reactor power
   b. Initialize simulator to IC 237
   c. Set malfunction **EG11**, 345KV Power Grid Transient, SV =335, RT = 2 min on **TRG 1**
   d. Set up Trigger 1 on an Event Trigger “hzaegvare > 0.612)”
      i. This event trigger will insert Trigger 1 when the MVARs meter is ~ 110 MVAR

6. JPM Setup (if required)

    a. Copies of N1-OP-32, Precaution and Limitations and Section F.1.0

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • Unit 1 is at 100% power • Power Control has requested NMP1 to raise reactive loading by 50 MVAR **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, raise Main Generator reactive loading by 50 MVAR in accordance with N1-OP-32, section F.1.0

START TIME	

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** *N1-OP-32, Section F.1.0 has been obtained and referenced*
3.	At E console, ADJUST EXCITATION switch to RAISE MVARS as requested by System Power Control **Note**: It is ok for the Applicants to overshoot the band while attempting to establish the requested band from Power Control as long as they make the appropriate adjustments to establish MVARs in the requested band.	P (F.1.1)	***PASS / FAIL** ***STD:*** *In accordance with N1-OP-32 section F. Observe limitations described in step F.2.1. Rotate EXCITATION switch in the clockwise direction to raise MVARs to a band of 120 to 140 MVARs..*
Evaluator Note:	When MVAR loading is raised 50 MVAR above the initial conditions (or at the lead evaluators discretion) insert **TRG1** EG11, 345KV POWER GRID TRANSIENT, SV=335, RT = 2 min.		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
Alternate Path:	Annunciator A6-3-3 345 KV SYS FREQUENCY HIGH-LOW and/or A6-2-6 345 KV BUS VOLTAGE HIGH-LOW alarm. The operator should recognize these are entry conditions to N1-SOP-33B.1 MAJOR 345 KV GRID DISTRUBANCES. Frequency variation is greater than +/- 1.9 Hz with FIRST STAGE BOWL PRESSURE not in alarm, which requires a reactor SCRAM and Turbine Trip.		
4.	Observe and report A6-3-3 345 KV SYS FREQUENCY HIGH-LOW and/or A6-2-6 345 KV BUS VOLTAGE HIGH-LOW alarm. Recommend entry into N1-SOP-33B.1. ● Instructor cue *"(operator) execute N1-SOP-33B.1"*	P	SAT / UNSAT **STD:** Proper communications used
5.	Enters N1-SOP-33B.1, identifies override conditions are met for scramming the reactor and verifying turbine trip.	P	SAT / UNSAT **STD:** *N1-SOP-33B.1, has been obtained and referenced*
6.	Depress REACTOR TRIP CH 11 / CH 12 pushbuttons	P (N1-SOP-33B.1 override)	***PASS / FAIL** ***STD:*** *At E console, depress REACTOR TRIP CH 11/12 pushbuttons to SCRAM the reactor in accordance with N1-SOP-33B.1 override and N1-SOP-1.*
7.	Place MODE SWITCH in SHUTDOWN	P (N1-SOP-33B.1 override)	***PASS / FAIL** ***STD:*** *At E console, place the Mode Switch in SHUTDOWN in accordance with N1-SOP-33B.1 override and N1-SOP-1.* .

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
8.	Depress UNIT EMERGENCY TRIP pushbutton (or VERIFY Turbine Trip occurred)	P (N1-SOP-33B.1 override)	SAT / UNSAT ***STD:*** *At E console (or A panel), depress the Unit Emergency Trip pushbutton to trip the Main Turbine (or verify a Turbine Trip has occurred). This action will automatically occur following a reactor SCRAM above 35% reactor power, however per N1-SOP-33B.1 the operator must verify the turbine is tripped.*
Evaluator Note:	The operator will recommend entry into N1-SOP-1 Reactor SCRAM and N1-SOP-31.1 Turbine Trip. Another Operator will perform the actions of N1-SOP-1 and N1-SOP-31.1.		
9.	Notifies Unit Supervisor override actions of N1-SOP-33B.1 are complete. The reactor is scrammed and turbine is tripped. **Cue:** *"Understand, reactor is scrammed and turbine is tripped. Another operator will be performing the actions of N1-SOP-1 and N1-SOP-31.1"*	S (N1-SOP-33B.1 override)	SAT / UNSAT **STD:** Proper communications used
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	The initial task is for the operator to raise MVAR loading at the request of Power Control in accordance with N1-OP-32. Once MVAR loading is raised, a 345 kV grid disturbance will be experienced which requires entry into N1-SOP-33B.1 Major 345 kV Grid Disturbances. The magnitude of the grid disturbance is greater than +/- 1.9 Hz which requires a reactor SCRAM and turbine trip in accordance with the override statement.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • Unit 1 is at 100% power • Power Control has requested NMP1 to raise reactive loading by 50 MVAR

INITIATING CUE	**(Operators Name)**, raise Main Generator reactive loading by 50 MVAR in accordance with N1-OP-32, section F.1.0

Training Id: **2024 NRC NMP1 Simulator JPM S-H** Revision: **0.0**

Title: **Lineup and Inject Containment Spray Raw Water into Core Spray Loop 11 (RO Only)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/24
Validated By	Ken Graham	03/29/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 10 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-EOP-1, Attachment 5, Emergency Cooling System
2. NUREG 1123 K/A 209001 A4.01, (4.3)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to lineup and inject Containment Spray Raw Water to Core Spray Loop 11 per N1-EOP-1, Attachment 5.

   b. This JPM is NOT considered alternate path.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-2226001-01019

   b. K/A 209001 A4.01, (4.3)

3. Evaluation / Task Criteria

Evaluation Method	Perform
Evaluation Location	Simulator
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Simulator

5. Simulator Setup (if required)

   a. The reactor is in a shutdown condition (Post-scram)
   b. Initialize simulator to IC 238
   c. Verify inserted malfunctions RR29 and CU01 at 100%
   d. Verify inserted malfunctions CS01A and CS01B
   e. Verify Core Spray and Core Spray Topping Pumps 112 are in PTL with a Caution/Info tag hanging

f. Take appropriate EOP actions (bypass ADS, maximize injection with LP and CRD, Control Containment Spray, initiate ECs, open 4 ERVs, install N1-EOP-1 Attachment 4 Core Spray jumpers)
g. Verify inserted remote CT03A at 10% *(This remote will not show when the simulator is reloaded)*
h. Verify Core Spray and Core Spray Topping pumps 111 are red flagged and not running (tripped)
i. Verify valves 40-10 and 40-11 are OPEN

6. JPM Setup (if required)

   a. No steps need to be marked up.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant was operating at 100% power • A LOCA has occurred • Core Spray Loop 112 is OOS for maintenance • Core Spray loop 111 pumps have tripped • Core Spray jumpers have been installed per N1-EOP-1, Att. 4. • RPV level cannot be maintained above -126” • Core Spray flow for both loops cannot be established ≥ 180 x 10^4 lbm/hr **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, Lineup and inject Containment Spray Raw Water to Core Spray Loop 11 per N1-EOP-1, Attachment 5.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-EOP-1, Attachment 5 has been obtained and referenced.
3.	Verify at least one Core Spray Pump set injecting, if available, into the RPV through Core Spray Loop 12.	P (3.3.1)	SAT / UNSAT **STD:** Determines both Core Spray 12 pump sets injecting into the RPV based on referencing initial conditions or by observing Core Spray 12 pump Red Lights ON, Green Lights OFF, and Core Spray Isolation Valve Red Lights ON, and Green Lights OFF

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4.	Verify Core Spray Jumpers installed per N1-EOP-1, Attachment 4. **Note**: These jumpers were installed as part of the simulator setup.	P (3.3.2)	SAT / UNSAT **STD:** Applicant should verify Core Spray Jumpers installed by verifying installed jumpers inside the N-Panel.
5.	Place AND hold in STOP positon CORE SPRAY TOPPING PUMP 111	P (3.3.3)	SAT / UNSAT **STD:** Rotates Core Spray Topping Pump 111 control switch CCW to the STOP position
6.	Place in PULL-TO-LOCK CORE SPRAY PUMP 111 **Note**: This pump has malfunction CS01A inserted to simulate the pump tripping on initial start.	P (3.3.4)	SAT / UNSAT **STD:** Rotates Core Spray Pump 111 control switch CCW and pulls to PTL
7.	Release CORE SPRAY TOPPING PUMP 111 to Neutral position	P (3.3.5)	SAT / UNSAT **STD:** Releases Core Spray Topping Pump 111 control switch to the Neutral position
8.	Place AND hold in STOP position CORE SPRAY TOPPING PUMP 112 **Role Play**: Core Spray and Core Spray topping pumps have been tagged out for maintenance. If the applicant informs you this step cannot be accomplished, acknowledge the report and direct the applicant to continue with the next step of the procedure.	P (3.3.6)	SAT / UNSAT **STD:** The operator should mark this step as N/A due the pump being tagged out for maintenance per initial conditions.
9.	Place in PULL-TO-LOCK CORE SPRAY PUMP 112 **Role Play**: Core Spray and Core Spray topping pumps have been tagged out for maintenance. If the applicant informs you this step cannot be accomplished, acknowledge the report and direct the applicant to continue with the next step of the procedure.	P (3.3.7)	SAT / UNSAT **STD:** Core Spray Pump 112 is tagged out for maintenance and is in PTL per the initial conditions. They should mark this step as N/A.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
10.	Release CORE SPRAY TOPPING PUMP 112 to Neutral position **Role Play**: Core Spray and Core Spray topping pumps have been tagged out for maintenance. If the applicant informs you this step cannot be accomplished, acknowledge the report and direct the applicant to continue with the next step of the procedure.	P (3.3.8)	SAT / UNSAT **STD:** Core Spray Pump 112 is tagged out for maintenance and is in PTL per the initial conditions. They should mark this step as N/A.
11.	Open 93-71, CONT SPRAY RAW WATER 111 INTERTIE to Core Spray Loop 11	P (3.3.9)	***PASS / FAIL** **STD:** Rotates 93-71 control switch CCW, observes Red Light ON, Green Light OFF
12.	Verifies 93-25, BV-111 Cont Spray HX Raw Water Outlet closed	P (3.3.10)	SAT / UNSAT **STD:** Observes 93-25 Green Light ON, Red Light OFF
13.	Verify Core Spray Loop 11 Inside IV's are closed	P (3.3.11)	
13a	• Closes 40-10	P (3.3.11)	***PASS / FAIL** **STD:** Rotates the control switch CCW to CLOSE and observes Red Light OFF, Green Light ON for 40-10
13b	• Closes 40-11	P (3.3.11)	***PASS / FAIL** **STD:** Rotates the control switch CCW to CLOSE and observes Red Light OFF, Green Light ON for 40-11

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
14.	Start CONTAINMENT SPRAY RAW WATER PUMP 111 (CSRW)	P (3.3.12)	***PASS / FAIL** **STD:** Rotates Containment Spray Raw Water Pump 111 control switch CW and observes Red Light ON and Green Light OFF. Verifies proper system response.
15.	While monitoring CSRW Pump 111 motor amps, throttle 40-10 and 40-11 as follows A. Maximize flow rate, maintaining motor current <76 amps B. IF current exceeds 76amps, then throttle 40-10 and 40-11 closed as necessary to reduce current below 76 amps **Note**: The evaluator does not have to wait until valves 40-10 and 40-11 are fully open. Once operator demonstrates proficiency at throttling the valves the evaluator can stop the JPM. See Evaluator Note below.	P (3.3.13)	***PASS / FAIL** **STD:** applicant will monitor CSRW pump 111 amps and throttle 40-10 and 40-11 by rotating their respective control switches CW, and then pull out on the control switch to stop the valve at its current position. The applicant will repeat this process until maximum flow has been established from the Containment Spray Raw Water pump.
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	Containment Spray Raw Water Pump 111 is lined up to Core Spray Loop 11 and is injecting to the RPV in accordance with N1-EOP-1, Attachment 5.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant was operating at 100% power • A LOCA has occurred • Core Spray Loop 112 is OOS for maintenance • Core Spray loop 111 pumps have tripped • Core Spray jumpers have been installed per N1-EOP-1, Att. 4. • RPV level cannot be maintained above -126” • Core Spray flow for both loops cannot be established ≥ 180 x 10^4 lbm/hr

INITIATING CUE	**(Operators Name)**, Lineup and inject Containment Spray Raw Water to Core Spray Loop 11 per N1-EOP-1, Attachment 5.

Training Id: **2024 NRC NMP1 Plant JPM P-I** Revision: **0.0**

Title: **Transfer Reactor Trip Bus 141 to I&C Bus 130A**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/2024
Validated By	Ken Graham	04/05/24
Facility Reviewer	Signature on File / Dave Mason	07/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. SA-NM-129-1000 Electrical Safety
2. N1-OP-30.2 Attachment 3
3. NUREG 1123 K/A 295003, AA1.01 (4.0)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to transfer Reactor Trip Bus 141 to I&C Bus 130A per N1-SOP-30.2 Attachment 3.

   b. This JPM is NOT considered alternate path.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-SOP-30.2-04001

   b. K/A 264000, A4.04 3.7/3.7

3. Evaluation / Task Criteria

Evaluation Method	Simulate
Evaluation Location	Plant
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Turbine Building elevation 261'

5. JPM Setup (if required)

   a. Prepare a copy of N1-SOP-30.2, Attachment

   b. Print out a copy of SA-AA-129, Electrical Safety **(provide if requested)**

   c. Print out a copy of SA-NM-129-1000, Electrical Safety **(provide if requested)**

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant is at approximately 50% power • A loss of Power Board 12 has led to the loss of Reactor Trip Bus 141 **Note:** The Electrical Safety PPE requirements for this task have been assessed and are as follows: • Leather gloves • 100% cotton long sleeve shirt and pants OR 100% cotton short sleeve shirt and pants under fire retardant lab coat • Safety glasses or goggles **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, restore power to Reactor Trip Bus 141 from I&C Bus 130A in accordance with N1-SOP-30.2, Attachment 3.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary.	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** N1-SOP-30.2, Attachment 3 has been obtained

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
3.	Confirm I&C Bus 130A power supply is available (PB 13B energized) **Cue**: If the applicant looks at any Power Board voltage indication, indicate that voltage is 600VAC Cue: If the applicant looks at Power Board 13 breakers, indicate breaker position as follows: • PB 13A Feeder – Closed • PB 13 A-B Tie – Closed • PB 13 B-C Tie – Closed • PB 13C Feeder - Open	P (1.1)	SAT / UNSAT **STD:** Determines Power Board 13B is energized by observing voltage present and/or POWERBOARD 13 A-B SECTION TIE BREAKER – closed (TB 277 South)
4.	Open REACTOR TRIP BUS #141 NORMAL SUPPL FROM M.G. SET #141 (TB 277' East) **Cue:** Breaker is in the position you described	S (1.2)	***PASS / FAIL** **STD:** Opens breaker REACTOR TRIP BUS #141 NORMAL SUPPLY FROM M.G. SET #141 by positioning breaker lever down
5.	Close REACTOR TRIP BUS #141 MAINTENANCE SUPPLY from I&C Bus 130A (TB 277' East) **Cue:** Breaker is in the position you described	S (1.3)	***PASS / FAIL** **STD:** Closes breaker REACTOR TRIP BUS #141 MAINTENANCE SUPPLY by positioning breaker lever up
6.	Notify CRO that Rx Trip bus #141 transfer is completed and half scram and Feedwater Heaters may be reset **Role Play**: Acknowledge report, Inform the applicant that the ½ scram has been reset. **Cue:** Another operator will reset Feedwater Heaters 121 - 125	P (1.4)	SAT / UNSAT **STD:** Proper communications used

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	Reactor Trip Bus 141 is energized from I&C Bus 130A in accordance with N1-SOP-30.2, Attachment 3.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant is at approximately 50% power • A loss of Power Board 12 has led to the loss of Reactor Trip Bus 141 **Note:** The Electrical Safety PPE requirements for this task have been assessed and are as follows: • Leather gloves • 100% cotton long sleeve shirt and pants OR 100% cotton short sleeve shirt and pants under fire retardant lab coat Safety glasses or goggles **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, restore power to Reactor Trip Bus 141 from I&C Bus 130A in accordance with N1-SOP-30.2, Attachment 3.

Training Id: **2024 NRC NMP1 Plant JPM P-J** Revision: **0.0**

Title: **Lineup Liquid Poison to inject to RPV from the Demin Tank**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/15/24
Validated By	Ken Graham	04/05/24
Facility Reviewer	Signature on File / Dave Mason	07/22/24

Approximate Duration: 15 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

_____

_____

_____

_____

Evaluators Signature: _____ Date: _____

References

1. N1-EOP-1, Attachment 12
2. NUREG 1123 K/A 295031, EA1.08 (3.9)

Instructor Information

A. JPM Information

1. Description

   a. This JPM tests the operator's ability to lineup the Liquid Poison System for RPV injection from the Demin Tank in accordance with N1-EOP-1, Attachment 12.

   b. This JPM is NOT considered alternate path.

   c. Critical steps are annotated in the Evaluator standard column with a bolded **Pass/Fail**.

2. Task Information:

   a. N1-EOP-1-04002

   b. K/A 295031, EA1.08 (3.9)

3. Evaluation / Task Criteria

Evaluation Method	Simulate
Evaluation Location	Plant
Time Critical Task	No
Alternate Path	No
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Turbine Building

5. JPM Setup (if required)

   a. Prepare a copy of N1-EOP-1, Attachment 12

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant has been scrammed. • N1-EOP-RPV (1-2) has been entered **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, lineup the Liquid Poison System for RPV injection from the Demin Tank in accordance with N1-EOP-1, Attachment 12.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary.	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure **Note:** Valve operations are performed on RB El. 298'	P	SAT / UNSAT **STD:** N1-EOP-1, Attachment 12 is obtained and referenced
3.	Unlock and close 41-05, BV-LIQUID POISON TANK OUTLET **Cue**: the valve is in the position you described **Note**: A VA-1 key is required to unlock this valve.	S (3.1)	***PASS / FAIL** **STD:** 41-05 unlocked and shut (fully clockwise).
4.	Unlock and open the following valves:		

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
4a.	• 41-13, BV-LP PUMP 11 SUCTION FROM DEMIN WATER **Cue**: the valve is in the position you described **Note**: A VA-1 key is required to unlock this valve.	S (3.2, first bullet)	***PASS / FAIL** **STD:** 41-13 unlocked and open (fully counter clockwise).
4b.	• 41-12, BV-LP PUMP 12 SUCTION FROM DEMIN WATER **Cue**: the valve is in the position you described **Note**: A VA-1 key is required to unlock this valve.	S (3.2, second bullet)	***PASS / FAIL** **STD:** 41-12 unlocked and open (fully counter clockwise).
5.	Inform the Control Room, start a Liquid Poison Pump per step 3.3 **Role Play**: Acknowledge the report.	P (3.3)	SAT / UNSAT **STD:** Proper communications used
Evaluator Note:	**Cue:** *Your task is complete.*		

TASK STANDARD	Liquid Poison is aligned to inject water from the Demin Tank into the Reactor Vessel in accordance with N1-EOP-1, Attachment 12.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant has been scrammed. • N1-EOP-RPV (1-2) has been entered **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, lineup the Liquid Poison System for RPV injection from the Demin Tank in accordance with N1-EOP-1, Attachment 12.

Training Id: **2024 NRC NMP1 Plant JPM P-K** Revision: **0.0**

Title: **Lineup Lake Water to Supply the EC Makeup Tanks Using the Electric Fire Pump (Alternate Path)**

Approvals:

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	02/09/24
Validated By	Ken Graham	04/05/24
Facility Reviewer	Signature on File / Dave Mason	7/22/24

Approximate Duration: 20 minutes

Documentation of Performance:

Performer: _____

Evaluator: _____

Start Time: _____ Stop Time: _____ Completion Time _____

Grade: **Pass / Fail**

Comments: _____

Evaluators Signature: _____ Date: _____

References

1. N1-SOP-21.2, Control Room Evacuation
2. NUREG 1123 K/A 295016 AA1.09 (4.0)

Instructor Information

A. JPM Information

1. Description

   a. This JPM simulates a control room evacuation where Emergency Condenser are required for RPV pressure control. This JPM tests the operator's ability to locally operate components associated with maintaining the Emergency Condensers available.

   b. This JPM is considered alternate path because the Diesel Fire Pump will fail upon start, requiring use of the Electric Fire Pump.

   c. Critical steps are annotated in the Evaluator standard column with a bolded ***PASS/FAIL**.

2. Task Information:

   a. N1-SOP-21.2-01001-05

   b. K/A 295016 AA1.09 (4.0)

3. Evaluation / Task Criteria

Evaluation Method	Simulate
Evaluation Location	Plant
Time Critical Task	No
Alternate Path	Yes
LOD >1.0	Yes

4. Recommended Start Location

   a. Unit 1 Screenhouse

5. JPM Setup (if required)

   a. Prepare a copy of N1-SOP-21.2, Section 4.3

   b. Have available, copies of N1-OP-21A, sections H.1.0 and H.2.0.

   c. The applicant will need to simulate the use of a VA-1 key to unlock the valves in this procedure.

B. Read Before Every JPM Performance

1. For the performance of this JPM, I will act as all those you need to talk to. Prior to providing direction to perform this task, I will provide you with the initial conditions and answer any questions. During task performance, I will identify the steps to be simulated, or discuss and provide cues as necessary. (Note, read the next only if conducting a plant JPM). With the exception of accessing panels, no plant equipment will be physically manipulated. Repositioning of devices will be simulated by discussion and acknowledged by my cues.

C. Read Before Each Evaluated JPM

1. This evaluated JPM is a measure of your ability to perform this task independently. The US has determined that a verifier is not available and that additional verification will not be provided.

INITIAL CONDITIONS	Given: • The plant was operating at 100% power. • A control room evacuation has occurred. • Emergency Condenser Makeup Tank levels are low at 6 feet. • Emergency Condenser Makeup cross-connect valve, 60-13, has failed closed. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, raise Emergency Condenser Makeup Tank levels to 10 feet using the Diesel Fire Pump, in accordance with N1-SOP-21.2, Section 4.3.

START TIME	

	PERFORMANCE	**ACT. CODE** P / S / NA	**EVALUATOR**
1.	Provide repeat back of initiating cue **Cue:** Acknowledge repeat back providing correction if necessary.	P	SAT / UNSAT **STD:** Proper communications used
2.	Obtain a copy of the reference procedure and review / utilize the correct section of the procedure	P	SAT / UNSAT **STD:** Obtains copy of N1-SOP-21.2

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
3.	Start at least one of the following Fire Pumps (Screenhouse): • Diesel Fire Pump (Preferred) • Electric Fire Pump **Note:** If the candidate requests an additional procedure to perform the Fire Pump start, give them N1-OP-21A sections H.1.0 and H.2.0. The candidate will then perform additional pre- and post-start actions beyond those listed in the standard, but listed below: • Verify Diesel Fire Pump lubricant level is at Full mark. • Verify Diesel Fire Pump gearcase lubricant level full. • Verify the following: • Engine coolant full • Day tank level 150 gallons or greater • Air tank pressures 11 and 12 > 80 psig • Engine water temperature > 100°F **-OR-** • Verify lubricant levels of Electric Fire Pump is at STANDSTILL LEVEL in top and bottom Bull's Eyes • Verify Electric Fire Pump oil reservoir full **Cue:** When the applicant looks at the indications listed above inform them that the indications are as indicated.	S (SOP-21.2, 4.3.1)	SAT / UNSAT **STD:** Attempts to starts the Diesel Fire Pump by one of the following means: • Rotates control switch counterclockwise to TEST position • Rotates control switch clockwise to the MAN 1 position and depresses the start pushbutton • Rotates control switch clockwise to the MAN 2 position and depresses the start pushbutton

Evaluator Cue:	Report that the Diesel Fire Pump failed to start and the engine is now damaged.
Alternate Path:	The alternate path begins when the operator attempts to start the Diesel Fire Pump. The pump will fail, requiring use of the Electric Fire Pump.

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
Role Play:	If candidate asks for direction how to proceed, direct them to take appropriate action to raise Emergency Condenser Makeup Tank levels to 10 feet.		
4.	Starts the Electric Fire Pump **Cue:** When Electric Fire Pump control switch is taken to START, inform the candidate that the Electric Fire Pump started. **Cue:** If requested, Electric Fire Pump indications are: • Oiler Flow rate = 5 drops per minute • Motor current = 40 amps • Discharge pressure = 140 psig • Strainer D/P = 3.0 psid	S (OP-21A H.1.3 thru H.1.5)	***PASS / FAIL** **STD:** Starts the Electric Fire Pump by rotating control switch clockwise to START
Evaluator Note:	The candidate will proceed to TB 369' for the remaining steps.		
5.	Unlock and throttle open the following valves to maintain level in EC Makeup Tanks:		
5a	100-68, BV – FIRE WATER TO EMERG COND M/U TANK 12 **Cue:** The component is in the position you described	S (SOP-21.2, 4.3.2)	***PASS / FAIL** **STD:** Unlocks 100-68 and removes chain from valve handwheel
	Cue: The valve is in the position you described	S (SOP-21.2, 4.3.2)	***PASS / FAIL** **STD:** Rotates 100-68 handwheel CCW to open valve
	Cue: Once candidate has opened 100-68, report that EC M/U Tank 12 level is 10 feet	S	SAT / UNSAT **STD:** Observes Makeup tank level

	PERFORMANCE	ACT. CODE P / S / NA	EVALUATOR
	Cue: The valve is in the position you described	S	SAT / UNSAT **STD:** Rotates 100-68 handwheel CW to close the valve
5b	100-69, BV – FIRE WATER TO EMERG COND M/U TANK 11 **Cue:** The component is in the position you described	S (SOP-21.2, 4.3.2)	***PASS / FAIL** **STD:** Unlocks 100-69 and removes chain from valve handwheel
	Cue: The valve is in the position you described	S (SOP-21.2, 4.3.1)	***PASS / FAIL** **STD:** Rotates 100-69 handwheel CCW to open valve
	Cue: Once candidate has opened 100-69, report that EC M/U Tank 11 level is 10 feet	S	SAT / UNSAT **STD:** Observes Makeup tank level
	Cue: The valve is in the position you described	S	SAT / UNSAT **STD:** Rotates 100-69 handwheel CW to close the valve
Evaluators Note:	**Cue:** Your task is complete.		

TASK STANDARD	The candidates attempted to fill Emergency Condenser Makeup Tanks to 10 feet using the Diesel Fire Pump (DFP). Once the candidates were unable to start DFP, the candidates successfully started the Electric Fire Pump and filled the Emergency Condenser Makeup Tanks to 10 feet in accordance with N1-SOP-21.2.

STOP TIME	

JPM Handout

INITIAL CONDITIONS	Given: • The plant was operating at 100% power. • A control room evacuation has occurred. • Emergency Condenser Makeup Tank levels are low at 6 feet. • Emergency Condenser Makeup cross-connect valve, 60-13, has failed closed. **Evaluator:** *Ask trainee if he/she has any questions after presenting initial conditions*

INITIATING CUE	**(Operators Name)**, raise Emergency Condenser Makeup Tank levels to 10 feet using the Diesel Fire Pump, in accordance with N1-SOP-21.2, Section 4.3.

Copy ____ of ____

Training Id: **NMP1 NRC 2024 Scenario #1** Revision: **0.0**

Title: **Simulator Scenario #1**

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	1/31/2024
Validated By	Elmer Warner	4/4/2024
	Tim Heagerty	
	Ken Graham	
Facility Reviewer	Signature on File / Dave Mason	7/22/24

References

1. N1-OP-30, 4.16 KV, 600V, 480V, House Service
2. N1-OP-43B, Normal Power Operations
3. N1-ARP-A2, Control Room Panel A2
4. N1-SOP-1.4, Stuck Open ERV
5. N1-SOP-25.2, Fuel Failure or High Activity in Rx Coolant or Off Gas
6. N1-SOP-30.2, Loss of Power Board 12
7. N1-SOP-31.1, Turbine Trip
8. N1-SOP-40.1, Loss of RPS
9. N1-SOP-1, Reactor Scram
10. N1-EOP-RPV, RPV Control for Modes 1 and 2
11. N1-EOP-C2, RPV Blowdown for Modes 1 and 2
12. N1-EOP-RR (1-2), Radioactivity Release Control for Modes 1 and 2
13. N1-EOP-1, NMP1 EOP Support Procedure
14. Unit 1 Technical Specifications
15. EP-AA-1013, Addendum 3, Appendix 1, NMP Unit 1 EAL Wallboard

Instructor Information

A. Scenario Description

Sequence of Events / Expected Crew Response:

The scenario begins at approximately 100% power. Containment Spray Pump 111 is out of service for maintenance. The crew is directed to cross-tie PB 16A to PB 16B. Following the transfer of the Power Boards the crew will then lower reactor power by approximately 5% using Reactor Recirculation Pumps (RRPs) per the provided instructions.

Following the transfer of PB 16A to PB 16B and reactor power being lowered by 5% using RRPs, Reactor Recirculation Pump (RRP) #13 controller will begin to oscillate. The crew will enter N1-SOP-1.5 due to the Reactor Power MW_{th} oscillations. The crew will attempt to take manual control of RRP #13 controller. Once manual control of RRP #13 is unsuccessful the crew will trip RRP #13 and enter N1-SOP-1.3. The SRO will review Technical Specifications and determine that a 1-hour shutdown statement is in effect until the Reactor Recirculation Pump discharge valve is shut.

Next, an ERV will inadvertently open. The crew will respond per N1-SOP-1.4 and close the open ERV **(Critical Task)**. The ERV inoperability will require Technical Specification entry.

Next, a depleted Generator Stator Water Cooling water demineralizer will result in rising conductivity levels in the cooling water. The crew will respond per the Alarm Response procedures. This includes performing an emergency power reduction per N1-SOP-1.1, and eventually scramming the Reactor per N1-SOP-1. When the Generator trips after the scram, Power Board 12 will fail to transfer to reserve power. The crew will execute N1-SOP-30.2, Loss of Power Board 12, to re-energize the power board. Feedwater Pump 11 will trip shortly after the reactor scram.

Following the scram, a Main Steam line break will occur with a Fuel Element Failure. The MSIVs will fail to close both automatically and manually, leading to an un-isolable leak into the Turbine Building. The running Turbine Building ventilation exhaust fan will trip. The crew will start the standby Turbine Building ventilation exhaust fan; however, it will trip after a short time delay. This will allow an un-monitored, ground level release from the Turbine Building. The crew will enter N1-EOP-RR, Radioactivity Release Control. Field reports will indicate off-site release rates approaching the General Emergency level. The crew will perform an RPV Blowdown per N1-EOP-C2 **(Critical Task)**.

1. Termination Criteria
    a. RPV water level controlled in assigned band
    b. RPV Blowdown in progress or complete.

2. Critical Tasks

Critical Task (#1)	**Given an inadvertently open ERV at power, close the ERV or insert a manual scram prior to Torus temperature exceeding 110°F, in accordance with N1-SOP-1.4.**
CT-1.0 Justification:	
Safety Significance	*A manual Reactor scram is required before Torus temperature exceeds 110°F. This reduces the rate of energy production and thus heat input to the Torus. Additionally, this allows evaluating the success of the Reactor scram before boron injection would be required due to Torus temperature in the event of a failure to scram. Closing the ERV prior to the need for the scram avoids the need for these more substantial actions, prevents challenging the plant with a scram, and stops heat input to the Torus.*
Initiating Cue:	*ERV position, ERV acoustic monitors, ERV tailpipe temperature, Torus temperature, Reactor pressure, and steam flow indicate an open ERV. N1-SOP-1.4 provides direction to close the ERV or scram the Reactor.*
Success Path:	*The crew will perform the actions of N1-SOP-1.4 to successfully close the affected ERV.*
Performance Feedback:	*ERV position, ERV acoustic monitors, ERV tailpipe temperature, Torus temperature, Reactor pressure, and steam flow will provide performance feedback regarding success of crew actions to close the ERV. Control rod position and Reactor power will provide performance feedback regarding success of crew actions to scram the Reactor.*
Measurable Performance Standard:	*Pulling ERV fuses, directing an operator to pull ERV fuses in the field, rotating the depressing the manual scram pushbuttons, and/or Mode Switch to SHUTDOWN will provide observable actions for the evaluation team.* ***Bounding Criteria:*** *Based on procedure requirements of N1-SOP-1.4 to scram the reactor prior to Torus temperature exceeding 110 °F.*

Critical Task (#2)	**Given the plant with a primary system discharging outside the primary and secondary containments, which cannot be isolated, and the offsite release rate is projected to exceed the E-Plan "General Emergency" level, the crew will perform an RPV blowdown before the offsite release rate reaches the Emergency Plan "General Emergency" level in accordance with N1-EOP-RR (1-2), and N1-EOP-C2 (1-2).**
CT-2.0 Justification:	
Safety Significance	*With an unisolable main steam isolation valve and a steam leak into the Turbine Building, a primary system is discharging outside both the primary and secondary containment. This discharge is approaching E-Plan general emergency levels which is an indication that all 3 fission product barriers have been breached and that dose to the public is in progress. Blowing down the RPV will both take away the driving head and send the radionuclides through the Torus to be "scrubbed", thus reducing the release to the public.*
Initiating Cue:	*The Offsite release rate has already exceeded the "Alert" level of the Emergency Plan and release rate calculations are projected to exceed the "General Emergency" Emergency Plan level.*
Success Path:	*The crew will perform a RPV blowdown in accordance with N1-EOP-C2 (1-2) to lower pressure within the capacity of all available injection sources.*
Performance Feedback:	*Emergency Condenser and ERV instrumentation will provide indication that these systems are functioning properly once placed in service. Multiple Reactor pressure indicators and annunciators will provide performance feedback regarding the success of the blowdown.*
Measurable Performance Standard:	*Manipulation of Emergency Condenser valve and ERV control switches will provide observable actions for the evaluation team.* ***Bounding Criteria:*** *Based on procedural requirements to perform an RPV Blowdown prior to the offsite release rate reaches the Emergency Plan "General Emergency" level in accordance with N1-EOP-RR (1-2)*

3. Length
    a. ~60 minutes
4. Mitigation Strategy Code
    a. DMS-RR-02, primary system leak outside of primary and secondary containment; fuel failure; offsite release approaching Emergency Plan General Emergency level; RPV Blowdown required.
5. Technical Specifications
    a. TS 3.3.7.b, 15 day LCO
6. EAL Classification
    a. Site Area Emergency per EAL FS1 – Loss or Potential Loss of ANY two barriers
7. Special Orders
    a. None

B. Initial Conditions

1. IC Number

   a. IC-241

2. Presets / With Triggers

   a. Malfunctions

1)	**CT01A,** CT Pump 111 Trip, FINAL = True	**Inserted**
2)	**RR73C**, RRP13 M/A Station Output Signal Oscillation Fail Trigger, FINAL = True	**TRG 1**
3)	**RR73C_A,** _RRP13 M/A Station Output Signal Oscillation Fail Amplitude, FINAL = 3ma, RT = 1 min	**TRG 1**
4)	**RR73C_P,** _RRP13 M/A Station Output Signal Oscillation Fail Amplitude, FINAL = 60 sec, RT = 1 min	**TRG 1**
5)	**AD05A,** ERV 111 Failure – Opens Electrically, FINAL = +c/w F-PNL FUSE	**TRG 2**
6)	**EG13,** Stator Water Cooling Demin Resin Depletion (0-100%), FINAL = 75%	**TRG 3**
7)	**RX01**, Fuel Cladding Failure, FINAL = 34, INITIAL = 10, RT = 5 min, DT = 3 min	**TRG 3**
8)	**ED27,** PB 12 Auto Transfer Failure, FINAL = True	**Inserted**
9)	**FW03A**, Feedwater Pump Trip 11, FINAL = True	**Inserted**
10)	**MS01**, Steam Line Break Outside PC Area, FV=12, IV=5, RT=4:00	**TRG 4**
11)	**HV07E**, TB Exhaust Fan Trip 11, FINAL = True, DT = 2 min	**TRG 4**
12)	**HV07F**, TB Exhaust Fan Trip 12, FINAL = True, DT = 1 min	**TRG 5**
13)	**MS13A**, MSIV FAILS OPEN MS01-01(111), FINAL = 10%	**Inserted**
14)	**MS13C**, MSIV FAILS OPEN MS01-03(112), FV=10%	**Inserted**
15)	**FW44**, FWP11, 12 Excessive Motor Restart Trip Algorithm Bypass, FINAL = True	**Inserted**

   b. Remotes

1)	**AD01A,** ERV 111 IN PLANT Fuses, FINAL = pulled	**TRG 27**
2)	**AD07,** Acoustic Monitor Alarm Reset, FINAL = reset	**TRG 28**
3)	**RP04**, RPS BUS 12 POWER SOURCE, FINAL = MAINT	**TRG 29**
4)	**ED40A,** I&C Bus 130 NC Supply Breaker from IC XFMR(PB13B), FINAL = Open	**TRG 30**

5) **ED40B**, I&C Bus 130 NO Supply Breaker from PB 167A, FINAL= Closed **TRG 30**

c. Overrides

1) **DI-3078**, POS_2 2F29/NG03A POS A, FINAL = Off **Inserted**

d. Annunciators

1) None

e. Event Triggers

Event #	Event Action	Command
TRG 5, Initiates when Turbine Building exhaust fan 12 is started	zdhvtbft(6)==0	**Blank**

f. Equipment Out of Service

1) Containment Spray Pump #111 is out of service with an info/caution tag

g. Support Documentation

1) N1-OP-30 section H.21, completed up to step H.21.1.c

2) ReMA power reduction with Reactor Recirculation Pumps

h. Miscellaneous

1) Verify Power Board 11 has been transferred to Reserve Power per N1-OP-30, Section H.26 prior to crew taking the shift.

SHIFT TURNOVER INFORMATION

ON COMING SHIFT: □ N ■ D DATE: Today

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walkdown (all panels) (SRO, ROs)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

- LCO Status (SRO)
- Shift Turnover Information Sheet

Evolutions/General Information/Equipment Status:

- Reactor power is approximately 100%.
- Containment Spray Pump #111 is out of service for maintenance.
- 15 day LCO 3.3.7.b is in effect for Containment Spray

PART III: Remarks/Planned Evolutions:

- Cross Tie PB 16A to PB 16B per N1-OP-30. The procedure is in progress up to step H.21.1.c. PB 11 will remain aligned to reserve power. JAF has been notified that PB 11 is on Reserve Power. Attachment 4, OP-NM-108-107-1002, has been completed.
- Then, reduce reactor power approximately 5% using Reactor Recirculation pumps per the provided instructions.

Event #1: Cross-tie PB16A to PB16B

Event Information	• PB 11 is aligned to reserve power • The crew will cross-tie Power Board 16A with Power Board 16B

	SRO • Directs cross-tie of PB 16A to PB 16B with PB 16 B supplying per N1-OP-30 • Provides oversight for evolution
Note: The crew will be informed that loads have been minimized during the pre-job brief. **Note:** Crew will be informed during turnover JAF notification and S-ODP-OPS-0112, Attachment 4 have been completed	**BOP** • Acknowledges direction from SRO • References N1-OP-30, Section H.21
	ATC • Monitors plant parameters
-A4-4-4, POWER BD. 16 BKR BY-PASS SW clears **Note:** As soon as A4-4-4 clears proceed to the next event **Role Play:** If contacted to mark amps on PB-16 supply transformer, report amps as indicated by the simulator.	**BOP** • Updates the crew that annunciator A4-4-4 will alarm • Places PB16 SUPPLY-BUS TIE BREAKER INTERLOCK BYPASS SWITCH in BYPASS at panel B5 • Close R1042, 16 PB-Bus Tie Sect A to Sect B • Open R1041, Supply Bkr to 16 PB (A Section) • Updates the crew that annunciator A4-4-4 will clear • Places PB16 SUPPLY-BUS TIE BREAKER INTERLOCK BYPASS SWITCH in NORMAL at panel B5 • Determines PB 11 will remain aligned to reserve per the turnover sheet • Verifies <962 amps on PB-16 Supply transformer

Events #2: Lower Reactor Power with Recirculation Flow

Event Information	• Reactor power is approximately 100% • The crew lowers Reactor power approximately 5% with Recirc

	SRO • Directs power reduction with recirculation flow in accordance with N1-OP-43B and the Reactivity Maneuver Instruction (ReMA) • Provides oversight of reactivity maneuver
Note: Lead examiner may move to the next event once sufficient action is observed on the reactivity manipulation.	**ATC** • Acknowledges direction from SRO • Lowers recirculation flow with master recirculation flow controller • Monitors recirculation flow • Monitors Feedwater flow and RPV water level • Monitors APRMs

	BOP
	• Monitors individual RRPs for response
	  • Individual M/A-Speed Control stations trending uniformly
	  • Individual RRP indications trending normally for speed decrease
	• Monitors Feedwater controls for proper response
	  • FWP 13 FCV responding
	• RPV water level remains within program band (65” - 83”)

Events #3: RRMG Flow Oscillations, Failure of RRP #13 Discharge Valve to Close

Event Information	• The crew will respond to flow oscillations on RRMG #13 • The crew will be unable to take manual control of RRMG #13 and will trip the Recirculation pump • The discharge valve on Reactor Recirculation pump #13 will fail to shut forcing the crew to shut the Suction Isolation valve and bypass valves • SRO will evaluate Tech Specs

Verify the following **override** is **inserted**: DI-3078, POS_2 2F29/NG03A-A POS A, FINAL = Off When directed by lead examiner, **insert malfunction**: **RR73C,** RRP13 M/A Station Output Singal Oscillation Fail Trigger, FINAL = True **RR73C_A**, _RRP13 M/A Station Output Signal Oscillation Fail Amplitude, FINAL = 3ma, RT = 1 min **RR73C_P**, _RRP13 M/A Station Output Signal Oscillation Fail Amplitude, FINAL = 60 sec, RT = 1 min **TRG 1** *APRMs, MWth, MWe, RPV water level and RPV pressure will oscillate*	**CREW** • Diagnose/report Recirc pump 13 oscillating

	SRO • Acknowledges report of oscillations • May direct entry into SOP-1.5 • May direct entry into OP-1, Sect H for Recirculation System Failures • Directs taking manual control of RR Pump 13 M/A station • Acknowledges report that Reactor Power is exceeding 2% power oscillations • Acknowledges report that Reactor Power is exceeding 2% power oscillations • Directs tripping RRP #13 • Directs entering into N1-SOP-1.3.
Event 3 continued	**RO** • Monitors plant parameters
Role Play: If asked to inspect RRMG #13 **wait** 3 minutes, or 5 minutes after the malfunction is inserted, and **report** that you are hearing loud noises coming from RRMG #13. It sounds as though equipment damage is imminent. (*If the crew directs the operator to take local manual control of RRMG #13, use the role play provided above.)* *At the Lead Evaluators discretion, if the crew has not taken any actions to secure RRMG #13 for more than 5 minutes, then manually insert the following malfunction:* **RR01C**, RR Pump 13 27x Short Drive Bkr Trip, FINAL = True	**BOP** • Recognizes and reports RR Pump #13 oscillating • Nulls deviation meter on RR Pump #13 (may reference OP-1, Sect. F.1.0) • Places RR Pump #13 M/A station in MAN • Verifies oscillations stop • Notifies SRO/Crew that RR Pump #13 is in manual and that the oscillations continue • Reports RRMG #13 oscillations are causing pump limits to be exceeded • Acknowledges report from the field of impending damage to RRMG #13 and updates the crew

N1-SOP-1.3 Actions **T.S. 3.6.2a** (1) Instrumentation that initiates scram – control rods shall be inserted, unless there is no fuel in the reactor vessel. **T.S. 3.1.7.e:** When operating in four recirculation loops in operation and one loop isolated the reactor may operate at 100% of full licensed power IAW the power/flow limits specified in the LOLR and APLHGR not to exceed the applicable limiting values proved in the COLR for the fuel type, provided the following conditions are met for the isolated loop: • Suction valve, discharge valve and discharge bypass valve in the isolated loop shall be in the closed position and the associated motor breakers shall be locked in the open position. • Associated pump motor circuit breaker shall be opened and the breaker removed. If these conditions are not met, core power shall be restricted to 90.5% of full licensed power.	**SRO** • Acknowledges report that RR Pump 13 is in manual and oscillations continue • Acknowledges report that Reactor Power is exceeding 2% power oscillations • Acknowledges report of impending damage to RRMG #13 • Directs tripping RRP #13 • Directs entering into N1-SOP-1.3. • Acknowledges report that APRMs are inoperable and an 8 hour ENS report is required. • Evaluates Technical Specifications for INOP APRMs and determines T.S 3.6.2 is in affect while the affected loops discharge valve is open. • Acknowledges report that RRP #13 Discharge valve has failed to close • Acknowledges report to monitor and maintain Reactor power <90% power • Evaluates Technical Specifications for RRP #13 discharge valve failing to close and determines T.S. 3.1.7.e is in affect • Acknowledges the report that APRMs are now operable with the RRP #13 Suction Isolation Valve closed
Event 3 continued	**RO** • Monitors plant parameters • Verifies P/F map is updated for 4 loop operation. • Will Monitor and maintain Reactor power <90% while closing the RRP #13 Suction Isolation valve • Monitors plant limits for 4 loop operation

	BOP
	• Acknowledges direction to trip RRP #13 and enter N1-SOP-1.3
	• Trips RRP #13 and enters N1-SOP-1.3
	• Notifies the SRO that APRMs are inoperable and an 8 hour ENS report is required
	• Attempts to close RECIRC PUMP 13 DISCHARGE VALVE
	• Reports that RECIRC PUMP 13 DISCHARGE VALVE fails to close
	• Reports taking the following actions per N1-SOP-1.3 for reactor recirculation discharge valve failing to close:
	  ○ Notifies the SRO that Reactor power must be maintained <90%
	  ○ Close RECIRC PUMP 13 SUCTION VALVE
	  ○ Opens RECIRC PUMP 13 SUCTION VALVE for 2-3 seconds for valve stem warmup
	  ○ Reports 30-minute stem warmup has commenced
	• Notify the SRO that APRMs are operable
	• Places RRP #13 M/A station in MAN

Event #4: Inadvertent ERV Opening

Event Information	• Reactor Power at approximately 85% • ERV 111 inadvertently opens • Operators will respond per SOP-1.4 to attempt to shut the ERV and SOP-1.1 to lower reactor power • The ERV will close when fuses are pulled

When directed by lead examiner, **insert malfunction**: **AD05A,** ERV 111 Failure – Opens Electrically, FINAL = +c/w F-PNL FUSE **TRG 2** *ERV 111 opens* *Reactor pressure lowers slightly* *Reactor power lowers and then rises slightly* *Torus temperature rises* *Torus level rises* *Expected annunciators:* *F1-4-8, STEAM LINE DETECTION SYS FLOW OFF NORM* *F2-4-1, MAIN STM LINE ELECTROMATIC RELIEF VALVE OPEN* *H3-4-5, PRESS SAFETY/RELIEF VALVES FLOW*	**CREW** • Acknowledges/reports annunciators • Diagnoses ERV 111 has inadvertently opened

Event 4 continued **T.S. 3.1.5:** a. During power operating condition whenever the reactor coolant, pressure is greater than 110 psig and the reactor coolant temperature is greater than saturation temperature, all six solenoid-actuated pressure relief valve shall be operable. b. If specification 3.1.5a above is not met, the reactor coolant pressure and the reactor coolant temperature shall be reduced to 110 psig or less and saturation temperature or less, respectively, within ten hours. **Note:** Reactor power should already approximately ≤ 85% due to the actions of the crew from previous events	**SRO** • Acknowledges reports • Directs entry into N1-SOP-1.4, Stuck Open ERV • Directs emergency power reduction to approximately 85% power per N1-SOP-1.1 • Provides oversight for reactivity manipulation • Determines that ERV 111 is inoperable per TS 3.1.5.b, requiring a 10-hour shutdown • Directs taking action to close ERV 111 or directs a manual scram prior to Torus temperature exceeding 110ºF, in accordance with N1-SOP-1.4 • Acknowledges that ERV 111 has closed • Enters N1-EOP-PC if Torus temp rises above 85°F or Torus level rises above 11.25' - Directs Containment Spray to PTL • May direct initiation of Torus Cooling per N1-EOP-1 att 16 or N1-SOP-1.4 • Determines loss of Containment Spray system is inoperable per TS 3.3.7d and N1-OP-14, P&L# D.11, Loss of Containment Spray loop sea.l
Note (CRAM Rod List): Once the ATC lowers reactor power to ~85% using recirc flow, he will insert the following CRAM Rods (first 4 rods listed): - Rod 18-35 - Rod 34-19 - Rod 18-19 - Rod 34-35	**ATC** • Performs emergency power reduction per N1-SOP-1.1 • Lowers power to approximately 85% using recirc flow and/or cram rods • Monitors APRMs • Monitors Recirculation flow • Monitors Feedwater flow and RPV water level • Monitors position on power to flow map • **If Torus temperature approaches 110ºF, inserts manual Reactor scram** **CT-1**

Event 4 continued **Role Play:** When directed as Operator to go to Auxiliary Control Room and verify ERV 111 is open, wait one minute and report ERV 111 is open. Subsequent reports on acoustic monitor status may be given immediately, with close attention paid to the actual status of the ERV. **Note:** Safety glasses, gloves, no metal, and long sleeves or a lab coat are required for pulling fuses in F panel. **Role Play:** If the Operator is directed to pull fuses or place the ERV switches to PWR-OFF in the RB **wait** for **direction** from the Lead Examiner and **insert remote**: **AD01A,** ERV 111 IN PLANT Fuses, FINAL = pulled **TRG 27** Report fuses are pulled -or- switches are in PWR-OFF position. **Role Play:** When directed as operator to reset the acoustic monitor, wait 1 minute and **insert remote**: **AD07,** Acoustic Monitor Alarm Reset, FINAL = reset **TRG 28** Report acoustic monitor is reset.	**BOP** • Enters N1-SOP-1.4 • Determines ERV 111 is open using: - Valve indicating lights on F panel - Red ERV flow indicating light on F panel • Sends an operator to the Aux Control Room to verify ERV open using Acoustic Monitor • May send an operator to RB 237' to standby for pulling local ERV fuses • Attempts to close ERV 111 by performing one or all of the following: - Depresses ADS Timer Reset pushbuttons - Cycles Control Switch for ERV 111 - **Pulls control power fuses F15 and F30 in F panel (ERV 111)** ○ **OR** - **Directs operator to pull ERV 111 fuses or place ERV switches to PWR-OFF on RB 237'** **CT-1** • Checks with operator in Aux Control Room to see if ERV is still open • Determines/verifies ERV closes • Directs reset of acoustic monitor • Notifies crew that ERV 111 has closed • Monitors Torus temperature • Reports if/when Torus temperature exceeds 85°F or Torus level exceeds 11.25' • Places Containment Spray pumps in PTL if directed

Event 4 continued **T.S. 3.3.7.d** *(Containment Spray in Torus Cooling)* If a containment spray system or its associated raw water system becomes inoperable and all the components are operable in the other systems, the reactor may remain in operation for a period not to exceed 7 days or in accordance with the Risk Informed Completion Time program. (This LCO is in affect due to the loss of the loop seal per N1-OP-14, P&L# D.11.) **Role Play**: If asked to perform the RICT for T.S. 3.3.7.d, acknowledge the request. This action will not completed before the end of the scenario.	**BOP continued** • Places Torus cooling in service when directed, per N1-SOP-1.4, att 2 or N1-EOP-1 att 16: - Close CONT SPRAY BYPASS BV(s) for selected loop - Verifies closed 80-115 - Verifies closed 80-114 - Verifies closed Cont Spray Discharge IV for selected loop - Verifies open CONT SPRAY BYPASS BV for selected loop - Fully opens 80-118 - Starts Containment Spray Raw Water pump in selected loop - Starts Containment Spray pump in selected loop

Events #5, & #6: Rising Generator Stator Wtr Cond., Failure of PB 12 Fast Transfer

Event Information	• Crew will respond to rising Generator Stator Water Cooling Conductivity • The crew will be required to Trip the Main Turbine per N1-SOP-31.1 • The crew will scram the reactor followed by tripping the Main Turbine • Following the reactor scram, Power Board 12 will fail to fast transfer but will be available

<u>Role Play</u> When directed by the lead instructor / evaluator, **insert** the following **malfunction**: **EG13**, Stator Water Cooling Demin Resin Depletion (0-100%), FINAL = 75% **RX01**, Fuel Cladding Failure, FINAL = 34, INITIAL = 10, RT = 5 min, DT = 2 min **TRG 3** **Severity level may be modified, if required to raise conductivity.** **Note:** **If** the crew decides to transfer House Service Loads to Reserve power before Scramming the reactor, **then manually** insert the following **malfunction before** the crew transfers the power boards: **RP03**, Reactor Scram, FINAL = True *The following plant response for Stator Conductivity occurs:* • *Conductivity indications on Stator Water Conductivity XR-(2B) on B2 Panel will begin to rise* *When conductivity reaches 0.5micromhos* • *A2-2-1 GENERATOR STAT WATER HIGH CONDUCTIVITY, alarms* • *Computer point D101, STATOR WTR CONDUC 0.5 YES alarms*	**CREW** • Responds to annunciator A2-2-1 for system high conductivity • Recognizes rising Generator Stator Water conductivity • Acknowledges/reports annunciator H1-1-7, OFF GAS HIGH RADIATION • Recognizes rising offgas and main steam line radiation levels • Diagnoses fuel failure

• *A2-1-3, STATOR COOLING alarms* *The following plant response for Fuel Cladding Failure Occurs:* • *Rising off-gas radiation levels* • *Rising main steam line radiation levels* • *Expected Annunciators:* • *H1-1-7, OFF GAS HIGH RADIATION* • *H1-2-7, OFF GAS RAD MON 11-12 FILTER ΔP SAMPLE FLOW* • *H1-3-7, MAIN CNDSR OG TIMER STARTED ISOL TD 15 M* • *H1-4-8, AREA RADIATION MONITORS* • *F1-2-7, MAIN STEAM RAD MONITOR CH 11 HI/LO (later)* • *F4-2-2, MAIN STEAM RAD MONITOR CH 1* • *2 HI/LO (later)* Verify the following **malfunctions** are **preset**: **ED27**, PB 12 Auto Transfer Failure, FINAL = True **FW03A,** Feedwater Pump Trip 11, FINAL = True *Power Board 12 voltage drops to zero after Generator trip* *Feedwater pump 11 starts and then immediately trips*	

Role Play If dispatched to Stator Water Cooling skid to investigate wait 1 minute and report storage tank level is normal and steady. Demineralizer flow is normal. *Conductivity continues to rise and reaches 9.9 micromhos/cm* • Computer point D106 STATOR WTR CONDUC 9.9 YES alarms **Role Play:** *If contacted as Chemistry to validate reading, report that readings are valid.*	**BOP** • Confirm alarm on computer printout. • Monitor conductivity recorder for trends. • Informs crew of current conductivity readings and trends • May dispatch operator to Stator Water Cooing skid to monitor storage tank level and determine proper demineralizer flow • IF conductivity continues to rise, THEN reduce generator load. Informs crew load reduction is required. • IF cause of conductivity cannot be determined OR conductivity reaches 9.9 micromhos/cm, THEN trip turbine AND enter N1-SOP-31.1. Informs crew of turbine trip requirement.
Note: High pressure Feedwater will be unavailable until Power Board 12 is re-energized. **Note:** Recommend initiating the next event once the crew has stabilized the plant post-scram and PB 12 is re-energized.	**US** • Acknowledge reports from crew • Direct power reduction due to rising conductivity • Establishes critical parameter for conductivity and directs reactor scram/turbine trip prior to reaching 9.9 micromhos/cm • Directs entry into N1-SOP-25.2, Fuel Failure/High Activity • Acknowledges the scram report • Enters N1-EOP-RPV, RPV Control, on low Reactor water level • Following reactor scram directs entry into N1-SOP-1, Reactor Scram • Directs Reactor water level control 53-95” using Feedwater/Condensate and CRD • *Directs Reactor pressure control 800-1000 psig on Turbine Bypass Valves or Emergency Condenser 11* • *Enters N1-EOP-SC, Secondary Containment Control on high Radiation levels.* • *Acknowledges failure of Power Board 12 to transfer to reserve power* • *Directs entry in N1-SOP-30.2, Loss of Power Board 12*

	RO • When directed depresses the REACTOR TRIP 11 AND 12 pushbuttons • Places the Modes Switch in SHUTDOWN • Provide scram report • Notifies the crew that Power Board 12 is deenergized

Event 5 & 6 continued
 	
Role Play: When dispatched as Chemistry to take samples, acknowledge request.
 	
Role Play: When directed to close Turbine Building Roof Vents, Sidewall Vents and Roll Doors, wait 2 minutes then report the Turbine Building Roof Vents, Sidewall Vents and Roll Doors are CLOSED. Also report that RP is with you, and they have detected higher than normal rad levels near the offgas piping.
 	
Note: Normal Full Power Background (NFPB) Main Steam Line (MSL) radiation levels are approximately 410 mR/hr at this power level. Any value between 400-500 mR/hr is reasonable. This makes a reasonable range of 1500-1875 mR/hr for the 3.75 times NFPB benchmark.
 	
Note:
High pressure Feedwater will be unavailable until Powerboard 12 is re-energized.
	BOP
	• Executes N1-SOP-25.2
	• Notifies Chemistry to sample offgas and reactor coolant for gross activity
	• Directs operator to close Turbine Building Roof Vents, Sidewall Vents and Roll Doors
	• Monitors ARMs and rad monitors to determine plant radiation levels
	• Notifies US/Crew of rising Main Steam Line Radiation Monitor levels
	• Notifies US if MSL Rad Monitors approach/exceed 3.75 X Normal Full Power Background (NFPB)
	
	• Performs Reactor water level control actions of N1-SOP-1:
	  • Attempts to restore RPV water level to 53-95” by controlling injection and rejecting through RWCU, as necessary
	  • Determines both electric Feedwater pumps NOT running
	• May close MSIVs
	• May verify Vessel Isolation per N1-SOP-40.2

Event 5 & 6 continued	**ATC/BOP**

Role Play: If contacted to check PB 12, wait two minutes and report that you see nothing abnormal at the powerboard.
 	
Role Play:
If directed to place IC bus 130 on the maintenance supply **wait** 2 minutes and insert the **following remote**:
 	
ED40A, I&C Bus 130 NC Supply Breaker from IC XFMR(PB13B), FINAL = Open
 	
ED40B, I&C Bus 130 NO Supply Breaker from PB 167A, FINAL= Closed
 	
TRG 30
 	
Role Play:
If directed to place Reactor Trip Bus 141 on its maintenance supply **wait** 2 minutes and insert the **following remote**:
 	
RP04, RPS BUS 12 POWER SOURCE, FINAL = MAINT
 	
TRG 29
 	
Note:
At the examiner's discretion, move on to next event when PB 12 has been re-energized.
	• Executes N1-SOP-30.2
	
	N1-SOP-30.2 Actions:
	
	• Verifies Service Water pump 11 running
	• Continuously monitors for thermal hydraulic instability
	
	• Place I&C Bus 130 on maintenance per attachment 2
	• Verifies:
	  • TBCLC pump 11 running
	  • IAC 11 running
	  • RBCLC system running
	
	• Re-energizes Powerboard 12:
	  • Answers "Are A5-4-1, A5-4-2, A5-1-8, OR A5-2-8 in alarm?" No
	  • Obtains SRO permission to re-energize Powerboard 12
	  • Verifies open Breaker R122
	  • Inserts Sync. Key into R123 AND rotates clockwise to ON
	  • Closes Breaker R123
	  • Rotates Sync. Key counterclockwise to OFF AND removes
	  • Closes Breakers R124 and R121
	• Restores Reactor Trip bus 141 AND Feedwater Heating per Attachment 3

Events #7, #8, & #9: Main Steam Line Break in Turbine Building, MSIVs Fail to Close, Turbine Building Ventilation Exhaust Fan Trips

Event Information	• Fuel failure is complicated by a MSL break in the TB • Two MSIVs fail to isolate • Lose TB Exhaust ventilation leading to unmonitored ground level release.

When directed by the lead examiner, **insert malfunctions**: **MS01,** Steam Line Break Outside PC Area, FV=12, IV=5, RT=4:00 **TRG 4** *Main Steam tunnel temperatures rise* *Turbine Building radiation levels rise* *Expected Annunciators:* *F1-2-2, RPS CH 11 MAIN STM LINE BREAK* *F2-3-2, MAIN STM LINE BREAK AREA TEMP HIGH* *F4-2-7, RPS CH 12 MAIN STM LINE BREAK* *H1-4-8, AREA RADIATION MONITORS* The following **malfunction** also **inserts** on **TRG 4:** **HV07E,** TB Exhaust Fan Trip 11, FINAL = True, DT = 2 min Verify the following **malfunction** is **automatically inserted** when Turbine Building exhaust fan 12 is started: **HV07F**, TB Exhaust Fan Trip 12, FINAL = True, DT = 1 min **TRG 5** Verify the following **malfunctions** are **preset**: **MS13A,** MSIV FAILS OPEN MS01-01(111), FINAL = 10% **MS13C,** MSIV FAILS OPEN MS01-03(112), FINAL = 10% *Two MSIVs fail mid-position on closure*	**CREW** • Acknowledges/reports annunciators H1-1-7, OFF GAS HIGH RADIATION **Diagnoses Main Steam Line break**

Events 7, 8, & 9 continued **Role Plays:** When the crew has determined both Turbine Building exhaust fans are inoperable, **-OR-** as directed by the lead examiner, **-OR-** when requested as RP to assess dose, wait 2 minutes then report as Off-Site Dose Assessment Manager that dose assessment indicates 50 mr TEDE and rising at the site boundary. **(Provide Dose Assessment Report #1 to US)** Three minutes later, report that dose is 500 mrem TEDE and rising at the site boundary. (Criteria for SAE RS1 is met) **(Provide Dose Assessment Report #2 to US)** Three minutes after previous field report, report that dose assessment indicates 800 mrem TEDE and rising at the site boundary. **(Provide Dose Assessment Report #3 to US)** Three minutes later, report that dose assessment indicates 950 mrem TEDE and rising at the site boundary. We are approximately 3 minutes from exceeding the GE TEDE dose limit. **(Provide Dose Assessment Report #4 to US)** Three minutes later, report that dose assessment indicates 1100 mrem TEDE and rising at the site boundary. (Criteria for GE RG1 is met) **(Provide Dose Assessment Report #5 to US)** If asked for an update between reports, give an extrapolated value for dose at the site boundary. If dispatched into the plant for any other task, wait 2 minutes and then report that there is excessive steam in the Turbine Building and you have backed out.	**SRO** • Acknowledges reports • Directs MSIVs closed • Directs Turbine Building evacuation • Acknowledges failure of two MSIVs to close • May direct cooldown using Turbine Bypass Valves or Emergency Condensers <100°F/hr • Acknowledges trip of Turbine Building exhaust fan 11 • Directs start of Turbine Building exhaust fan 12 • Acknowledges trip of Turbine Building exhaust fan 12 • Dispatches personnel to monitor on-site/off-site radiation levels • Acknowledges off-site release rate reports • Enters N1-EOP-RR due to off-site release rate above Alert level. • May direct rapid depressurization with Emergency Condensers >100°F/hr • Determines off-site release rate is approaching the General Emergency level • Enters N1-EOP-C2, RPV Blowdown • Directs initiation of ECs • **Directs open 4 ERVs** **CT-2**

Events 7, 8, & 9 continued **Role Play:** If directed to manually close the MSIV's, wait 5 minutes and report that RP won't allow access to the area.	**ATC/BOP** • Reports failure of MSIVs to automatically close on high steam tunnel temperature • Attempts to manually close MSIVs • Reports failure of two MSIVs to close • Makes Turbine Building evacuation announcement • May open Turbine Bypass Valves or initiate Emergency Condensers to cooldown <100°F/hr • Reports trip of Turbine Building exhaust fan 11 • Starts Turbine Building exhaust fan 12 • Reports trip of Turbine Building exhaust fan 12 • Dispatches personnel to monitor on-site/off-site radiation levels • Acknowledges/reports off-site release rate reports • May perform rapid depressurization with Emergency Condenser 11 >100°F/hr • Initiates EC 11/12 • **Open 4 ERVs** **CT-2** • Controls Reactor water level 53-95" using Condensate/Feedwater and CRD

Event Termination Criteria	• RPV water level controlled in assigned band • RPV Blowdown in progress or complete

Copy ____ of ____

Training Id: **NMP1 NRC 2024 Scenario #2** Revision: **0.0**

Title: **Simulator Scenario #2**

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	2/1/2024
Validated By	Elmer Warner	4/4/2024
	Tim Heagerty	
	Ken Graham	
Facility Reviewer	Signature on File / Dave Mason	7/22/24

References

1. N1-OP-11, Reactor Building Closed Loop Cooling System
2. N1-OP-43B, Normal Power Operations
3. N1-ARP-F1, Control Room Panel F1
4. N1-ARP-H1, Control Room Panel H1
5. N1-SOP-1.3, Recirc Pump Trip at Power
6. N1-SOP-1.5, Unplanned Reactor Power Change
7. N1-SOP-5.1, Loss of Control Rod Drive
8. N1-SOP-1, Reactor Scram
9. N1-EOP-RPV, RPV Control for Modes 1 and 2
10. N1-EOP-C2, RPV Blowdown for Modes 1 and 2
11. N1-EOP-SC (1-2), Secondary Containment Control for Modes 1 and 2
12. N1-EOP-1, NMP1 EOP Support Procedure
13. Unit 1 Technical Specifications

Instructor Information

A. Scenario Description

Sequence of Events / Expected Crew Response:

The scenario begins at approximately 90% power. Containment Spray Pump 111 is out of service for maintenance. The crew is directed to Place RBCLC pump 13 in service and place RBCLC 12 in standby per N1-OP-11. After the pump swap, the crew will raise reactor power to 100% utilizing Reactor Recirculation pumps. Shortly after the crew raises reactor power RBCLC pump 13 will trip requiring the crew to place RBCLC pump 12 back into service.

Then a Main Steam Line Rad monitor will fail inoperable. The SRO will address Technical Specifications.

Next, the crew will experience a fault on PB 101 which will result in a loss of Reactor Recirculation Pump 13 and entry into N1-SOP-1.3, RECIRC PUMP TRIP at POWER. The Unit Supervisor will evaluate Technical Specifications and determine that reactor power will be limited to 90.5% until the recirc loop has been isolated.

Next, the on service CRD Flow Control Valve (FCV) will fail closed. The crew will enter N1-SOP-5.1, LOSS of CONTROL ROD DRIVE, to place the standby FCV into service. The Unit Supervisor will evaluate Technical Specifications and enter LCO 3.1.1.

Next the RWCU system will develop a leak into the Secondary Containment. The crew will enter N1-EOP-SC due to the cleanup leak into the Reactor Building. All efforts to isolate the leak will be unsuccessful. The crew will be required to scram the reactor prior to any general area temperature exceeding a max safe temperature **(Critical Task)**. When the crew attempts to scram the reactor the manual scram pushbuttons will fail to scram the reactor. The crew will be able to successfully scram the reactor utilizing the Mode Switch or ARI pushbuttons.

Following the reactor scram the crew will monitor and report that all Turbine Valves have failed closed. The crew will be required to shift pressure control to Emergency Condensers and ERVs.

When the crew receives reports from the field that two general areas have exceeded maximum safe temperatures, the crew will perform an RPV Blowdown per N1-EOP-C2 **(Critical Task)**.

1. Termination Criteria
    a. RPV Blowdown in progress

2. Critical Tasks

Critical Task (#1)	**Given an un-isolable RWCU leak outside primary containment and one general area temperature approaching a maximum safe limit, the crew will insert a manual scram prior to any general area field report indicating one general area temperature exceeding a max safe limit in accordance with N1-EOP-SC (1-2).**
CT-1.0 Justification:	
Safety Significance	With an un-isolable primary system discharging outside of Primary Containment resulting in general area temperature approaching the maximum safe limit, the Reactor must be scrammed. This reduces the rate of energy production and thus the heat input, radioactivity release, and break flow into the Secondary Containment. This also ensures the Reactor is shutdown prior to need for a blowdown.
Success Path:	The crew will be able to scram the reactor utilizing the Mode Switch and ARI pushbuttons per N1-SOP-1
Initiating Cue:	*Annunciators, field reports, and RWCU flow and temperature changes, failure of isolation valves to isolate, will provide indication of the leak coming from the RWCU system.*
Measurable Performance Standard:	*Manipulation of Reactor Scram Pushbuttons, Mode Switch, and ARI pushbuttons, will provide observable actions for the evaluation team.* ***Bounding Criteria****: Before exceeding any maximum safe temperature in accordance with N1-EOP-SC..*
Performance Feedback:	*Control rod position and Reactor power indications will provide performance feedback regarding the success rod insertion.*

Critical Task (#2)	**Given an un-isolable RWCU leak outside primary containment and two general area temperatures above the maximum safe limit, within 15 minutes the crew will commence an RPV Blowdown in accordance with N1-EOP-C2.**
CT-2.0 Justification:	
Safety Significance	An un-isolable primary system discharging outside of Primary Containment resulting in two general area temperatures above the maximum safe limit indicates a wide-spread problem posing a direct and immediate threat to Secondary Containment. A blowdown minimizes flow through the break, rejects heat to the suppression pool in preference to outside the containment, and places the primary system in the lowest possible energy state.
Success Path:	The crew will open 4 ERVs in accordance with N1-EOP-SC (1-2), Secondary Containment Control for Modes 1 and 2, and N1-EOP-C2 (1-2), RPV Blowdown for Modes 1 and 2, to rapidly lower the energy released into the Secondary Containment.
Initiating Cue:	*Multiple annunciators will provide indications of a primary system discharging into Secondary Containment. Field reports will provide indication that two general area temperature limits are above the maximum safe value. N1-EOP-SC (1-2) provides direction to perform an RPV Blowdown per N1-EOP-C2 (1-2).*
Measurable Performance Standard:	*The crew will manually initiate Emergency Condensers and open ERVs. This will provide observable actions for the evaluation team.* ***Bounding Criteria:*** *Based on procedural requirements in N1-EOP-SC (1-2) to perform an RPV Blowdown once 2 or more General areas have exceeded their Maximum Safe Values. Time requirement based on Operations representative recommendation.*
Performance Feedback:	*Emergency Condenser and ERV instrumentation will provide indication that these systems are functioning properly once placed in service. Multiple Reactor pressure indicators and annunciators will provide performance feedback regarding the success of the blowdown.*

3. Length

    a. ~60 minutes

4. Mitigation Strategy Code

    a. DMS-SC-01, Primary Leak in secondary containment, exceed max safe level, radiation and/or temperature n 2 or more areas; blowdown required.

5. Technical Specifications

    a. TS 3.3.7.b, 15 day LCO

6. EAL Classification

    a. Site Area Emergency per EAL FS1 – Loss or Potential Loss of ANY two barriers

7. Special Orders

    a. None

B. Initial Conditions

1. IC Number

   a. IC-242

2. Presets / With Triggers

   a. Malfunctions

1)	**CT01A,** CT Pump 111 Trip, FINAL = True	**Inserted**
2)	**CW04C,** RBCLC Pump 13 Trip, FINAL = True	**TRG 1**
3)	**RM51A**, PRM Steam Line rad Mon 111 – Norm Malfunction, SV = 0	**TRG 2**
4)	**ED06**, PB 101 Electrical Fault, FINAL = True	**TRG 3**
5)	**RD36A**, CRD FCV 44-151 FAILURE – CLOSED, FINAL = True	**TRG 4**
6)	**CU11**, CU Coolant Leak Outside of Drywell, FINAL = 45	**TRG 5**
7)	**TC12**, All Bypass Valves Fail – Closed (0-100%), FINAL = 100%	**TRG 5**
8)	**CU14**, CU Isolation Valves Stuck Open, FINAL = True	**Inserted**

   b. Remotes

1)	**RD05,** CRD FLOW CONTROL VALVE ISOL, FINAL = nc30b	**TRG 16**

   c. Overrides

1)	**DI-4113,** Clear 1E46 RPS CH-11 Trip, FINAL = Off	**Inserted**
2)	**DI-4114,** Clear 1E47 RPS CH-12 Trip, FINAL = Off	**Inserted**

   d. Annunciators

1) None

   e. Event Triggers

Event #	Event Action	Command
TRG 16, Swaps CRD FCV when operator operates switch in Control room	zdrdfcvb==1	**Blank**

f. Equipment Out of Service

1) Containment Spray Pump #111 is out of service with an info/caution tag

g. Support Documentation

1) ReMA for raising Reactor Power with Reactor Recirculation Pumps

h. Miscellaneous

1) Ensure RBCLC pumps 11 and 12 are in service at the start of the scenario.

SHIFT TURNOVER INFORMATION

ON COMING SHIFT: □ N ■ D DATE: Today

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walkdown (all panels) (SRO, ROs)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

- LCO Status (SRO)
- Shift Turnover Information Sheet

Evolutions/General Information/Equipment Status:

- Reactor power is approximately 90%.
- Containment Spray Pump #111 is out of service for maintenance.
- 15 day LCO 3.3.7.b is in effect for Containment Spray

PART III: Remarks/Planned Evolutions:

- Place RBCLC pump #13 in service and place RBCLC pump #12 in standby per N1-OP-11, Section F.1. Venting of the pump returning to service is NOT required. All RBCLC Heat Exchangers are in service.
- Then, raise reactor power to rated using Reactor Recirculation pumps per the provided instructions.

Event #1: Place RBCLC Pump #13 in Service and RBCLC Pump #12 in Standby

Event Information	• Reactor Power is at approximately 90% power • The crew will place RBCLC Pump #13 in service and RBCLC Pump #12 will be place in STBY.

	SRO • Directs placing RBCLC Pump #13 in service and placing RBCLC pump #12 in STBY per N1-OP-11 • Provides oversight for evolution • Acknowledges report that RBCLC Pump #13 has tripped • Directs placing RBCLC Pump #12 back into service per the N1-ARP-H1
Note: The crew will be informed venting of RBCLC pump #13 prior placing it in service is not required. The crew will also be informed that all RBCLC HX are in service at the start of the evolution.	**BOP** • Acknowledges direction from SRO • References N1-OP-11, Section F.1
	ATC • Monitors plant parameters
Note: The operator should N/A mark the steps for venting the RBCLC Pump #13 based on guidance provided in the Shift Turnover. **Role Play:** If contacted to verify proper pump start RBCLC pump #13 and/or verify that RBCLC Pump #12 has stopped, **wait** 2 minutes and **report** that we have a good pump start for RBCLC Pump #13 and RBCLC Pump #12 has stopped.	**BOP** • Makes a plant announcement for starting and securing RBCLC pumps #13 and #12 • Starts RBCLC #13 • Should determine that venting RBCLC pump #13 is not required based on information provided on the shift turnover page • Confirms system pressure and pump amps indicate system is stable. • Should determine based on the number of RBCLC HXs in service that they will be required to take manual control of TCV-70-137 and mark this step as N/A. • Stops RBCLC Pump #12 • Updates the crew that RBCLC Pump #13 is in service and RBCLC pump #12 has been placed in STBY.

Events #2 & #3: Raise Reactor Power with Recirculation Flow, RBCLC Pump #13 Trips

Event Information	• Reactor power is approximately 90% • The crew raised Reactor power with Recirc

	SRO • Directs power ascension with Recirculation flow in accordance with N1-OP-43B and the Reactivity Maneuver Instruction (REMA) • Provides oversight of reactivity maneuver
	ATC • Acknowledges direction from SRO • Raises Recirculation flow with master Recirculation flow controller • Monitors APRMs • Monitors Recirculation flow • Monitors Feedwater flow and RPV water level • Observes power-to-flow map restrictions

Note:
Recommend initiating the next event once Reactor power has been raised 2-3%.
	BOP
	• Monitors individual RRPs for response
	  • Individual M/A-Speed Control stations trending uniformly
	  • Individual RRP indications trending normally for speed increase
	• Monitors Feedwater controls for proper response
	  • FWP 13 FCV responding to power change
	• RPV water level remains within program band (65” - 83”)

Event #3 **When directed** by the Lead Examiner, following Reactor Power ascension**, insert** the following **malfunction:** **CW04C**, RBCLC Pump 13 Trip, FINAL = True **TRG 1** **Role Play:** If asked to investigate trip of #13 RBCLC pump, **wait** 2 minutes and **report** overcurrent trip on the circuit breaker for #13 RBCLC pump and the motor is hot to the touch.	**BOP** • Updates the crew that RBCLC pump #13 has tripped • Acknowledges direction to place RBCLC Pump #12 in service. • Places RBCLC Pump #12 in service per N1-OP-11, Section F.1.0

Event #4: Main Steam Line Radiation Monitor Failure

Event Information	• Reactor Power at approximately 95%. • A MSL Rad monitor will fail inoperable • SRO will make Technical Specification determination for the failed instrument

When directed by the examiner, **insert malfunction**: **RM51A,** PRM Steam Line Rad Mon 111, Norm Malfunction, SV = 0 **TRG 2** *Expected Annunciator:* *F1-2-7, MAIN STEAM RAD MONITOR CH 11 HI/LO*	**CREW** • Acknowledge/report Annunciator F1-2-7, MAIN STEAM RAD MONITOR CH 11 HI/LO Diagnose failure of MSL Rad Monitor 111
Role Play: When requested to investigate the MSL rad monitor failure, report that you will begin an immediate investigation	**SRO** • Acknowledges report of MSL Rad Monitor alarm • Directs execution of ARP for F1-2-7 • Acknowledges MSL Rad Monitor has failed • Informs WEC, requests investigation of the failure • Enters TS Table 3.6.2.h (requires placing channel in the tripped condition within 12 hours or verifying Mechanical Vacuum pump isolated) • Briefs crew on failure of MSL Rad Monitor
	ATC • Monitors plant parameters
	BOP • Executes ARP for F1-2-7 • Goes to back panel or checks PPC and determines the other MSL Rad Monitors indicate normal readings • Observes downscale light on MSL Rad Monitor Ch 11 and diagnoses the Monitor is INOP • Notifies crew MSL Rad Monitor Ch 11 is INOP

Event #5: Power Board 101 Fault

Event Information	• Reactor Power at approximately 95% • Crew will respond to a fault on PB 101 • N1-SOP-1.3 will need to be executed due to the loss of a Recirc Pump

When directed by examiner, **insert malfunction:** **ED06,** PB 101 Electrical Fault, FINAL = True **TRG 3** *Loss of voltage on PB 101* *Lowering Reactor power* *Lowering Recirc flow* *Expected Annunciators:* *A5-1-1, POWER BOARD 101 R1014 TRIP* *A4-2-7, POWER BOARD 101 LOCKOUT 86BT* *F2-2-3, React Recirc M-G Set 13*	**CREW** • Diagnose/report loss of PB 101 • Diagnose/report the trip of RRP 13 •
T.S. 3.6.2a (1) Instrumentation that initiates scram – control rods shall be inserted, unless there is no fuel in the reactor vessel. **Note**: The crew is in this Tech. Spec (3.6.2a) until the RRP Discharge valve has been closed. The crew can exit the Tech. Spec at that time.	**SRO** • Acknowledges reports • Directs entry into N1-SOP-1.3 for RRP trip • May direct entry into N1-SOP-1.5 for unplanned power change • Acknowledges APRMs are inoperable for scram and rod block functions of TS 3.6.2 • Provides oversight of reactivity change during closure of RRP 13 discharge valve • Reviews Powerboard 101 loads • Reviews TS 3.1.7.e and determines Reactor power may be raised to 100% • Determines thermal limits penalty

Event 5 continued	**RO** • Monitors plant parameters • Monitors Reactor power and recirculation flow during closure of RRP suction valve • Verifies position on four loop P/F map • May take a critical parameter of number of operating recirc pumps
Role Play: If dispatched to PB 101, wait 2 minutes to report R1014 tripped on overcurrent and that Electrical Maintenance is at the PB investigating.	**BOP** • May execute N1-SOP-1.5 for unplanned power change • Monitors RPV water level response to transient • Enters N1-SOP-1.3 for RRP trip • Verifies proximity to restricted zone on four loop Power to Flow Map • Notifies SRO that APRMs are inoperable • Closes RRP 13 discharge valve • Opens RRP 13 discharge valve for 2-3 seconds • Notifies SRO that APRMs are operable • Green flags RRP 13 control switch • Places RRP 13 M/A station to MAN

Events #6: CRD Flow Control Valve (FCV) fails closed

Event Information	• Crew will swap to alternate FCV in accordance with N1-SOP-5.1 • SRO will make Technical Specification determination for the failed CRD FCV

When actions for the loss of Power Board 101 are complete and when directed by the examiner, **insert malfunction:** **RD36A,** CRD FCV 44-151 FAILURE – CLOSED, FINAL = True **TRG 4** *Expected plant response:* *CRD charging water pressure rises* *CRD drive water pressure lowers* *CRD cooling water pressure and flow lower* *Expected Annunciator:* *F3-1-5, CRD CHARGING WTR PRESSURE HI/LO*	**CREW** • Acknowledge/report annunciator F3-1-5, CRD CHARGING WTR PRESS HI/LO Diagnose CRD FCV 11 is closed
	SRO • Acknowledge report from the crew • Direct entry into N1-SOP-5.1, LOSS OF CRD • Acknowledge report that CRD FCV has failed • Acknowledge report that CRD FCV has been shifted and is in AUTO • Enter Technical Specifications 3.1.6.c while CRD flow less than 50 gpm.
	ATC • Monitor plant parameters

Role Play: As Equipment Operator, when directed to transfer CRD FCV, wait 1 minute and inform the control room that you are standing by **Role Play:** As Equipment Operator, when directed to open 44-148 and 44-152, wait 1 minute and report task completion (Step 1.3.1, both bullets) **Role Play:** As Equipment Operator, when directed to place 113-297 SEL-CRD FCV Service Selector in the up position, **wait** 3 seconds and **report** 113-297 SEL-CRD FCV Service Selector is in the up position. (Step 1.3.2, first bullet) **Note:** When the control room operator takes the CRD Flow Control Transfer Switch to "VALVE 12" TRG 16 will automatically **insert remote:** **RD05,** CRD FLOW CONTROL VALVE ISOL, FINAL = nc30b **TRG 16** This precludes the console operator from having to time the insertion of this remote. **Role Play:** As Equipment Operator, when directed to close 44-150 and 44-153, wait 1 minute and report task completion. (Step 1.3.5)	**BOP** • Acknowledge direction from SRO • Execute N1-SOP-5.1 • Answers “Is a CRD pump operating” YES • Determines need to switch CRD Flow Control Valves per N1-SOP-5.1, Attachment 1: • Dispatch PO to report to RB 237’ and establish communications • Place CRD Flow Control in MAN and 0 demand • Direct Equipment Operator to open 44-148 and 44-152 • Direct Equipment Operator to place 113-297 SEL-CRD FCV Service Selector in the up position. • Places CRD FLOW CONTROL VALVE TRANSFER switch in VALVE 12 position • Adjust FIC 44-146B, CRD FLOW CONTROL, to set CRD Flow between 32 x 10^3 and 33 x 10^3 LB/HR • Places FIC 44-146B, CRD FLOW CONTROL M/A station in AUTO • Direct Equipment operator to close 44-150 and 44-153 • Monitor flow • Place CRD Flow Control in AUTO

Events #7, #8, & #9: Unisolable RWCU leak in RX Bldg, RPS Pushbuttons fail to scram, All TBVs fail closed

Event Information	• Unisolable RWCU leak into Reactor Building • RPV Blowdown will be required • Crew may anticipate blowdown • Reactor Trip pushbuttons 11 and 12 fail to scram the reactor • All TBVs fail closed

When directed by lead examiner, **insert malfunction**: **CU11,** CU Coolant Leak Outside of Drywell, FINAL = 45 **TC12,** All Bypass Valves Fail – Closed (0-100%), FINAL = 100% **TRG 5** *Rising temperatures, pressures and radiation levels in the Secondary Containment* *RBEVS auto-starts (if secured from previous event)* *RBVS isolates (if restored from previous event)* *RWCU IVs fail to close on isolation signal and manually* *Expected Annunciators:* *H1-4-8, AREA RADIATION MONITORS* *L1-4-3, REACT BLDG VENT RAD MONITOR OFF NORMAL* *L1-3(4)-6, EMER VENT SYS CHANNEL 11(12) RELAY OPERATE (~1 min)* *K3-3-4, CLEAN-UP SYS LEAK AREA T HI (~5 min)* *L1-3-3, CONTINUOUS AIR RAD MONITOR (~1 min)* *K3-1-6, CU Pump 12 Trip* *Later Reactor Building D/P goes to Zero* Verify the following **malfunctions** are **preset**: **CU14,** CU Isolation Valves Stuck Open, FINAL = True Verify the following **overrides** are **preset:** **DI-4113,** Clear 1E46 RPS CH-11 Trip, FINAL = Off **DI-4114,** Clear 1E47 RPS CH-12 Trip, FINAL = Off *(Overrides listed above prevent the Reactor Trip Pushbuttons from operating)*	**CREW** • Diagnoses/reports leak from RWCU into secondary containment • Diagnoses/reports RWCU failed to isolate • Recognize/report failure of the Reactor Trip Pushbuttons • Recognize/report failure of Turbine bypass valves opening

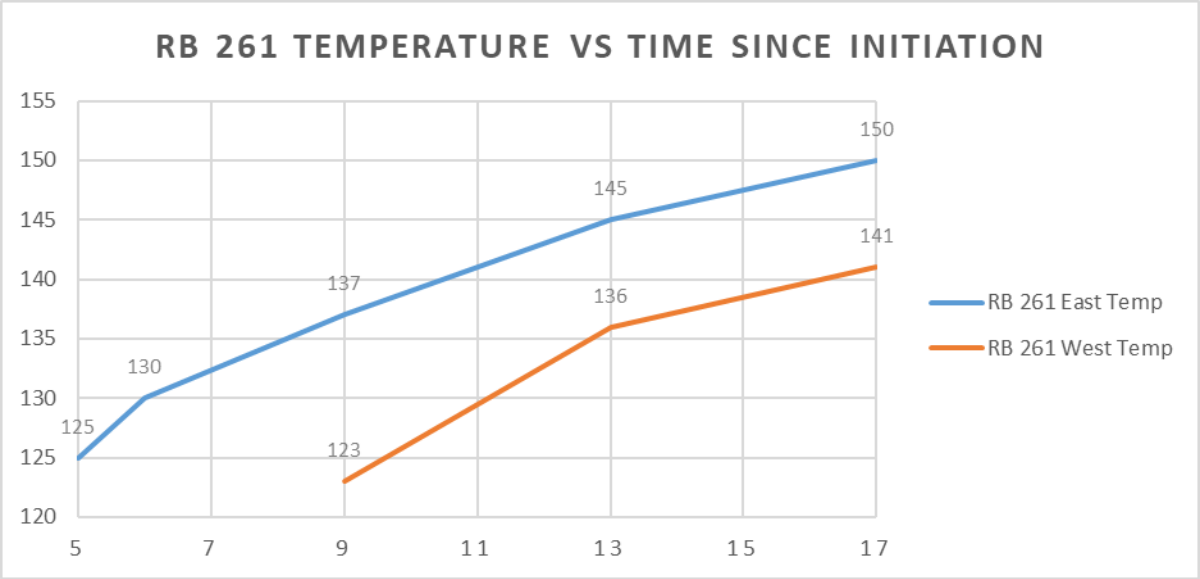
Event 7, 8 and 9 continued	**SRO** • Acknowledges reports • Enters N1-EOP-SC, Secondary Containment Control, on high Reactor Building Vent rad levels, high Reactor Building area temperatures loss of D/P and rad levels • Directs RWCU system isolation • Directs Reactor Building evacuation • Acknowledges report that RWCU failed to isolate both automatically and manually • Acknowledges report that All Turbine Bypass valves have failed closed • Directs Reactor Pressure control utilizing Emergency Condensers and ERVs. • Directs dispatching of an operator and RP tech to obtain general area temperatures and radiation levels in the Reactor Building • When Reactor Building Ventilation exhaust radiation exceeds 5 mR/hr, directs verification of RB Vent isolation and RBEVS initiation • Determines area temperatures and radiation levels are above setpoints in Tables T and R, and transitions to N1-EOP-SC circle 27 • Determines a primary system is discharging into the Reactor Building and the discharge cannot be isolated, and transitions to N1-EOP-SC circle 28 • Before any area temperature or radiation level reaches 135°F or 8 R/hr, respectively: • **Directs manual scram (CT-1.0)** • Acknowledges scram report

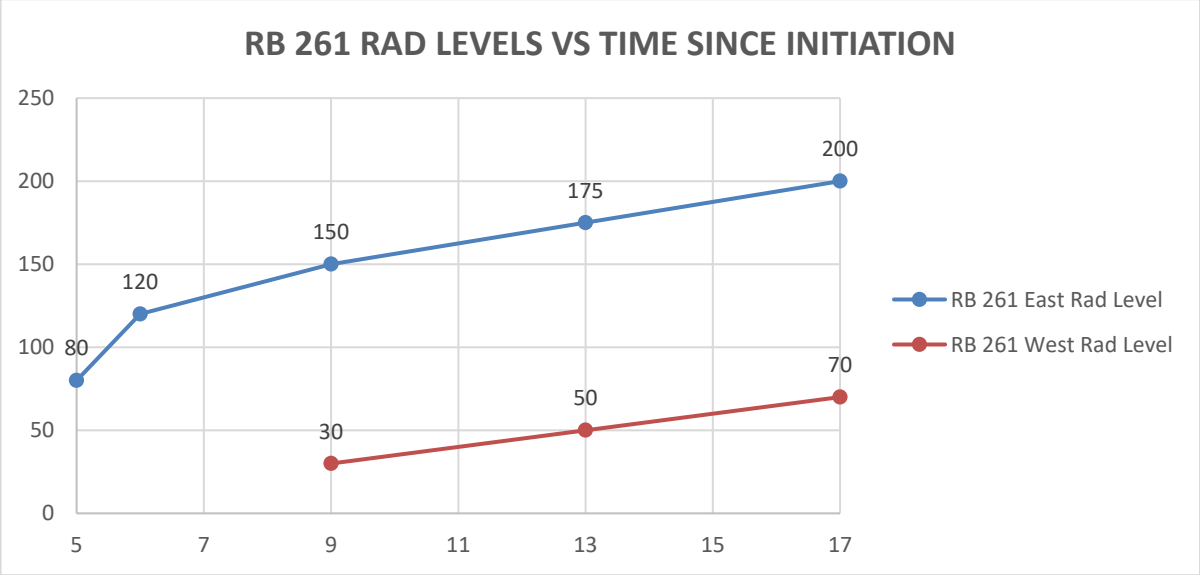
Event 7, 8, and 9 continued **Note:** Anticipatory blowdown is likely to be directed from N1-EOP-RPV once one Reactor Building General Area temperature is above 135°F with a second temperature trending towards 135°F.	**SRO continued** • Enters N1-EOP-RPV, RPV Control on low RPV water level • Answers "Are all control rods inserted to at least position 04?" YES • Directs entry into N1-SOP-1, Reactor Scram • Directs RPV water level control 53-95" using Feedwater/Condensate and CRD • Directs RPV pressure maintained <1080 psig using Emergency Condensers & ERVs • May direct anticipatory blowdown with Emergency Condensers with cooldown in excess of 100°F/hr • Acknowledges reports of Reactor Building temperatures and radiation levels • When report is received that 2 General Areas temperatures are above 135°F, enters N1-EOP-C2, RPV Blowdown • Answers "Are all control rods inserted to at least position 04" YES • Answers "Drywell pressure?" <3.5 psig • Directs initiation of Emergency Condensers • Answers "Torus water level?" >8 ft • **Directs open 4 ERVs (CT-2.0)**

Event 7, 8. and 9 continued	**RO** • Makes evacuation announcements due to steam leak • Depresses REACTOR TRIP 11 and 12 pushbuttons • Recognizes/reports failure of the REACTOR TRIP 11 and 12 pushbuttons to scram the reactor • **Places Reactor Mode Switch to SHUTDOWN (CT-1.0)** • **Manually initiates ARI (BOP) (CT-1.0)** • Provides scram report • Performs scram verification actions of N1-SOP-1, Reactor Scram: • Confirms all rods inserted • Observes Reactor power lowering • Places IRMs on range 9 • Inserts IRM and SRM detectors • Down-ranges IRMs as necessary • Reduces Recirc Master flow to 25-43 x 10^6 lbm/hr • Verifies main turbine and generator tripped • Controls RPV pressure as directed using Emergency Condensers or ERVs

Event 7, 8, and 9 continued
 	
Role Play: If dispatched to attempt RWCU valve closures, acknowledge direction and delay action.
 	
Note: No General Area temperature information is available until an operator has been dispatched to the Reactor Building to monitor area temperatures. The timeline of field reports should commence when annunciator K3-3-4 begins to alarm. Two minutes after an operator is dispatched, use the attached graphs to report RB temperatures and radiation levels, with the first report being available 5 minutes after event initiation.
 	
Role Play: If dispatched as the Fire Brigade Leader (FBL), **wait** 2 minutes and **report** that you have steam coming from the Reactor Water Clean Up room.
 	
Cue: **If** the applicants look at the RWCU pump area ARM, **inform** them that the meter is NOT working.
	BOP
	• Attempts to isolate RWCU by closing 33-01R, 33-02R and 33-04R
	• Recognizes/reports failure of RWCU IVs (33-01R, 33-02R and 33-04R) to close
	• Dispatches operator and RP tech to obtain Reactor Building General Area temperatures and radiation levels
	• Notifies crew of reports on General Area temperatures and radiation levels
	• Performs RPV water level control actions of N1-SOP-1:
	• Restores RPV water level to 53-95” by controlling injection. (unable to reject through RWCU)
	• Determines #13 FWP was running
	• Determines RPV water level is recovering
	• Verifies at least one Electric FW Pump running
	• Terminates 13 FWP injection as follows:
	  • Places FWP 13 FCV in manual and closes
	  • Disengages 13 FWP
	  • Gives 29-10, FEEDWATER PUMP 13 BLOCKING VALVE a CLOSE signal
	• Verifies RPV water level above 53”
	• Verifies 11/12 FWP controllers in MANUAL and set to zero output
	• Resets HPCI signal
	• Places 11 or 12 FWP BYPASS Valve in AUTO, sets to 65-70”
	• If RPV level reaches 85 inches and rising, then:
	  • Verifies off all Feedwater Pumps
	  • Secures CRD Pumps not required
	  • Closes FWIVs if required
	• Closes MSIVs if required

Event 7, 8, and 9 continued	**BOP continued**
	• Maintains RPV water level in assigned band
	• Notifies crew of reports on General Area temperatures and radiation levels
	• When EOP-C2, RPV Blowdown, is entered:
	  • Verifies Emergency Condensers in service
	  • Verifies open 39-05
	  • Verifies open 39-06
	  • **Opens 4 ERVs (CT-2.0)**





Event Termination Criteria	• RPV Blowdown in progress

Copy ____ of ____

Training Id: **NMP1 NRC 2024 Scenario #3** Revision: **0.0**

Title: **Simulator Scenario #3**

	Signature / Printed Name	Date
Developed By	Signature on File / Mike Dougherty	2/2/2024
Validated By	Elmer Warner	4/4/2024
	Tim Heagerty	
	Ken Graham	
Facility Reviewer	Signature on File / Dave Mason	7/22/24

References

N1-OP-5, Control Rod Drive System

N1-OP-10, Reactor Building Heating Cooling and Ventilation System

N1-OP-16, Feedwater System Booster Pump to Reactor

N1-OP-43A, Plant Startup

N1-ARP-K1, Control Room Panel K1

N1-ARP-L1, Control Room Panel L1

N1-SOP-24.1, TBCLC Failure

N1-SOP-1, Reactor Scram

N1-EOP-RPV, RPV Control for Modes 1 and 2

N1-EOP-PC, Primary Containment Control for Modes 1 and 2

N1-EOP-1, NMP1 EOP Support Procedure

N1-EOP-HC, EOP Hard Cards Procedure

Unit 1 Technical Specifications

Instructor Information

Scenario Description

Sequence of Events / Expected Crew Response:

The scenario begins at approximately 1% power. Containment Spray Pump 111 is out of service for maintenance. The crew is directed to place Feedwater Booster Pump #13 into service per N1-OP-16. After the pump has been placed into service, the crew will continue with rod withdrawals to establish and maintain a 75ºF/hr HUR. Once the crew commences with rod withdrawals to establish a 75ºF/hr HUR one of the control rods will double notch. The crew will take actions per N1-OP-5 to restore the rod to its intended position.

Then, the RB Ventilation Rad Monitor will fail upscale. The Reactor Building Ventilation system (RBVS) will fail to automatically isolate in which the crew will take actions to shutdown RBVS and verify the Reactor Building Emergency Ventilation system (RBEVS) has started. The failure of the RBVS system to automatically isolate will require a Technical Specification entry.

Next, IRM #11 will fail downscale. The crew will bypass the failed instrument to clear the rod block in accordance with N1-ARP-F2 and N1-OP-38B. Once IRM #11 has been bypassed the Rod Block will clear and allow the crew to continue pulling rods to establish a 75ºF/hr HUR.

Next, an Emergency Condenser (EC) #11 tube leak will occur. The crew will isolate the affected EC per the ARP **(Critical Task**). The tube leak in the isolated EC will require a Technical Specification entry.

Next, Turbine Building Closed Loop Cooling (TBCLC pump 11 will trip. TBCLC pump #12 will fail to auto start requiring the crew wo manually start TBCLC pump #12. Shortly after the crew starts TBCLC #12, the pump will trip requiring the crew to manually scram the reactor per N1-SOP-24.1. Following the scram, Condensate Pump #11 will trip and all remaining Condensate pumps will trip when the crew attempts to start them. This will remove all high pressure injection sources from the Feedwater system.

When the scram occurs a LOCA will also occur. The crew will also monitor and report that all Core Spray pumps failed to auto start. The crew must take action to manually start the Core Spray pumps. The crew will utilize all sources of low pressure injection sources to restore and maintain RPV level > TAF (**Critical Task).**

- Termination Criteria

1) RPV water level being restored to the ordered band
2) Drywell pressure controlled < PSP utilizing Containment Spray Pumps

- Critical Tasks

Critical Task (#1)	**Given indications of an Emergency Condenser tube leak, the crew will isolate the Emergency Condenser within 15 minutes of receiving indications of the tube leak per N1-ARP-K1-1-2.**
CT-1.0 Justification:	
Safety Significance	*The EC tube leak results in a radiological release to the atmosphere. The crew will isolate the EC steam line to terminate the release before an emergency declaration is required.*
Success Path:	*The crew will isolate the affected EC in accordance with N1-ARP-K1 to minimize the release or radioactivity to the public.*
Initiating Cue:	*Multiple annunciators will provide indications of a tube leak in the Emergency Condenser. Rising water temperatures and rad levels on the Emergency Condenser Vents will provide indication on the affected Emergency Condenser. Field reports will provide indication of steam coming from the EC vent on the North side of the Reactor Building. N1-ARP-K1 provides direction to isolate the Emergency Condenser.*
Measurable Performance Standard:	*The crew will manually isolate the EC's will provide observable actions for the evaluation team.* ***Bounding Criteria:*** *Time based on Operations Representative recommendation to allow the crew time to evaluate the validity of the tube leak and to take the actions required in N1-ARP-K1-1-2.*
Performance Feedback:	*Emergency Condenser pressure lowering, lowering Rad Levels on the EC vents will provide performance feedback regarding the successful isolation of the Emergency Condenser.*

Critical Task (#2)	**Given a coolant leak inside the Containment, lowering Reactor water level, and failure of injection systems to automatically inject to the Reactor, the crew will inject to the Reactor to restore and maintain Reactor water level above -84", in accordance with N1-EOP-RPV. Reactor water level must not be below -84" for more than 10 minutes.**
CT-2.0 Justification:	
Safety Significance	*Maintaining Reactor water level above -84 inches ensures adequate core cooling through the preferred method of core submergence. This protects the integrity of the fuel cladding.*
Success Path:	*The crew will inject with all available low-pressure preferred and alternate injection sources (Details E1 and E2) in accordance with N1-EOP-RPV (1-2).*
Initiating Cue:	*Multiple Reactor water level indicators and annunciators will provide indications of lowering Reactor water level. N1-EOP-RPV (1-2) provides multiple procedure steps directing injection with preferred and alternate injection systems.*
Measurable Performance Standard:	*Manipulation of pumps and/or valves in the preferred or alternate injection system(s) will provide observable actions for the evaluation team. As well as operating ERVs for depressurization.* ***Bounding Criteria:*** *Time requirement based on Operations representative recommendation to allow RPV pressure to lower to within the capacity of the low-pressure injection sources.*
Performance Feedback:	*Multiple Reactor water level indicators and annunciators will provide performance feedback regarding the success of injection with preferred and alternate injection systems.*

- Length
  - ~60 minutes
- Mitigation Strategy Code
  - DMS-RL-01, LOCA, RPV Level maintained above TAF using preferred injection systems; containment parameters controlled: no blowdown
- Technical Specifications
  - TS 3.3.7.b, 15 day LCO
- EAL Classification
  - Alert per EAL FA1 – ANY Loss or ANY Potential Loss of either Fuel Clad or RCS
- Special Orders
  - None

- **Initial Conditions**
  - IC Number
    - IC-243

Presets / With Triggers

Malfunctions

1)	**RD42**, DOUBLE NOTCH CONTROL RODS, FINAL = True	**TRG 1**
2)	**RM73A**, PRM Rx Bldg Vent Exh Rad Mon 11 – Normal Malfunction, FINAL = 100%	**TRG 2**
3)	**HV04**, RB Ventilation Fails to Isolate, FINAL = True	**Inserted**
4)	**NM11A,** IRM Channel 11 Failure – Downscale, FINAL = True	**TRG3**
5)	**EC06A**, Emergency Condenser Tube Leak 111, FINAL = 75, RT = 3 min	**TRG 4**
6)	**CW05A**, Turbine Building Closed Loop Cooling Pump Trip 11, FINAL = True	**TRG 5**
7)	**CW21B**, TBCLC Pump #12 Auto-Start Failure, FINAL = True	**Inserted**
8)	**CW05B**, Turbine Building Closed Loop Cooling Pump Trip 12, FINAL = 12, DT = 5 min	**TRG 6**
9)	**RR29**, RR Loop Rupture on Pump 15 Suction Line (LOCA), FINAL = 45%, INITIAL = 15%, DT = 3 min, RT = 5 min	**TRG 7**
10)	**CS06**, CS Pumps Failure to Auto Start, FINAL = True	**TRG 7**
11)	**FW01A**, Condensate Pump Trip 11, FINAL = True	**TRG 7**
12)	**FW01B**, Condensate Pump Trip 12, FINAL = True	**TRG 7**
13)	**FW01C**, Condensate Pump Trip 13, FINAL = True	**TRG 7**

Remotes

1) None

Overrides

1)	**DI-5265**, INOP 2L6/202-31A POS A, FINAL = Off	**Inserted**

Annunciators

None

Event Triggers

Event #	Event Action	Command
TRG 1 – Inserts control rod double notching malfunction when control rod 42-31 is at position 16.	rdvposd(82)==256	**Blank**
TRG 15 – Deletes control rod double notching malfunction when control rod 42-31 is at position 20.	rdvposd(82)==320	dmf rd42
TRG 6 – Activates when TBCLC Pump #12 switch is taken to "START"	zdcwtbst(2)==1	**Blank**
TRG 7, Inserts LOCA on Recirc L 15 and trips all condensate pumps when Mode Switch is taken to SHUTDOWN	zdrpstdn==1	**Blank**

Equipment Out of Service

1) Containment Spray Pump #111 is out of service with an info/caution tag

Support Documentation

1) ReMA for conducting a Reactor Startup marked up to the rod currently selected on the Core Display (Page 4)
2) Copy of N1-OP-43A marked up to Step E.3.4
3) Copy of N1-OP-16 with P&L's and section E.3.0

Miscellaneous

1) Verify the HUR screen is active on R-time and selected to #11 RRP suction
2) Set HUR limit to 75^0F/hr
3) Verify RWM sequence Editor set to A2UP, Simulator Startup – 2023 to 2025 is set to ACTIVE
4) Set RPV water level is in the low end of the band of 75" to 85" on the Yarways.

SHIFT TURNOVER INFORMATION

ON COMING SHIFT: □ N ■ D DATE: Today

PART I: To be performed by the oncoming Operator before assuming the shift.

- Control Panel Walkdown (all panels) (SRO, ROs)

PART II: To be reviewed by the oncoming Operator before assuming the shift.

- LCO Status (SRO)
- Shift Turnover Information Sheet

Evolutions/General Information/Equipment Status:

- Reactor power is approximately 1%.
- Containment Spray Pump #111 is out of service for maintenance.
- 15 day LCO 3.3.7.b is in effect for Containment Spray

PART III: Remarks/Planned Evolutions:

- Place Feedwater Booster Pump #13 in service per N1-OP-16, Section E.3.0. An Equipment Operator has already verified that cooling water is available to all Feedwater Booster Pumps and lubrication is at the High level for all Feedwater Booster Pumps.
- Then, establish a 75^0F/Hr HUR per N1-OP-43A and the ReMA provided. Reactor Engineering has directed single notch withdrawal on page 4 of the S/U sequence..
- RPV water level is being maintained 75” to 85” on the Yarways during reactor startup

Event #1: Place Feedwater Booster Pump #13 in service

Event Information	• Reactor Power is at approximately 1% power • The crew will place Feedwater Booster Pump in Service per N1-OP-16.

	SRO • Directs placing Feedwater Booster Pump (FWBP) #13 in service per N1-OP-16 • Provides oversight for evolution
	BOP • Acknowledges direction from SRO • References N1-OP-16, Section E.3
	ATC • Monitors plant parameters

Note:
The crew should realize that cooling water and lubrication for starting FWBP's has already been completed per the Turnover Sheet.
 	
Role Play: If directed to verify cooling water and lubrication levels **wait** 3 minutes and **report** that cooling water is available for FWBP #13, and lubrication levels are at the High level mark.
 	
Role Play: If directed to stand by FWBP #13 to verify pump start and proper oil levels and oil flow, **wait** until the operator starts FWBP #13 and **report** 5 – 7 seconds later that you have a good pump start on FWBP #13 and oil levels are in normal range and oil flows are normal.
	BOP
	• Makes a plant announcement for starting FWBP #13
	• Verifies a Condensate pump is running
	• Verifies Condensate temperature leaving Hotwell (A369) is $>35^0$F
	• Verifies the annunciator H3-3-6, REACTOR FW BOOSTER P 13 TRIP OL SUCTION is clear
	• Verifies computer point A024 indicates NORM for FWBP #13
	• Verifies the following:
	  ○ Confirms Cooling water is available
	  ○ Confirms lubrication is at the High level for the Standby pumps.
	• Starts FWBP #13 (Pump will auto start when the control switch is taken out of PTL)
	  ○ Confirms system pressure and pump amps indicate system is stable.
	• Confirms pump oil levels in normal range and oil return flow normal.
	• Maintains vessel level using FWP 11(12) BYPASS VALVE controller

Events #2 and #3: Raise Reactor Power with control rods to establish a 75^0F/hr HUR, Control Rod Double Notch

Event Information	• Reactor power is approximately 1% • The crew raised Reactor power with control rods to establish a 75^0F/hr HUR • One rod will double notch

Note: Lead examiner may move to the next event once sufficient action is observed on the reactivity manipulation.	**SRO** • Directs power ascension with control rods in accordance with N1-OP-43A and the Reactivity Maneuver Instruction (REMA) to establish a 75^0F/hr HUR • Provides oversight of reactivity maneuver • Acknowledges control rod double notch • Directs execution of N1-OP-5, Section H.9.0
	ATC • Acknowledges direction from SRO ○ Raises reactor power to re-establish a 75^0F/hr HUR per N1-OP-43A, and rod sequence sheet provided ○ Verifies Control Rod Power is On ○ Depresses Rod Select pushbutton for the control rod ○ Places 4S1 Control Rod Movement switch to the rod out Notch position • Observes IRM and APRM response ○ Range IRM switches as follows: - 0-125 scale between 25-75 nominal - 0-40 scale between 8-24 nominal • Observes Reactor Vessel temperature to ensure a 100^0F/hr HUR is not exceeded ○ Monitors Recirculation flow • Monitors Feedwater flow and RPV water level • Observes power-to-flow map restrictions
	BOP • Monitors plant parameters • Peer checks ATC • Peer Checks HUR

Event 2 & 3 continued **Note:** Verify **TRG 1 goes active** when control rod 42-31 is at position 16 and **inserts malfunction**: **RD42,** DOUBLE NOTCH CONTROL RODS, FINAL = True **TRG 1** *Expected annunciator:* *F3-4-4, ROD BLOCK* Verify **TRG 15 goes active** when control rod 42-31 is at position 20 and **deletes malfunction RD42**. **Note:** Initiate the next event shortly after rod withdrawals commence. It is not the intention of the scenario to cause IRMs to be shifted to range 10.	**RO** • Selects next control rod • Recognizes/reports control rod 42-31 double notched from position 16 to 20 • Executes N1-OP-5 section H.9.0 • Inserts control rod 10-23 from position 06 to 04

Event #4: RB Vent Rad Monitor Fails Upscale, RB Vent Fails to Isolate

Event Information	• Reactor Power at approximately 1%. • Reactor Building Ventilation Radiation Monitor, Channel 11, fails upscale • Crew will determine that Reactor Building Ventilation failed to isolate • Crew will take actions to isolate Reactor Building Ventilation and start RB Emergency Ventilation • SRO will make Technical Specification determination for the failed instrument

When directed by examiner, **insert** the following **malfunction**: **RM73A,** PRM Rx Bldg Vent Exh Rad Mon 11 – Normal Malfunction, FINAL = 100% **TRG 2** Verify the following **malfunction** and **Override** is **preset**: **HV04**, RB Ventilation Fails to Isolate, FINAL = True **DI-5265**, INOP 2L6/202-31A POS A, FINAL = Off *RBVS fans trip* *RBEVS initiates* *RB isolation valves remain open* *Expected Annunciators:* *L1-4-3, RB VENT RAD MONITOR OFF NORMAL* *L1-1-5, RB VENT EXH FAN 11- 12 TRIP* *L1-3-6, EMER VENT CH 11 RELAY OPERATE* *L1-4-6, EMER VENT CH 12 RELAY OPERATE*	**CREW** • Recognize/reports annunciator • Diagnose radiation monitor failed • Recognize Failure of RB to isolate

Event 4 continued **Note:** If the crew quickly determines the event is due to a failed signal on a single rad monitor, entry into N1-EOP-SC may be avoided. **T.S.: 3.4.2**, Reactor Building Integrity – Isolation Valves a. TS 3.4.2a: The Normal Ventilation System Isolation valves shall be operable at all times when secondary containment integrity is required. b. TS 3.4.2b:If Specification 3.4.2a is not met, the actions listed below shall be taken: 1. The reactor shall be in the cold shutdown condition with ten hours **Note**: The following Technical Specification is on in effect if the crew secures one train of RBEVS following initial start of both trains. **T.S. 3.4.4**, Emergency Ventilation System e. During reactor operation, including when the reactor coolant system temperature is above 215^0F, from and after the date that one circuit of the emergency ventilation system is made or found to be inoperable for any reason, reactor operation is permissible only during the succeeding seven days unless such circuit is sooner made operable., provided that during such seven days all active components of the other emergency ventilation circuit shall be operable.	**SRO** • Acknowledges reports • Directs execution of ARPs • May enter N1-EOP-SC, Secondary Containment Control • Directs manual isolation of the Reactor Building • Determines that the Reactor Building failed to isolate and entry into Tech Spec 3.4.2 is required • Enters LCO 3.4.4.e (7 day plant shutdown LCO when one train of EVS is inoperable) • Exits N1-EOP-SC, if entered, once confirmation is received that radiation levels are normal
	RO • Monitors plant parameters

Event 4 continued **Role Play:** If contacted as RP to determine Reactor Building radiation levels, wait 5 minutes and report that Reactor Building radiation levels are all normal. **Note:** The crew may close the Reactor Building Ventilation Isolation Dampers prior to referencing procedure, as a backup to a failed automatic action. **Role Play:** If dispatched to check the status of the RB Ventilation Isolation Dampers, **wait** 3 minutes and **report** that the Isolation Dampers open.	**BOP** • Verifies Reactor Building Radiation Monitor 11 is UPSCALE • Confirms alarm on computer printout • Closes RB Ventilation Isolation dampers (202-15, 202-16, 202-31, 202-32) • Verifies shutdown of RB Vent Sys and startup of RBEVS per N1-EOP-HC attachment 6 or N1-OP-10 section H.2.0

Event 4 continued	**BOP continued**
	Possible actions per N1-EOP-HC attachment 6:
	• Verify the following fans started:
	  • 202-53, EVS FAN 11
	  • 202-33, EVS FAN 12
	• Verify the following fan control switches in OFF:
	  • REACTOR BLDG SUPPLY FAN 11
	  • REACTOR BLDG SUPPLY FAN 12
	  • REACTOR BLDG EXHAUST FAN 11
	  • REACTOR BLDG EXHAUST FAN 12
	• Verify open the following valves:
	  • EM VENT EXHAUST FAN 11 OUTLET BV
	  • 202-37, EM VENTILATION LOOP 11 INLET BV
	  • EM VENT EXHAUST FAN 12 OUTLET BV
	  • 202-38, EM VENTILATION LOOP 12 INLET BV
	• Verify closed the following valves:
	  • EM VENTILATION LOOP 11 COOLING BV
	  • EM VENTILATION LOOP 12 COOLING BV
	  • 202-15, REACTOR BLDG SUPPLY ISOLATION VALVE 11
	  • 202-16, REACTOR BLDG SUPPLY ISOLATION VALVE 12
	  • 202-32, REACTOR BUILDING EXHAUST ISOLATION VALVE 11
	  • 202-31, REACTOR BUILDING EXHAUST ISOLATION VALVE 12

Event 4 continued	**BOP continued**
	• Notify Rad Protection, the normal Reactor Building Emergency Ventilation system has isolated AND Reactor Building Emergency Ventilation system is in service
	• BEFORE 30 minutes has elapsed perform ONE of the following in accordance with N1-EOP-HC, Attachment 7:
	  • Secure the train of RBEVS associated with an inoperable EDG
	  OR
	  • Secure a train of RBEVS as directed by the CRS or SM
	• WHEN RBEVS operation is NO longer required, secure RBEVS AND establish normal Reactor Building Ventilation per N1-OP-10
	
	Possible actions per N1-EOP-HC attachment 7:
	• Place EVS FAN 11(12) control switch in Normal-After-START (red flagged)
	• Place EM VENTILATION LOOP 11(12) INLET BV, control switch in OPEN
	• Place EVS FAN 12(11) control switch in PULL-TO-LOCK
	• Notify SM to enter LCO 3.4.4.e (7 day plant shutdown LCO when one train of RBEVS in inoperable)
	• Verify closed EM VENTILATION LOOP 12(11) INLET BV

Note: Examiner may decide to proceed with next event before one train of RBEVS is secured.	

Event 4 continued
 	
Note:
 	
Examiner may decide to proceed with next event before one train of RBEVS is secured.
	BOP continued
	Possible actions per N1-OP-10 section H.2.0:
	• Confirm the following fans started:
	  • 202-53, EVS FAN 11
	  • 202-33, EVS FAN 12
	• Confirm the following fans stopped:
	  • 202-01, REACTOR BLDG SUPPLY FAN 11
	  • 202-02, REACTOR BLDG SUPPLY FAN 12
	  • 202-05, REACTOR BLDG EXHAUST FAN 11
	  • 202-06, REACTOR BLDG EXHAUST FAN 12
	• Confirm open the following valves:
	  • 202-34, EM VENT EXHAUST FAN 11 OUTLET BV
	  • 202-37, EM VENTILATION LOOP 11 INLET BV
	  • 202-35, EM VENT EXHAUST FAN 12 OUTLET BV
	  • 202-38, EM VENTILATION LOOP 12 INLET BV
	• Confirm closed the following valves:
	  • 202-74, EM VENTILATION LOOP 11 COOLING BV
	  • 202-75, EM VENTILATION LOOP 12 COOLING BV
	  • 202-03, REACTOR BLDG SUPPLY FAN 11 INLET DAMPER
	  • 202-04, REACTOR BLDG SUPPLY FAN 12 INLET DAMPER

Event 4 continued **Note:** Examiner may decide to proceed with next event before one train of RBEVS is secured.	**BOP continued** • 202-80, REACTOR BLDG EXHAUST FAN 11 OUTLET DAMPER • 202-81, REACTOR BLDG EXHAUST FAN 12 OUTLET DAMPER • 202-15, REACTOR BLDG SUPPLY ISOLATION VALVE 11 • 202-16, REACTOR BLDG SUPPLY ISOLATION VALVE 12 • 202-32, REACTOR BUILDING EXHAUST ISOLATION VALVE 11 • 202-31, REACTOR BUILDING EXHAUST ISOLATION VALVE 12 • Notify Rad Protection, the normal Reactor Building Emergency Ventilation system has isolated AND Reactor Building Emergency Ventilation system is in service • If desired to secure one train of RBEVS then perform the following: • Place EVS FAN 11(12) control switch to RED FLAG • Place EM VENTILATION LOOP 11(12) INLET BV control switch to OPEN • Verify flow approximately 1600 CFM • Place EVS FAN 12(11) control switch to PULL TO LOCK • Enter LCO 3.4.4.e (7 day plant shutdown LCO when one train of EVS is inoperable) • Verify closed EM VENTILATION LOOP 12(11) INLET BV • Verify in OFF position the following control switches: • REACTOR BLDG SUPPLY FAN 11 • REACTOR BLDG SUPPLY FAN 12 • REACTOR BLDG EXHAUST FAN 11 • REACTOR BLDG EXHAUST FAN 12

Event #5: IRM Downscale Failure

Event Information	• A Plant startup is in progress • IRM 11 fails downscale • Crew will bypass the IRM • SRO will evaluate Tech Specs

When directed by lead examiner, **insert malfunction**: **NM11A,** IRM Channel 11 Failure – Downscale, FINAL = True **TRG 3** *IRM 11 downscale/INOP light lit* *IRM 11 indicates downscale* *Expected annunciators:* *F2-3-6, IRM 11-14* *F3-4-4, Rod Block*	**CREW** • Acknowledges/reports annunciators • Diagnoses IRM 11 failed downscale
	SRO • Acknowledges reports • Reviews Tech Specs • Determines Tech Spec 3.6.2 tables (a) and (g) are satisfied with only one failed IRM • Directs bypassing IRM 11
	ATC • Monitors plant parameters • Verifies range switch proper setting • Monitors IRM recorder for flux levels • Verifies correct position of detector in core • Enters OP-38B to bypass IRM 11 • Places IRM BYPASS switch in IRM 11 position • Confirms IRM BYPASS light is lit on panel E

Event 5 continued	**BOP** • Executes ARP F2-3-6 • Confirms alarm on the computer printout • Observes E panel to determine IRM 11 DOWNSCALE OR INOP light lit • Monitors IRM for malfunction on G Panel • Confirms IRM BYPASS light is lit on the IRM auxiliaries drawer • Confirms computer printout "IRM BYPASS YES"

Event #6: Emergency Condenser Tube Leak

Event Information	• A tube leak in Emergency Condenser 11 causes rising rad levels

When directed by lead examiner, **insert malfunction**: **EC06A**, Emergency Condenser Tube Leak 111, FINAL = 75, RT = 3 min **TRG 4** *EC vent rad levels rise* *Expected Annunciators:* *K1-3-2, EMER CONDENSER 111-112 INLET STEAM TEMP HIGH* *K1-1-2, EMER COND VENT 11 RAD MONITOR* *K1-3-3, EMER COND 111-112 SHELL TEMP HIGH*	**CREW** • Recognize/report rising EC 11 temperatures and vent rad monitor levels • Diagnose EC 11 tube leak
Role Play: If called to determine the Risk Informed Completion Time **acknowledge** the **direction**. This task will not be completed by the end of the scenario. **T.S 3.1.3.b:** Emergency Cooling System b. If one emergency cooling system becomes inoperable, Specification 3.1.3.b shall be considered fulfilled, provided that the inoperable system is returned to an operable condition within 7 days or in accordance with the Risk Informed Completion Time Program and the additional Surveillance required in 4.1.3.f is performed.	**SRO** • Acknowledge reports • Direct execution of ARP • Direct isolation of EC 11 • Determine Tech Spec 3.1.3.b requires restoring the EC to service within 7 days

Event 6 continued	**ATC** • Monitors plant parameters
Role Play: IF asked as RP to evaluate dose rates on RB 340' , acknowledge the request. **Role Play:** If asked as Chemistry to perform sampling and/or EC effluent dose assessment, acknowledge the request.	**BOP** • Executes ARP K1-1-2: • Confirms alarm on computer printout • Confirms radiation level on Panel J • Contacts RP to check dose rates at EC piping above elevation 340' • Directs Shift Chem Tech to obtain an evaluate an EC shell side sample • With SRO concurrence, isolates EC 11, as follows: • **Closes 39-07R, EC STM ISOLATION VALVE 112 (CT-1)** • **Closes 39-09R, EC STM ISOLATION VALVE 111 (CT-1)** • **Verifies closed 39-05, EMERG CNDSR COND RET ISOLATION VALVE 11 (CT-1)** • Closes 39-11R, EMERG CNDSR STM SUPPLY DRAIN IV 111 • Closes 39-12R, EMERG CNDSR STM SUPPLY DRAIN IV 112 • Closes 05-01R, EMERG COND VENT ISOLATION VALVE 111 • Closes 05-11, EMERG COND VENT ISOLATION VALVE 112 • References N1-OP-13 section H.10, as time permits

Event #7 and #8: Running TBCLC Pump Trips, TBCLC Pump Fails to Auto Start, Loss of All TBCLC

Event Information	• Crew responds to trip of TBCLC pump #11 • TBCLC pump 12 fails to auto start • Crew will manually start TBCLC pump 12 • TBCLC pump 12 will trip following the manual start • The crew will respond to a loss of all TBCLC • Crew will scram the reactor

Verify the following **malfunction** is **preset**: **CW21B**, TBCLC Pump #12 Auto-Start Failure, FINAL = True When directed by examiner, **insert malfunction:** **CW05A,** Turbine Building Closed Loop Cooling Pump Trip 11, FINAL = True **TRG 5** *Lowering TBCLC discharge pressure to 0 psig* *TBCLC Pump 11 Amps at 0* *TBCLC temperature starting to rise* *TBCLC Pump 12 indications of not running* *Expected Annunciators:* *H1-1-4, TB Cooling WTR Pump 11 Trip/Trouble* *H1-3-4, Turbine BLDG. Cooling Water PRESS-TEMP Makeup Flow*	**CREW** • Acknowledges/reports annunciators • Reports loss of TBCLC pump #11
	SRO • Acknowledges reports • Directs starting TBCLC pump 12 manually • Acknowledges report of starting TBCLC pump 12 • Updates the crew and directs entry into N1-SOP-24.1 following trip of remaining TBCLC pump. • Acknowledges report from the BOP • Directs RO to scram the reactor • Directs the crew to enter N1-SOP-1

Event 7 & 8 continued	**RO** • Monitors plant parameters • Dispatches an Equipment Operator to investigate trip of TBCLC 11
Role Play: If dispatched to investigate trip of TBCLC pump 11 and/or to verify a good start on TBCLC 12, **wait** 3 minutes and **report** that there is an acrid odor coming from TBCLC 11 and the breaker on PB 11 shows overcurrent flags. If asked report good start on TBCLC 12. **Verify** the following **malfunction inserts** when TBCLC Pump 12 is started: **CW05B**, Turbine Building Closed Loop Cooling Pump Trip 12, FINAL = 12, DT = 5 min **TRG 6** *Lowering TBCLC discharge pressure to 0 psig* *TBCLC Pump 12 Amps at 0* *TBCLC temperature starting to rise* *Expected Annunciators:* *H1-2-4, TB Cooling WTR Pump 12 Trip/Trouble* *H1-3-4, Turbine BLDG. Cooling Water PRESS-TEMP Makeup Flow*	**BOP** • Follows actions in N1-ARP-H1 for trip of TBCLC 11 • Recognizes and reports TBCLC pump 12 has failed to auto start • Updates the crew they are manually starting TBCLC 12 • Will recognize and report that TBCLC 12 has tripped • Acknowledges direction to enter N1-SOP-24.1

Event 7 & 8 continued *N1-SOP-24.1 Actions*	**BOP** • Follows actions in N1-ARP-H1 for trip of TBCLC 11 • Monitors all operating equipment coolded by TBCLC • Informs the CRO that the Override directs: o Scram the Reactor and concurrently enter N1-SOP-1 o Initiate Emergency Condensers o Close MSIV's o Trip Reactor Recirc Pump MG sets o Start AC or DC Bearing Oil pump o Place in Pull-T0-Lock: - Turb Aux Oil Pump 11 - Turb Aux Oil Pump 12 - House Service Air compressor 11
	RO • Acknowledges direction from the SRO to scram the reactor and enter N1-SOP-1 • Depresses the REACTOR TRIP 11 and 12 pushbuttons • Places Mode Switch to SHUTDOWN • Provides Scram Report

Events #9 & #10: LOCA into Drywell, Condensate Pumps trip, Core Spray Pumps Fail to Auto-Start

Event Information	• Crew has experienced a complete loss of Turbine Building Closed Loop Cooling • Reactor has been scrammed • Crew is taking actions for N1-SOP-24.1 • Crew has entered N1-SOP-1 • Crew will identify Feedwater Isolation Valves failed closed • Crew will identify that Core Spray Pumps have failed to auto start and will manually start the Core Spray Pumps • Crew will identify a Loss of Coolant Accident into the Primary Containment and enter N1-EOP-RPV and N1-EOP-PC when Drywell pressure exceeds 3.5 psig

Verify the following **malfunctions** have **inserted** following the Mode Switch taken to SHUTDOWN: **FW01A**, Condensate Pump Trip 11, FINAL = True **FW01B**, Condensate Pump Trip 12, FINAL = True **FW01C**, Condensate Pump Trip 13, FINAL = True **RR29**, RR Loop Rupture on Pump 15 Suction Line (LOCA), FINAL = 45%, INITIAL = 15%, DT = 3 min, RT = 5 min **CS06**, CS Pumps Failure to Auto Start, FINAL = True **TRG 7** *Expected plant response:* *CRD charging water pressure rises* *CRD drive water pressure lowers* *CRD cooling water pressure and flow lower* *Expected Annunciator:* *F3-1-5, CRD CHARGING WTR PRESSURE HI/LO*	**CREW** • Identify and report that all condensate pumps have tripped and are unavailable • Identify and report Core Spray Pumps have failed to auto start • Identify and report degrading conditions in the Primary Containment due to a Loss of Coolant Accident

Event 9 & 10 continued **Note:** Emergency Condenser was isolated earlier in the scenario due to a tube leak. MSIVs were closed or will be closed due to actions required in N1-SOP-24.1.	**SRO** • Acknowledges scram report • Direct entry into N1-SOP-1, Reactor Scram • Acknowledge report that all condensate pumps have tripped and are unav0ailable • Directs BOP to maintain RPV water level with CRD pumps • Acknowledge report that Core Spray Pumps have failed to auto start and are now running • Acknowledges report that Primary Containment conditions are degrading • Directs entry into N1-EOP-RPV and N1-EOP-PC when Drywell pressure exceeds 3.5 psig • Directs RO to insert Core Spray jumpers per N1-EOP-1, Attachment 4. • Directs execution of N1-SOP-1 • Directs a level band of 53" to 95" using CRD and Core Spray • Directs RPV pressure controlled < 120 psig to facilitate placing Shutdown Cooling in service using Emergency Condenser 12 • Directs MSIVs closed for inventory control and complete loss of TBCLC • Directs RO to place Containment Spray pumps in PTL • Directs RO to spray the Drywell when Torus Pressure exceeds 13 psig or Drywell Average Temperature exceeds 225^{0}F

Event 9 & 10 continued
 	
Role Play: If dispatched to investigate the trip of all three condensate pumps wait 10 minutes and report that all condensate pump breakers are tripped and all motors are hot to the touch.
 	
Note: The crew may inject with Liquid Poison for RPV level control.
	RO
	• Provides scram report
	  o Mode Switch in SHUTDOWN
	  o All rods are in
	  o Power is down scale
	  o RPV pressure, trend and control
	  o RPV water level, trend and control
	• Reports Feedwater is unavailable for RPV level control due to all condensate pumps have tripped.
	• Acknowledges direction to enter N1-SOP-1
	• Monitor plant parameters
	• Reports degrading conditions in Primary Containment
	• Will take critical parameter to perform a Containment Isolation before Drywell pressure exceeds 3.5 psig
	• Acknowledges direction to place Containment Spray Pumps in PTL
	• Places Containment Spray pumps in PTL and notifies SRO
	• Acknowledges direction to install Core Spray Jumpers per N1-EOP-1, Attachment 4
	• Starts Containment Spray pumps when directed following Torus Pressure exceeding 13 psig or Drywell average temperature > 225^0F

Event 9 & 10 continued	**BOP** • Acknowledge direction from SRO to enter N1-SOP-1 • Verifies RPV level is greater the 53” • Verifies FWP 11 and 12 Yokogawas’ in MANUAL with zero output • Resets HPCI • Place desired BYPASS valve in AUTO, set at 65” to 70” • Recognizes and reports that all condensate pumps have tripped and FW system is unavailable for RPV level control • Acknowledges entry into N1-EOP-RPV and N1-EOP-PC due to degrading Drywell conditions • Acknowledges RPV water level band of 53” to 95” • Acknowledges RPV pressure controlled < 120 psig to facilitate placing Shutdown Cooling in service using Emergency Condenser 12 • Reports level is NOT recovering with CRD pumps • Reports that RPV water level is slowly lowering due to the LOCA in the Primary Containment and will need to use Core Spray pumps to maintain RPV water level • Reports Core Spray Pumps have failed to auto start and will be manually starting Core Spray pumps for RPV water level control • **Starts Core Spray pumps and Core Spray Topping Pumps and restores RPV water level to 53” to 95” level band (CT-2)** • Throttles Core Spray flow using Core Spray Discharge Isolation valves once Core Spray Jumpers have been installed to recover RPV Water level to 53” to 95”

Event Termination Criteria	• RPV water level being restored to the ordered band • Drywell pressure controlled < PSP utilizing Containment Spray Pumps