

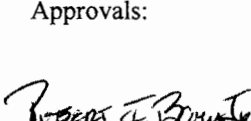

NRC JPM RO COO1
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

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

Revision: NRC 2010

Task Number: N/A

Approvals:

  1 9/17/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: ☒ Perform _____ Simulate

Evaluation Location: _____ Plant ☒ Simulator

Expected Completion Time: 20 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up:

1. Initialize Simulator to IC-160
2. Verify the following overrides are set:
 - a. 5M80AO3550 = 73.00
 - b. 5M81AO3560 = 75.00
 - c. 5M118AO3860 = 76.00
 - d. 5M116AO3840 = 68.00
 - e. 5AR1TS1AO31000 = 68.00
 - f. 13M1AO42680 = 69.00
 - g. 9M53AO51270 = 70.50
3. Take the simulator to Run, and then back to Freeze
4. Verify average Drywell temperature is less than 130°F
5. Verify total Recirc flow is 38 Mlbm/hr
6. Verify FWLC is selected to column 11
7. Turn off PI monitor

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, the use of applicable methods of verification and checking are expected. Therefore, either another individual or I will act as the independent verifier or peer checker.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**. All steps are sequenced critical unless denoted by a “•”.
2. During Evaluated JPM:
 - Self checking shall be demonstrated.
3. During Training JPM:
 - Self checking shall be demonstrated.
 - Peer checking shall be demonstrated.

References:

1. NUREG 1123, 2.1.18, RO 2.9
2. N1-ST-DO

Tools and Equipment:

None

Task Standard: Control room RPV water level readings are taken for N1-ST-DO. Out of spec readings are identified to SRO and inoperable equipment is identified by the candidate.

Initial Conditions:

1. The plant is operating at approximately 67% power.
2. N1-ST-DO, Daily Checks, is in progress.
3. The provided printout shall be used to determine computer point and PI data.
4. Instructor to ask the operator for any questions.

Initiating cue:

“(Operator’s name), obtain the instrument readings needed from control room panels to complete N1-ST-DO Attachment 4 sections 5.0 and 6.0 only, then complete section 8.4 in the body of the procedure. When completed, report findings and provide completed sections to SRO.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat

RECORD START TIME _____

1. Obtain a copy of the reference procedure and review/utilize the correct section	N-ST-DO obtained, sections 5.0 and 6.0 referenced	Sat/Unsat
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Note: Completed N1-ST-DO is attached as JPM key. Small differences in recorded values may occur due to instrument interpolation.

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
2. Records section 5.0 readings	Records Reactor Recirc Pump Inlet Temperature readings on Attachment 4 Section 5.0	Sat/Unsat
3. Compare Recirc Pump Inlet Temperature readings and determines readings within 15°F	Compares readings and determines readings within 15°F of each other	Sat/Unsat
	Checks YES block in Section 5.0, indicating the maximum difference in loop temperatures is < 15°F	Pass/Fail
4. Record section 6.0 readings	Records RPV water level readings on Attachment 4 section 6.0	Sat/Unsat
Cue: Another operator has completed the required Independent Verifications.		
5. Record Total Recirc Flow	Records total recirc flow in the correct box on Attachment 4 section 6.0	Sat/Unsat
6. Determines average Drywell temperature	Observes average Drywell temperature is less than 125°F	Sat/Unsat
7. Analyzes Yarway level indicator deviation	Determines Yarway level indicator deviation is less than the 6 inch limit	Pass/Fail
Note: This may be evidenced by the lack of a report to the contrary.		
8. Analyzes GEMAC level indicator deviation	Determines GEMAC level indicator deviation is greater than the 6 inch limit	Pass/Fail
9. Determines GEMAC level indicators are inoperable	Checks INOP option in step 8.4	Pass/Fail
10. Provides completed sections to SRO and informs of out of spec readings	Proper communications used (GAP-OPS-01)	Sat/Unsat

TERMINATING CUE: Control room readings are taken. Out of spec readings are identified to SRO and inoperable equipment is identified by the candidate.

RECORD STOP TIME _____

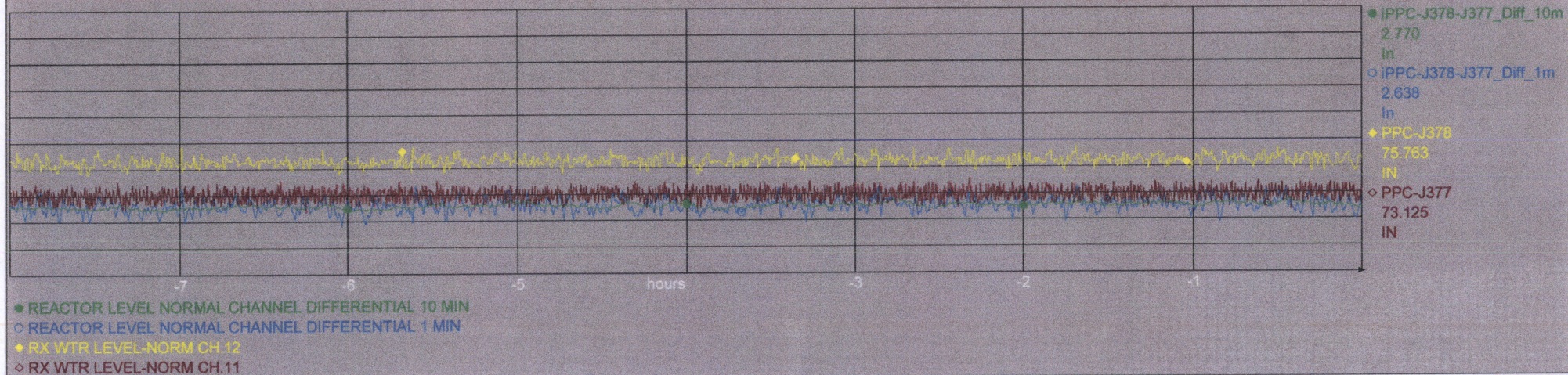
Initial Conditions:

1. The plant is operating at approximately 67% power.
2. N1-ST-DO, Daily Checks, is in progress.
3. The provided printout shall be used to determine computer point and PI data.

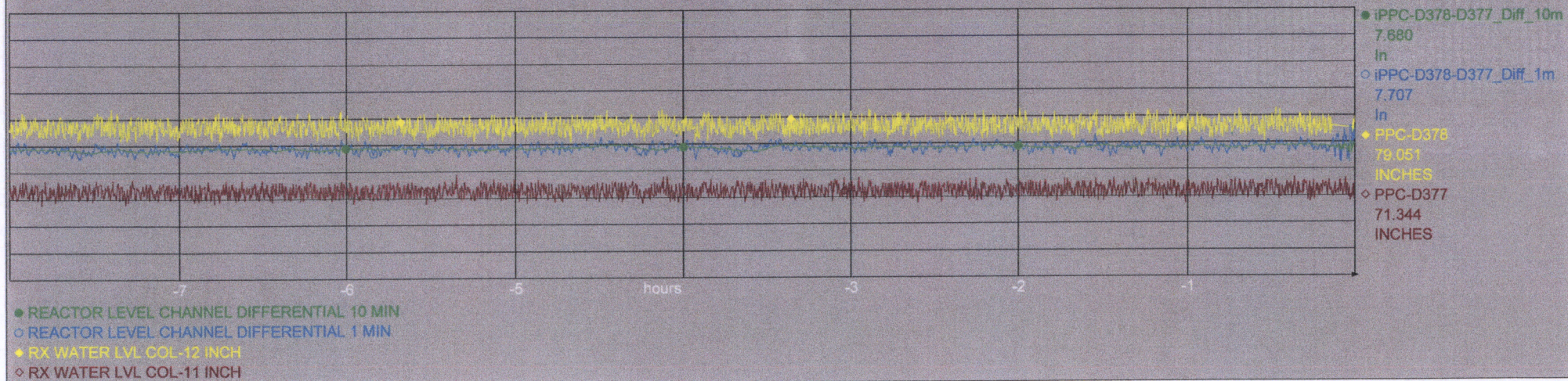
Initiating cue:

“(Operator’s name), obtain the instrument readings needed from control room panels to complete N1-ST-DO Attachment 4 sections 5.0 and 6.0 only, then complete section 8.4 in the body of the procedure. When completed, report findings and provide completed sections to SRO.”

Yarway Transmitters



GEMAC Transmitters



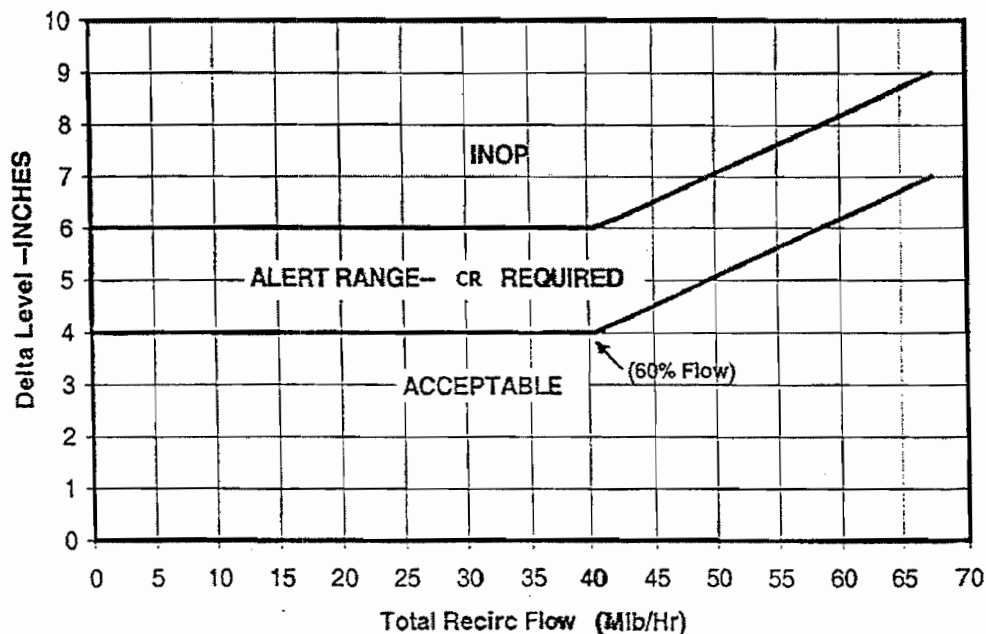
KEY

8.0 PROCEDURE

NOTE: Steps 8.1 through 8.5 AND steps within Attachment 4 may be performed in any order or concurrently.

- 8.1 Complete Attachment 4, Daily Checks OR attach an approved SOMS printout.....()
- 8.2 Verify GROSS_ENERGY indicates RUNNING in 3DWinR.....()
(STA)
- 8.3 Verify Past Due Surveillance Report as follows:
- Verify Surveillance Requirements with upcoming Late End date are scheduled PRIOR to the Late End date.()
(SRO)
 - IF Surveillance Requirement with upcoming Late End date is NOT scheduled, THEN contact the Work Week Manager.()
(SRO)
 - Verify equipment with overdue Surveillance Requirement(s) is/are tracked as inoperable in the ESL.()
(SRO)
- 8.4 Determine GEMAC 11/12 Variance as a function of Total Recirc Flow using one of the following sources for delta level: (Note, ignore negative sign, if any.)
- ☒ Pi – Calculated GEMAC Level Delta (preferred)
 - ☐ Delta between the Ch 12 and Ch 11 computer points
 - ☐ Delta between the Ch 12 and Ch 11 meters

GEMAC LEVEL COLUMN 11 / 12 VARIANCE



- ☒ **INOP** Range, declare GEMAC 11 and/or 12 INOP
- ☐ **ALERT** Range, generate CR for Engineering Evaluation
- ☐ **ACCEPTABLE** Range, no action required.

KEY

KEY

ATTACHMENT 4: DAILY CHECKS

1.0 Mode Switch Position

☐ RUN ☐ STARTUP ☐ SHUTDOWN ☐ REFUEL

2.0 Barometric Pressure

Computer point B474 OR pressure instrument in SM office
IF computer out-of-service.

_____ "HGA

3.0 RPS Channel Trouble Lights

- Channel 11 Light (F-Panel) ☐ ON ☐ OFF
- Channel 12 Light (F-Panel) ☐ ON ☐ OFF

4.0 Reactor Recirc Pump Low Press Seal Pressure

- RRP 11 LP Seal Press (Min 425, Max 625) _____ psig
- RRP 12 LP Seal Press (Min 425, Max 625) _____ psig
- RRP 13 LP Seal Press (Min 425, Max 625) _____ psig
- RRP 14 LP Seal Press (Min 425, Max 625) _____ psig
- RRP 15 LP Seal Press (Min 425, Max 625) _____ psig

IF RRP LP Seal Press outside min/max values,
THEN initiate CR for Engineering to evaluate.

CR # _____

5.0 Reactor Recirc Pump Inlet Temperature

- RRP 11 Inlet Temp 520 °F
- RRP 12 Inlet Temp 515 °F
- RRP 13 Inlet Temp 525 °F
- RRP 14 Inlet Temp 520 °F
- RRP 15 Inlet Temp 515 °F
- Maximum difference in loop temperatures < 15°F ☒ YES ☐ NO

KEY

KEY

ATTACHMENT 4 (Cont)

(T/S) 6.0 Control Room Reactor Water Level Checks

- Low-Low Level Alarms ☐ YES ☒ NO
IF yes, THEN provide reason in Remarks
- Feedwater Level Column selected to ☒ 11 ☐ 12

E-Panel Vessel Level Indicator		70	inches
K-Panel Vessel Level Indicator		70	inches
K-Panel Flange Level Indicator		DOWNSCALE OR -3	feet
Reactor Vessel Level Recorder		70	inches
Wide Range Level Indicator		5.5	feet
	Ch 11	Ch 12	Guide Value*
GEMAC Level Column	(ID59A) 71	(ID59B) 78	Step 8.4
GEMAC Level Computer Points	(D377) 71.344	(D378) 79.051	Step 8.4
Pi Calculated GEMAC level column difference (from Pi: iPPC-D378-D377 Diff 10m)	7.640		Step 8.4
RPS Level Column <Ref 1>	73	75	4 in**
Yarway (RPS) level Column	(J377) 73.125	(J378) 75.763	4 in**
Pi Calculated Yarway level column difference (from Pi: iPPC-J378-J377 Diff 10m)		2.770	4 in**

- * IF reading difference is greater than the guide valve, THEN review previous readings for the instrument(s).
IF a single reading is the cause for the recorded value being greater than the guide value, THEN verify that reading.
IF reading difference is still greater than guide value, THEN consider the indicator OPERABLE AND generate a WD to have the calibration checked.
IF reading difference is grossly greater than guide value, THEN consider the indicator INOPERABLE, enter applicable Tech Spec action AND generate a WD.(See attachment 2 for additional guidance)
- ** IF the difference between Yarway indicators LI-36-09 and LI-36-10 is greater than the guide values listed below, THEN declare the affected instruments from the list below inoperable and initiate the required Technical Specification actions (CR 2007-2822) (See attachment 2 for additional guidance):
- 1.0 RPV level indication deviation is >4 in AND avg. Drywell temp is >130°F
 - 2.0 RPV level indication deviation is ≥6 in AND avg. Drywell temp is >125°F
 - 3.0 RPV level indication deviation is >6 in.

KEY

KEY

ATTACHMENT 4 (Cont)

6.0 (Cont)

a. Calculate Variance Between Ch 12 AND Ch 11 GEMAC Level Meters.

$$\frac{74}{\text{Ch 12}} - \frac{71}{\text{Ch 11}} = \frac{7}{\text{Variance (in.)}}$$

TRH

IV

b. Calculate Variance between Ch 12 and Ch 11 Computer Points.

$$\frac{79.051}{\text{Ch 12}} - \frac{71.344}{\text{Ch 11}} = \frac{7.707}{\text{Variance (in.)}}$$

TRH

c. Record Total Recirc Flow 36 Mlb/Hr

IV
TRH

(TS) 7.0 Condensate

- <Ref 3> • Condensate Storage Tank Level
[Min 10.5 ft] Normal ≥20.5 to <40 ft LI-57-18A _____ feet
- <Ref 2> • Hotwell Level
[MIN 57 inches] Normal >60 to <70 inches. South _____ inches
North _____ inches

DCM) 8.0 Off Gas

- <Ref 4> • System Flow Rate
(≤22CFM) _____ CFM
- <Ref 5> • Sample Flow Rate
>0.15 CFM _____ CFM

(TS) 9.0 Torus

- <Ref 6> • Suppression Chamber Water Level
[≥ 10.5 ft and ≤11.25 ft when Rx Temp > 215°F
and primary containment integrity is required].
Normal >10.65 to <11.1 feet. _____ feet
- <Ref 39> • Torus pressure Normal >1 to <2 psig. _____ psig
- <Ref 7> • Torus Water Temperature
[≥ 50°F ≤85°F during normal power operations].
Normal >50 to <80 °F. _____ °F

KEY

NRC JPM RO COO2
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: DWFDT / DWEDT Leak Rate Determination and Evaluation

Revision: NRC 2010

Task Number: N/A

Approvals:

Rosemarie J. Brown-Te 9/2/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform Simulate

Evaluation Location: Plant X Simulator or Classroom

Expected Completion Time: 10 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Classroom

Simulator Set-up (if required):

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.

References:

1. NUREG 1123, 2.1.7, RO 4.4
2. N1-OP-8; Attachment 6
3. Unit 1 Technical Specifications, Section 3.2.5

Tools and Equipment:

1. Calculator

Task Standard: Determine DWFDT, DWEDT, and total leak rates and recognize Technical Specification limits are being exceeded.

Initial Conditions:

1. The plant is operating at 100% power.
2. The Drywell Leak Detection System is out of service.
3. The following information is available for the Drywell Floor Drain Tank (DWFDT):
 - Leak rate has been constant at 0.92 gpm for the past week.
 - Previous pump down at 21:00 today.
 - Most recent pump down at 21:25 today.
 - Pump down volume = 140 gallons.
4. The following information is available for the Drywell Equipment Drain Tank (DWEDT):
 - Leak rate has been constant at 0.50 gpm for the past week.
 - Previous pump down at 12:00 today.
 - Most recent pump down at 22:00 today.
 - Pump down volume = 430 gallons.
5. Technical Specification (TS) limits are:
 - 5 gpm unidentified leakage.
 - 2 gpm increase in unidentified leakage within any period of 24 hours or less.
 - 25 gpm total leakage averaged over any 24-hour period.
6. Instructor to ask the operator for any questions.

Initiating cue:

“(Operator’s name), determine DWFDT, DWEDT, and total leak rates and determine if they are within the Technical Specification limits or not.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section	N1-OP-8, Attachment 6 obtained as necessary	Sat/Unsat/ NA
3. Determines DWFDT leak rate	(140 gallons/25 minutes) = 5.6 gpm	Pass/Fail
4. Evaluates DWFDT leak rate	Identifies DWFDT (unidentified leakage) rate is ABOVE the limit (5 gpm)	Pass/Fail
	Identifies DWFDT (unidentified leakage) rate is ABOVE the limit for increase in a 24-hour period (2gpm) (5.6 gpm – 0.92 gpm) = 4.68 gpm increase (plus or minus 0.02 gpm)	Pass/Fail

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
5. Determines DWEDT leak rate	10 hours = 600 minutes (430 gallons/600 minutes) = 0.72 gpm (plus or minus 0.02 gpm)	Pass/Fail
6. Evaluates TOTAL leak rate	Determines total leak rate is 6.32 gpm (plus or minus 0.04 gpm) (0.72 gpm + 5.6 gpm = 6.32 gpm)	Pass/Fail
Note: This may be evidenced by lack of a report to the contrary.	Determines total leak rate is within the limit (25 gpm)	Pass/Fail

Terminating Cue: DWFD, DWEDT, and total leak rates are determined and evaluated against Technical Specification criteria.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. The Drywell Leak Detection System is out of service.
3. The following information is available for the Drywell Floor Drain Tank (DWFDT):
 - Leak rate has been constant at 0.92 gpm for the past week.
 - Previous pump down at 21:00 today.
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 - Pump down volume = 140 gallons.
4. The following information is available for the Drywell Equipment Drain Tank (DWEDT):
 - Leak rate has been constant at 0.50 gpm for the past week.
 - Previous pump down at 12:00 today.
 - Most recent pump down at 22:00 today.
 - Pump down volume = 430 gallons.
5. Technical Specification (TS) limits are:
 - 5 gpm unidentified leakage.
 - 2 gpm increase in unidentified leakage within any period of 24 hours or less.
 - 25 gpm total leakage averaged over any 24-hour period.

Initiating cue:

“(Operator’s name), determine DWFDT, DWEDT, and total leak rates and determine if they are within the Technical Specification limits or not.”

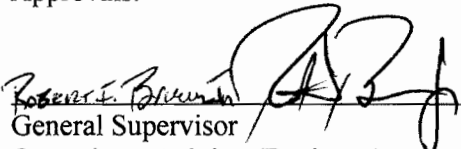
NRC JPM RO EC
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Prepare a tagout for RBCLC pump 13

Revision: NRC 2010

Task Number: N/A

Approvals:

 9/1/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator or Classroom

Expected Completion Time: 40 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Classroom

Simulator Set-up (if required):

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.

References:

1. NUREG 1123, 2.2.13, RO 4.1
2. CNG-OP-1.01-1007
3. P&ID C-18022-C sheet 2
4. EWDs C-19436-C sheets 1 and 3
5. N1-OP-11

Tools and Equipment:

None

Task Standard: Identify the components required be tagged to tagout RBCLC pump 13 for a shaft seal replacement.

Initial Conditions:

1. The plant is operating at 100% power.
2. RBCLC pumps 11 and 12 are operating.
3. RBCLC pump 13 is secured.
4. Maintenance is required to replace RBCLC pump 13 shaft seal.
5. eSOMs is unavailable.
6. Ask the operator for any questions.

Initiating cue:

“(Operator’s name), identify the components required to be tagged to tagout RBCLC pump 13 for the shaft seal replacement. Record the required components and their tagged positions using CNG-OP-1.01-1007 attachment 8.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provides repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtains a copy of the reference procedure and reviews/utilizes the correct section	CNG-OP-1.01-1007 obtained as necessary	Sat/Unsat/ NA
3. Obtains and references appropriate drawings and/or procedures to determine isolations	Obtains and references, as required: <ul style="list-style-type: none">• P&ID C-18022-C sheet 2• EWDs C-19436-C sheets 1 and 3• N1-OP-11	Sat/Unsat
4. Records required isolations.	Identifies the following isolations on CNG-OP-1.01-1007 attachment 8: 70-03, Reactor Building Closed Loop Cooling Pump 13, Control Switch in pull-to-lock 70-03, Reactor Building Closed Loop Cooling Pump 13, Motor Breaker Trip Fuses pulled or installed in OFF	Sat/Unsat Sat/Unsat

Note: Due to unavailability of eSOMs and other electronic databases, exact component IDs, names, and tagging positions may vary.

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
	70-03, Reactor Building Closed Loop Cooling Pump 13, Motor Breaker Close Fuses pulled or installed in OFF	Sat/Unsat
	70-03, Reactor Building Closed Loop Cooling Pump 13, Motor Breaker racked out or disconnected	Pass/Fail
	70-09, BV – 13 RBCLC Pump Discharge, closed	Pass/Fail
	70-141, BV – 13 RBCLC Pump Suction, closed	Pass/Fail
	70-500, Drain – 13 RBCLC Pump, open	Sat/Unsat
	70-501, Vent – 13 RBCLC Pump, open and uncapped	Sat/Unsat

Terminating Cue: Isolations for RBCLC pump 13 have been identified and recorded on CNG-OP-1.01-1007 attachment 8.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. RBCLC pumps 11 and 12 are operating.
3. RBCLC pump 13 is secured.
4. Maintenance is required to replace RBCLC pump 13 shaft seal.
5. eSOMs is unavailable.

Initiating cue:

“(Operator’s name), identify the components required to be tagged to tagout RBCLC pump 13 for the shaft seal replacement. Record the required components and their tagged positions using CNG-OP-1.01-1007 attachment 8.”

November 2010

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.

References:

1. NUREG 1123, 2.4.28, RO 3.2
2. EPIP-EPP-10

Tools and Equipment:

None

Task Standard: Perform required actions for an external security threat per EPIP-EPP-10, Attachment 2.

Initial Conditions:

1. The plant is operating at 100% power.
2. You are the CRO.
3. The NRC calls on the ENS line and informs you of the following:
 - NORAD has reported that two US Airways 737 aircraft have been hijacked from Hancock International Airport in Syracuse, New York.
 - One is headed southeast in the direction of the Indian Point site and one is headed north in the direction of the Fitzpatrick and Nine Mile Point site.
 - The event is classified as a credible, probable airborne threat.
4. Instructor to ask the operator for any questions.

Initiating cue:

“(Operator’s name), perform actions in response to this security threat in accordance with EPIP-EPP-10 attachment 2.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provides repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Obtains a copy of the reference procedure and reviews/utilizes the correct section	EPIP-EPP-10 attachment 2 obtained	Sat/Unsat
Note: Once the candidate locates EPIP-EPP-10 attachment 2, the examiner may supply an extra copy to the candidate for use during the remainder of the JPM		
3. Notifies Shift Manager of security event	Proper communications used (GAP-OPS-O1)	Pass/Fail
4. Checks plant parameters	Observes major plant parameters using control room instrumentation (ex. Reactor power, pressure and level, Containment conditions)	Sat/Unsat
5. Notifies Security Site Supervisor	Proper communications used (GAP-OPS-O1)	Pass/Fail
Note: Security Site Supervisor may be contacted by Gaitronics page or by calling x5222 or x2591		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
6. Initiates any Operating, Special Operating or EOPs required	Proper communications used (GAP-OPS-O1)	Sat/Unsat
<u>Cue:</u> Inform that other operators are executing the required Operating, Special Operating and Emergency Operating Procedures		
7. As directed by Shift Manager, makes announcements	Makes plant announcement in accordance with EPIP-EPP-10 attachment 6:	
<u>Cue:</u> As Shift Manager, provide EPIP-EPP-10 attachment 6, Imminent/Probable Aircraft Attack Announcement (JPM page 6)	a. Places GAltronic in Merge	Pass/Fail
	b. Sounds Evacuation Alarm for 5 seconds	Pass/Fail
	c. Announces:	Pass/Fail
	Attention All Plant Personnel, this (is a drill / is an actual emergency) Aircraft Impact Imminent. Evacuate the protected area immediately. Report directly to the Learning Center or P-Building. I repeat, this (is a drill / is an actual emergency)	
	d. Repeats Alarm and Announcement	Sat/Unsat
	e. Leaves GAltronic in merge	Sat/Unsat
8. When Security Contingency Event no longer exists, makes a termination announcement in accordance with EPIP-EPP-18	Makes plant announcement in accordance with EPIP-EPP-18 attachment 7:	
<u>Cue:</u> As Shift Manager, report that Security Contingency Event no longer exists and provide EPIP-EPP-18 attachment 7, Emergency Termination Announcement (JPM page 7)	a. Sounds Station Alarm for 10 seconds	Sat/Unsat
	b. Announces:	Sat/Unsat
	Attention. Attention all personnel. The security event at Nine Mile Point Unit 1 and 2 has been terminated. I repeat, the security event has been terminated	
	c. Repeats alarm and announcement	Sat/Unsat
	d. Removes GAltronic from merge	Sat/Unsat

Terminating Cue: Emergency Termination Announcement has been made.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. You are the CRO.
3. The NRC calls on the ENS line and informs you of the following:
 - NORAD has reported that two US Airways 737 aircraft have been hijacked from Hancock International Airport in Syracuse, New York.
 - One is headed southeast in the direction of the Indian Point site and one is headed north in the direction of the Fitzpatrick and Nine Mile Point site.
 - The event is classified as a credible, probable airborne threat.

Initiating cue:

“(Operator’s name), perform actions in response to this security threat in accordance with EPIP-EPP-10 attachment 2.”

Note: When making plant announcements, simulate all actions with the GAItronics and provide announcement to the examiner only (i.e. do NOT broadcast over speakers).

ATTACHMENT 6

Date: Today

Time: Now

IMMINENT/PROBABLE AIRCRAFT ATTACK ANNOUNCEMENT

Instructions:

1. Place GAltronic in Merge
2. Sound Evacuation Alarm for 5 Seconds
3. Announce,
Attention All Plant Personnel, this (is a drill ~~is an actual emergency~~)
Aircraft Impact Imminent. Evacuate the protected area immediately. Report directly to the Learning Center or P-Building.
I repeat, this (is a drill ~~is an actual emergency~~)
4. Repeat Alarm and Announcement.
5. Leave GAltronic in merge for the duration of the event.
6. Upon completion return this attachment to the EP Dept.

Attachment 7, Emergency Termination Announcement

Date: <u>Today</u>
Time: <u>Now</u>
Emergency Termination Announcement (As requested by the SM/ED or ED/RM)
Instructions: 1. Place GAltronics in Merge 2. Sound Station Alarm for 10 Seconds 3. Announce, a. <i>"Attention. Attention all personnel.</i> <i>The <u>security</u> <u>event</u> emergency condition at</i> <i>Nine Mile Point</i> <input checked="" type="checkbox"/> <i>Unit 1 has been terminated.</i> <input checked="" type="checkbox"/> <i>Unit 2 has been terminated.</i> b. (Provide further instructions as necessary) _____ _____ _____ _____ c. <i>I repeat, the <u>security</u> <u>event</u> emergency condition</i> <i>has been terminated.</i> 4. Repeat Alarm and Announcement. 5. Remove GAltronics from merge. 6. Upon completion return this attachment to the EP Dept. [N0306]

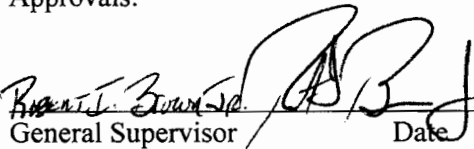
NRC JPM SRO COO1
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Determine Thermal Limits with Inoperable Pressure Regulator

Revision: NRC 2010

Task Number: N/A

Approvals:


General Supervisor _____ Date 9/2/2010
Operations Training (Designee)

N/A – Exam Security
General Supervisor _____
Operations (Designee)

Date

N/A – Exam Security

Configuration Control _____ Date

Performer: _____ (SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator or other location

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Classroom

Simulator Set-up: N/A

Directions to the Instructor/Evaluator:

Applicant is to be provided with N1-RESP-1 for recording data. Applicant must have access to Core Operating Limits Report, Tech Specs, 3D Monicore printout data and N1-OP-31.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CSO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, the use of applicable methods of verification and checking are expected. Therefore, either another individual or I will act as the independent verifier or peer checker.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self checking shall be demonstrated.
3. During Training JPM:
 - Self checking shall be demonstrated.
 - Peer checking shall be demonstrated.

References:

1. NUREG 1123, 2.1.19, SRO 3.8
2. Core Operating Limits Report (COLR)
3. N1-RESP-1 Daily Thermal Limit Surveillance
4. Tech Spec 3.1.7

Tools and Equipment:

1. Calculator

Task Standard: Complete N1-RESP-1, Daily Thermal Limit Surveillance. Determine and evaluate adjusted thermal limits with an inoperable pressure regulator. Identify COLR MCPR limit is exceeded and Tech Spec 3.1.7 actions are required.

Initial Conditions:

1. The plant is operating at power with 5 recirc loops in service.
2. Feedwater Pump 13 is in operation.
3. The plant is at Beginning of Cycle (BOC).
4. Reactor Engineering reports the value of Tau is 1.0.
5. Scoop Tube setting is 102.5%.
6. Current core thermal power and flow are indicated on the given 3D Monicore printout.
7. Core thermal power has not changed since the last 3D Monicore printout.
8. The Mechanical Pressure Regulator is out of service for repairs.
9. The MPR linkage is disconnected at the Front Standard.
10. Instructor to ask operator for any questions.

Initiating cue:

“(Operator’s name), using the 3D Monicore printout provided, complete N1-RESP-1, Daily Thermal Limit Surveillance section 9.2, up to and including step 9.2.14. Report the results in the space below.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the any of the reference documents	Reference materials obtained	Sat/Unsat
3. Record data in N1-RESP-1 by obtaining information from 3D Monicore printout	Records Core Thermal Power in step 9.2.2 as 1591 MWth and 86.0%	Sat/Unsat
	Records Total Core Flow in step 9.2.3 as 48.023 Mlbm/hr and 71.1%	Sat/Unsat
	Records step 9.2.4 as NA, since all RRP's are operating	Sat/Unsat
	Records MAPRAT and location in step 9.2.5 as 0.775 and 41-38-4	Sat/Unsat
	Records step 9.2.6 as NA, since all RRP's are operating	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
4. Determine "Adjusted MCPR limit" value for step 9.2.7, with pressure regulator out of service and thermal power between 45% and 90% from the COLR	Determines adjusted value to be 1.797, from COLR Section 2.1 and Figures 2a, 2e, and 2f, as follows: For $70\% \leq P < 90\%$ MCPR Limit = (Rated OLMCPR)/FRTF Rated OLMCPR = MCPRlim*Kf = 1.52*1.017 = 1.545 MCPR Limit = 1.545/.860 = 1.797	Pass/Fail
Note: Uses COLR Figure 2a, 2e and 2f, to determine calculation information.	Enters 1.797 as "Adjusted MCPR limit" value for step 9.2.7	Sat/Unsat
5. Determine "Actual MCPR Value" from 3D Monicore printout	Determines actual MCPR value to be 1.708, from printout Enters 1.708 as "Actual MCPR Value" for step 9.2.7	Pass/Fail Sat/Unsat
6. Determine COLR thermal limit restriction for MCPR is not met	Evaluates actual MCPR value to be less than adjusted limit and that the MCPR thermal limit is NOT met	Pass/Fail
Role Play: Candidate may make notifications regarding violated thermal limit. Acknowledge report, direct the Candidate to identify the required action and then complete the rest of the surveillance.		
7. Enter Tech Spec 3.1.7.c	Recognize entry into Tech Spec 3.1.7.c Identifies "action shall be initiated within 15 minutes to restore operation to the prescribed limit. If all operating MCPRs are not returned within 2 hours, reactor power reductions shall be initiated at a rate not less than 10% per hour until MCPR is within the prescribed limit".	Pass/Fail Sat/Unsat
8. Record data in N1-RESP-1 by obtaining information from 3D Monicore printout	Records MFLCPR and location in step 9.2.8 as 1.052 and 29-14 Records step 9.2.9 as NA, since all RRP's are operating Records Power to Flow Ratio (PFR) in step 9.2.10 as 0.933	Sat/Unsat Sat/Unsat Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
9. Determine "Adjusted LHGR limit" value for step 9.2.11, with pressure regulator out of service and thermal power between 45% and 90% from the COLR	<p>Determines adjusted value to be 0.860, from COLR Section 3.1 and Figure 3, as follows:</p> <p>For $70\% \leq P < 90\%$ MFLPD Limit = FRT_P</p> <p>$= 1591/1850 = 0.86$</p> <p>Enters 0.86 as "Adjusted LHGR limit" value for step 9.2.11</p> <p>Note: This value may be +/- 0.02 if Candidate interpolates from graph rather than calculates</p>	<p>Pass/Fail</p> <p>Sat/Unsat</p>
10. Determine "Actual MFLPD Value" from 3D Monicore printout	<p>Determines actual MFLPD value to be 0.735, from printout</p> <p>Enters 0.735 as "Current value" for step 9.2.11</p>	<p>Pass/Fail</p> <p>Sat/Unsat</p>
11. Determine COLR thermal limit restriction for MFLPD is met	<p>Evaluates actual MFLPD value to be less than adjusted limit and that the MFLPD thermal limit is met</p> <p>Note: Successful completion of this step may be evidenced by the lack of a report to the contrary.</p>	<p>Pass/Fail</p>
12. Record data in N1-RESP-1 by obtaining information from 3D Monicore printout	<p>Records MFLPD and location in step 9.2.12 as 0.735 and 41-38-4</p> <p>Records FPAPDR in step 9.2.13 as 0.855 from printout</p> <p>Records step 9.2.14 as NA, since FPAPDR is < 1.0</p>	<p>Sat/Unsat</p> <p>Sat/Unsat</p> <p>Sat/Unsat</p>

TERMINATING CUE: N1-RESP-1, Daily Thermal Limit Surveillance completed through step 9.2.14. Adjusted thermal limits for an inoperable pressure regulator are determined. Violation of MCPR limit and required Tech Spec actions are identified.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at power with 5 recirc loops in service.
2. Feedwater Pump 13 is in operation.
3. The plant is at Beginning of Cycle (BOC).
4. Reactor Engineering reports the value of Tau is 1.0.
5. Scoop Tube setting is 102.5%.
6. Current core thermal power and flow are indicated on the given 3D Monicore printout.
7. Core thermal power has not changed since the last 3D Monicore printout.
8. The Mechanical Pressure Regulator is out of service for repairs.
9. The MPR linkage is disconnected at the Front Standard.

Initiating cue:

“(Operator’s name), using the 3D Monicore printout provided, complete N1-RESP-1, Daily Thermal Limit Surveillance section 9.2, up to and including step 9.2.14. Report the results in the space below.”

CORE PARAMETERS			NMP-1 CYCLE 21		SEQUENCE NO 6	
			3DM/P11		8-NOV-2010 11:59 CALCULATED	
POWER	MWT	1591.0	PERIODIC LOG		8-NOV-2010 12:58 PRINTED	
POWER	MWE	541.8	AUTOMATIC		CASE ID FMLD1101108115956	
'LOW	MLB/HR	48.023	CALC RESULTS		RESTART FMLD1101108115940	
'PAPDR		0.855			LPRM SHAPE - FULL CORE	
SUBC	BTU/LB	28.31	Keff	1.0034		
PR	PSIa	1012.63	XE WORTH %	-2.33	LOAD LINE SUMMARY	
CORE	MWD/sT	26190.6	XE/RATED	1.01	CORE POWER	86.0%
CYCLE	MWD/sT	506.3	AVE VF	0.371	CORE FLOW	71.1%
MCPR		1.708	PFR	0.933	LOAD LINE	107.5%

CORRECTION FACTORS: MFLCPR= 1.017 MFLPD= 1.000 MAPRAT= 1.000
OPTION: PRE ARTS 5 LOOPS ON MANUAL FLOW MCPRLIM= 1.520

MOST LIMITING LOCATIONS (NON-SYMMETRIC)

MFLCPR	LOC	MFLPD	LOC	MAPRAT	LOC	PCRAT	LOC
0.905	29-14	0.735	41-38- 4	0.775	41-38- 4	0.862	37-42- 7
0.880	31-12	0.732	37-42- 4	0.772	37-38- 5	0.859	23-20- 5
0.879	33-14	0.726	39-20- 4	0.772	37-42- 4	0.859	29-44- 7
0.878	31-16	0.723	35-44- 4	0.764	39-20- 4	0.859	43-28- 9
0.868	27-18	0.723	37-38- 4	0.760	33-44- 5	0.859	43-24-11
0.868	39-24	0.722	41-28- 9	0.756	33-40- 5	0.857	37-32- 5
0.863	41-22	0.721	27-42- 9	0.755	35-10- 4	0.857	33-30- 5
0.863	39-20	0.720	33-44- 4	0.751	43-34- 5	0.856	41-38- 7
0.862	27-22	0.716	43-28- 9	0.751	27-44- 8	0.856	29-40- 5
0.861	35-26	0.715	33-40- 4	0.750	43-36- 5	0.855	33-44- 7

SEQ.	B-1	C=MFLCPR	D=MFLPD	M=MAPRAT	P=PCRAT	*=MULTIPLE	CORE AVE AXIAL
							NOTCH REL PW LOC
51	L						00 0.154 24
47							02 0.276 23
							04 0.574 22
43			36				06 0.737 21
L				P			08 0.840 20
39					*		10 0.928 19
							12 0.976 18
35		08		06			14 0.982 17
L							16 1.107 16
31							18 1.160 15
							20 1.178 14
27	00 00		00		36		22 1.217 13
L							24 1.253 12
23							26 1.262 11
							28 1.255 10
19		06		08			30 1.285 09
L							32 1.293 08
15							34 1.271 07
				C			36 1.292 06
11			36				38 1.304 05
L							40 1.272 04
07							42 1.171 03
							44 0.928 02
03							46 0.285 01
	L	L	L	L	L	L	
	02 06 10 14 18 22 26 30 34 38 42 46 50						

KEY

Initials

8.2 Administrative

Verify that this copy of this procedure matches the MASTER copy.

9.0 PROCEDURE

9.1 Preliminary Actions

9.1.1 Discuss Plant Impact with the SM and CRO.

**PLANT IMPACT: APRM GAIN ADJUSTMENTS MAY BE
NECESSARY. THIS MAY CAUSE A ROD BLOCK
OR HALF SCRAM.**

9.1.2 Obtain SM permission to perform procedure.

9.1.3 Notify CRO that procedure is to be performed.

9.2 Thermal Limit Verification

Section is N/A, CTP is < 25% ☒

TRH

NOTE

When completing the N1-RESP-1 Surveillance, compare the previous day's limiting parameters with the current day's parameters. Significant changes in thermal limit values, their core location (including AXIAL), OR heat balance parameters (i.e. Feedwater Temperature) should be brought to the attention of the STA and/or a Reactor Engineer.

9.2.1 IF core thermal power has changed by > 10 MWth or control rods have been moved since the last 3D Monicore edit, THEN obtain a new 3D case before proceeding.

N/A

NOTE

The 3D Monicore case (Periodic Log) OR Computer Point H305, CTP 10 MIN SMOOTHED MWTH, may be used for step 9.2.2.

Do NOT use 3D Monicore (Periodic Log) if 3D Monicore is calculating Core Thermal Power based on APRMs.

9.2.2 Record POWER MWT and CORE POWER (%).

$\frac{1591.0}{(\leq 1850 \text{ MWth})}$ MWth $\frac{86.0}{(\leq 100\%)}$ %

TRH

9.2.3 Record FLOW MLB/HR and CORE FLOW (%).

$\frac{48.023}{(\leq 67.5 \text{ Mlb/hr})}$ Mlb/hr $\frac{71.1}{(\leq 100\%)}$ %

TRH

KEY

KEY

Initials

NOTE

During periods of operation with recirculation pumps out of service, a penalty must be applied to MAPRAT. 3D Monicore will derate the LIMLHGR value for each bundle lattice type.

- 9.2.4 If operating with one or more recirc pumps out of service THEN verify MAPRAT CORRECTION FACTOR = 0.980.

Step is N/A ☒ TRH

- 9.2.5 Record Maximum Average Planar Linear Heat Generation Rate Ratio (MAPRAT) and location for the core. [T/S]

0.775 41-38-4 TRH
(≤ 1.00) Location

NOTE

For 3 loop operation, the MCPR limits normally printed on the 3D Monicore edit are 0.02 low. The values of MFLCPR can be adjusted accordingly under these conditions by manually recalculating the ratio or by adjusting OLCPR per NMPC procedure N1-REP-30.

- 9.2.6 IF operating with 3 recirc loops, THEN verify adjusted the MCPR limits in accordance with Core Operating Limits Report.

Step is N/A ☒ TRH

- 9.2.7 IF operating without a backup Pressure Regulator AND Core Thermal Power is between 45% and 90% RTP, THEN obtain adjusted MCPR limits from Core Operating Limits Report. Record actual MCPR value AND verify value is greater than or equal to adjusted MCPR limit.

1.797 1.708 TRH
Adjusted MCPR limit Actual MCPR value

IV

Step is N/A ☐

- 9.2.8 Record Maximum Fraction of Minimum Critical Power Ratio (MFLCPR) and location. [T/S]

1.052 29-41 TRH
(≤ 1.00) Location

KEY

KEY

Initials

NOTE

Attachment 1 corrects total core flow input to PFR determination when recirc loops are out of service and unisolated. If Core Flow $\geq 90\%$, this correction is **not necessary** because PFR will equal Fraction of Rated Power (i.e. PFR = .999 at 99.9% rated power.)

- 9.2.9 IF reactor recirc pumps are out of service and unisolated AND Core Flow $< 90\%$ of rated, THEN perform Attachment 1 for Power to Flow Ratio (PFR) determination with corrected total core flow.

Step is N/A ☒ TRH

- 9.2.10 Record Power to Flow Ratio (PFR) from 3D Monicore or Attachment 1. [T/S]

0.933 TRH
(≤ 1.00)

NOTE

PFR will equal 1.00 if CMWT = 1850. (and recirc flow $> 85\%$)

- 9.2.11 IF operating without a backup Pressure Regulator AND Core Thermal Power is between 45% and 90% RTP, THEN obtain adjusted MFLPD limits from Core Operating Limits Report. Record actual CMFLPD value AND verify that value is less than or equal to adjusted MFLPD limit.

0.86 0.735 TRH
Adjusted LHGR limit Current value

IV

Step is N/A ☐

- 9.2.12 Record Maximum Fraction of Linear Heat Generation Rate (MFLPD) and location (LOC). [T/S]

0.735 41-38-4 TRH
(≤ 1.00) Location

- 9.2.13 Record Full Power Adjusted Power Density Ratio (FPAPDR).

FPAPDR = 0.855 (≤ 1.0) TRH

- 9.2.14 IF FPAPDR > 1.0 THEN the acceptance criteria will be met if APRM's are adjusted per Section 9.3.4.b.

Step is N/A ☒ TRH

KEY

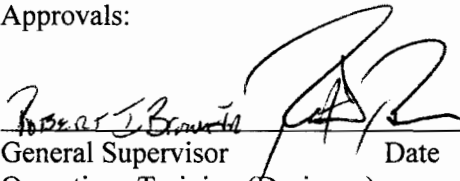

NRC JPM SRO COO2
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Assess Reportability Requirements

Revision: NRC 2010

Task Number: N/A

Approvals:

 _____ General Supervisor Operations Training (Designee)	 _____ General Supervisor Operations (Designee)
Date	Date

N/A – Exam Security
Configuration Control Date

Performer: _____ (SRO)

Trainer/Evaluator: _____

Evaluation Method: ☒ Perform ☐ Simulate

Evaluation Location: ☐ Plant ☒ Simulator or other location

Expected Completion Time: 30 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Classroom

Simulator Set-up: N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self checking shall be demonstrated.
3. During Training JPM:
 - Self checking shall be demonstrated.
 - Peer checking shall be demonstrated.

References:

1. NUREG 1123, 2.1.18, SRO 3.8
2. CNG-NL-1.01-1004
3. 10CFR50.72
4. NUREG 1022
5. EAL Matrix

Tools and Equipment:

None

Task Standard: Determine 10 CFR 50.72 reportability requirements.

Initial Conditions:

1. The plant was operating at 100% power with no equipment out of service.
2. A failure of the Feedwater Level Control System has occurred.
3. The plant was manually scrammed in anticipation of an automatic Reactor scram.
4. High Pressure Coolant Injection (HPCI) automatically initiated on low Reactor water level.
5. Reactor water level was restored above the HPCI low level setpoint, and the HPCI initiation signal was reset.
6. Instructor to ask operator for any questions.

Initiating cue:

“(Operator’s name), list the applicable 10 CFR 50.72 reportability requirements, the reason that they apply and the associated time limitations for reporting under that category. Record your findings on the sheet provided.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat

RECORD START TIME _____

- | | | |
|--|---|-----------|
| 2. Obtain a copy of the any of the reference documents related to regulatory notifications. These are likely to include the following: <ul style="list-style-type: none">• CNG-NL-1.01-1004• 10 CFR 50.72 and 50.73• NUREG 1022• EAL Matrix | Reference materials obtained as necessary | Sat/Unsat |
|--|---|-----------|

- | | | |
|--|--|-----------|
| 3. Locate and identify applicability of 10 CFR 50.72(a)(1) | Determines no emergency classification is required | Sat/Unsat |
|--|--|-----------|

Note: This step may be evaluated by the absence of a one hour emergency report

- | | | |
|---|---|------------------|
| 4. Locate and identify applicability of 10 CFR 50.72(b)(2)(iv)(B) | Identifies reportability per 10 CFR 50.72(b)(2)(iv)(B), for a valid RPS actuation while the Reactor is critical | Pass/Fail |
| | Determines 10 CFR 50.72(b)(2)(iv)(B) requires notification within 4 hours | Pass/Fail |

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
5. Locate and identify applicability of 10 CFR 50.72(b)(3)(iv)(A)	Identifies reportability per 10 CFR 50.72(b)(3)(iv)(A), for a valid actuation of HPCI	Pass/Fail
Note: May alternately refer to 10CFR 50.72(b)(3)(iv)(B)(5) for this reportability requirement.	Determines 10 CFR 50.72(b)(3)(iv)(A) requires notification within 8 hours	Sat/Unsat

Terminating Cue: Reportability requirements have been determined.

RECORD STOP TIME _____

Initial Conditions:

1. The plant was operating at 100% power with no equipment out of service.
2. A failure of the Feedwater Level Control System has occurred.
3. The plant was manually scrammed in anticipation of an automatic Reactor scram.
4. High Pressure Coolant Injection (HPCI) automatically initiated on low Reactor water level.
5. Reactor water level was restored above the HPCI low level setpoint, and the HPCI initiation signal was reset.

Initiating cue:

“(Operator’s name), list the applicable 10 CFR 50.72 reportability requirements, the reason that they apply and the associated time limitations for reporting under that category. Record your findings on the sheet provided.”

Attachment 1

JPM Scorecard KEY

Identify the applicable 10 CFR 50.72 reportability requirements, the reason that they apply and the associated time limitations for reporting under that category

Reportability Requirement and Reason	Time Limit
10 CFR 50.72(b)(2)(iv)(B) Valid Reactor Protection System (RPS) actuation while the Reactor is critical	4 hours
10 CFR 50.72(b)(3)(iv)(A) Valid actuation of High Pressure Coolant Injection System (HPCI) Note: May alternately refer to 10CFR 50.72(b)(3)(iv)(B)(5) for this reportability requirement.	8 hours

Attachment 2

JPM Scorecard for Applicant Use

Identify the applicable 10 CFR 50.72 reportability requirements, the reason that they apply and the associated time limitations for reporting under that category

Reportability Requirement and Reason	Time Limit

Attachment 3

Actual Plant Event Used as Basis for JPM

Power Reactor	Event Number: 61005
Facility: NINE MILE POINT Region: 1 State: NY Unit: [1] [] [] RX Type: [1] GE-2,[2] GE-5 NRC Notified By: Name HQ OPS Officer: Name	Notification Date: Today's Date Notification Time: Today's Time [ET] Event Date: Today's Date Event Time: 11:58 [EDT] Last Update Date: Today's Date
Emergency Class: NON EMERGENCY 10 CFR Section: 50.72(b)(2)(iv)(B) - RPS ACTUATION - CRITICAL 50.72(b)(3)(iv)(A) - VALID SPECIF SYS ACTUATION	Person (Organization): Name (R1DO)

Unit	SCRAM Code	RX CRIT	Initial PWR	Initial RX Mode	Current PWR	Current RX Mode
1	M/R	Y	100	Power Operation	0	Hot Shutdown

Event Text

MANUAL SCRAM AND HIGH PRESSURE COOLANT INJECTION FOLLOWING A LOSS OF FEEDWATER LEVEL CONTROL

"At 1158 on Monday, October 5, 2009, Nine Mile Point Unit One was manually scrammed from approximately 100% rated power due to failure of the Feedwater Level Control System, in anticipation of a reactor scram. Following the manual scram insertion at 11:58, High Pressure Coolant Injection (HPCI) System automatically initiated on low Reactor Vessel (RPV) level. At 11:59, RPV level was restored above the HPCI System low level actuation setpoint, and the HPCI System initiation signal was reset. At Nine Mile Point Unit One, a HPCI System actuation signal on low RPV level is normally received following a reactor scram, due to level shrink.

"Unit 1 has commenced cooldown, in preparation for the forced outage to commence repairs. Reactor water level is being controlled in the normal operating band; reactor temperature is 450°F and reactor pressure is approximately 500 psig.

"10 CFR 50.72(b)(2)(iv)(B) requires reporting within 4 hours when any event or condition that results in actuation of the reactor protection system (RPS) when the reactor is critical.

"10 CFR 50.72(b)(3)(iv)(A) requires reporting within 8 hours when a valid actuation of the High Pressure Coolant Injection System occurs."

All control rods fully inserted. All systems functioned as required following the reactor scram. The reactor is currently stable in Mode 3. HPCI has been secured. Makeup water is being provided by the Reactor Feedwater System and decay heat removal is through the bypass valves to the condenser. There was no impact on Unit 2 and the plant is in a normal post-scram electrical lineup.

The licensee notified the NRC Resident Inspector.

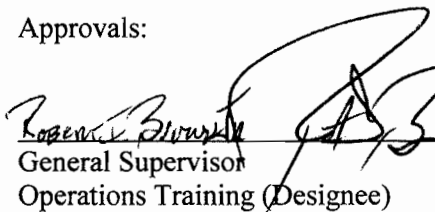
NRC JPM SRO EC
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Review of N1-ST-M1A, Liquid Poison Pump 11 Operability Test

Revision: NRC 2010

Task Number: N/A

Approvals:

 12/2/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform Simulate

Evaluation Location: Plant X Simulator or Classroom

Expected Completion Time: 20 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____ Date: _____

Recommended Start Location: (Completion time based on the start location)

Classroom

Simulator Set-up (if required):

N/A

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.

References:

1. NUREG 1123, 2.2.12, SRO 4.1
2. N1-ST-M1A
3. Technical Specification 3.1.2

Tools and Equipment:

1. Marked up copy of N1-ST-M1A with flow rate calculation of 27.5 gpm.

Task Standard: Complete review of N1-ST-M1A. Identify Liquid Poison pump 11 is inoperable and identify the required actions.

Initial Conditions:

1. The plant is operating at 100% power.
2. N1-ST-M1A, Liquid Poison Pump 11 Operability Test, has been completed and requires Operations and Shift Manager review.
3. Instructor to ask the operator for any questions.

Initiating Cue:

“(Operator’s name), using the completed surveillance provided, complete Section 10.1, Operations Review and Section 10.2, SM Review. Record the results of your review and any required actions in the space below.”

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	Copy of completed surveillance will be provided to the performer	
3. Completes section 10.1, Operations Review, references procedure sections as applicable to verify the required data, and evaluates the data	Determines Liquid Poison pump 11 discharge pressure is SAT	Sat/Unsat
	Determines Liquid Poison pump 11 flow rate is UNSAT	Pass/Fail
	Determines Liquid Poison pump 11 motor current is SAT	Sat/Unsat
	Determines N1-ST-M1A results are UNSAT	Pass/Fail
Note: ACRs are no longer generated as a standalone document. Generation of a CR leads to generation of the required work order, which covers this requirement	Determines ACR to be initiated	Sat/Unsat/ NA

<u>Performance Steps</u>	<u>Standard</u>	<u>Grade</u>
	Informs Operations Manager	Sat/Unsat
	Determines ESL entry is required for Liquid Poison pump 11	Sat/Unsat
	Determines 7 day LCO applies per Tech Spec 3.1.2	Pass/Fail
	Determines entry into Control Room Log is required	Sat/Unsat
<u>Note:</u> May also refer to yellow clearance tag as a caution tag.	Determines yellow clearance tag required for Liquid Poison pump 11	Sat/Unsat
	Determines CR to be written	Sat/Unsat

Terminating Cue: Operations and Shift Manager Review of N1-ST-M1A is complete. Required actions and notifications are identified.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. N1-ST-M1A, Liquid Poison Pump 11 Operability Test, has been completed and requires Operations and Shift Manager review.

Initiating Cue:

“(Operator’s name), using the completed surveillance provided, complete Section 10.1, Operations Review and Section 10.2, SM Review. Record the results of your review and any required actions in the space below.”

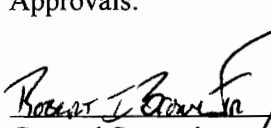
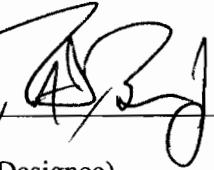
NRC JPM SRO RC
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Generate and approve an Emergency Exposure Authorization

Revision: NRC 2010

Task Number: N/A

Approvals:

  9/7/2010
General Supervisor _____ Date _____
Operations Training (Designee)

N/A – Exam Security
General Supervisor
Operations (Designee)

_____ Date _____

N/A – Exam Security
Configuration Control _____ Date _____

Performer: _____ (SRO)

Trainer/Evaluator: _____

Evaluation Method: Perform

Evaluation Location: Classroom

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator Signature: _____

Date: _____

Recommended Start Location: Classroom

Simulator Set-up: None

Directions to the Instructor/Evaluator: None

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the Radiation Protection, CRO, and Plant Operators. 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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**.
2. During evaluated JPM:
 - Self-verification shall be demonstrated.
3. During training JPM:
 - Self-verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 2.3.4, SRO 3.7
2. EPIP-EPP-15

Tools and Equipment:

1. Calculator

Task Standard: Generate and approve an Emergency Exposure Authorization Form and estimate exposure.

Initial Conditions:

1. A Site Area Emergency is in progress.
2. You have assumed the responsibilities of the Shift Manager/Emergency Director.
3. An Emergency Condenser 11 steam leak into the Reactor Building cannot be isolated without manually shutting Condensate Return Valve 39-05.
4. Entry to the Reactor Building is required to manually close valve 39-05 to stop a release to the environment.
5. Time to complete the task for an experienced Licensed Reactor Operator will be approximately 24 minutes.
6. Time to complete the task for a new Licensed Reactor Operator will be approximately 30 minutes.
7. Radiation levels at the valve are approximately 15 R/hr.
8. Four (4) individuals are available to perform the task:
 - Worker A is a volunteer who is an experienced Licensed Reactor Operator, has previously received a planned special exposure at another facility, and has received a dose of 150 mR this year (TLD Badge No. 11111, SSN 111-11-1111).
 - Worker B is a volunteer who is an experienced Licensed Reactor Operator and is a declared pregnant worker and has received a dose of 15 mR this year (TLD Badge No. 22222, SSN 222-22-2222).
 - Worker C is a volunteer who is an experienced Licensed Reactor Operator and has received a dose of 1800 mR this year (TLD Badge No. 33333, SSN 333-33-3333).
 - Worker D is a volunteer who is a new Licensed Reactor Operator that has received a dose of 500 mR this year (TLD Badge No. 44444, SSN 444-44-4444).
9. Ask the operator for any questions.

Initiating Cue:

“(Operator’s name), choose an individual to close valve 39-05, state the reason why that worker was chosen, estimate the expected radiation exposure and document your authorization for an Emergency Exposure.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section	EPIP-EPP-15 is obtained and Attachments 1 and 1-1 are referenced	Sat/Unsat
3. Determine the expected exposure for the task	For an experienced worker - Calculates that a 24 minute exposure in a 15 R/hr field will cause a dose of 6 R For a new worker - Calculates that a 30 minute exposure in a 15 R/hr field will cause a dose of 7.5 R	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
4. Select the best worker to perform the task	Determines the best worker for the task:	
<p>Note: The following rationale supports worker selection:</p> <ul style="list-style-type: none"> Worker A should NOT be chosen due to previously receiving a planned special exposure Worker B should NOT be chosen due to being a declared pregnant worker Worker C should be chosen because both their dose for the emergency exposure (6 R) will be less than that for Worker D; additionally, the dose to the public will be minimized by the shorter task completion time of this experienced worker Worker D should NOT be chosen because their dose for the emergency exposure (7.5 R) will be greater than that for Worker C 	Does NOT select Worker A	Pass/Fail
	Does NOT select Worker B	Pass/Fail
	Selects Worker C	Pass/Fail
	Does NOT select Worker D	Pass/Fail
5. State reason for choosing the selected worker	States that Worker C was chosen to minimize dose	Sat/Unsat
	States that Worker A was NOT chosen due to a previous planned special exposure	Sat/Unsat
	States that Worker B was NOT chosen due to being a declared pregnant worker	Sat/Unsat
	States that Worker D was NOT chosen due to higher dose	Sat/Unsat
6. Estimate expected exposure	Determines Worker C will receive an estimated 6 R while completing the task (24 minutes x 15 R/hr / 60 min/hr)	Sat/Unsat
<p>Role Play: The Candidate may choose to brief the worker on radiological conditions, potential for steam leakage in the area, planned task, applicable ALARA measures, and contingency measures. Role play as Worker C and acknowledge the briefing.</p>		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
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Role Play: The Candidate may ask for an RWP to be generated. **Role play as RP and state that an RWP has been generated.**

- | | | |
|--|--|------------------|
| 7. Generate an Emergency Exposure Authorization form | <ul style="list-style-type: none"> • Candidate obtains a copy of EPIP-EPP-15 Attachment 1-1 • Candidate completes Section A (see attached key) | Pass/Fail |
|--|--|------------------|

TERMINATING CUE: Emergency Exposure Authorization Form has been completed.

RECORD STOP TIME_____

Initial Conditions:

1. A Site Area Emergency is in progress.
2. You have assumed the responsibilities of the Shift Manager/Emergency Director.
3. An Emergency Condenser 11 steam leak into the Reactor Building cannot be isolated without manually shutting Condensate Return Valve 39-05.
4. Entry to the Reactor Building is required to manually close valve 39-05 to stop a release to the environment.
5. Time to complete the task for an experienced Licensed Reactor Operator will be approximately 24 minutes.
6. Time to complete the task for a new Licensed Reactor Operator will be approximately 30 minutes.
7. Radiation levels at the valve are approximately 15 R/hr.
8. Four (4) individuals are available to perform the task:
 - Worker A is a volunteer who is an experienced Licensed Reactor Operator, has previously received a planned special exposure at another facility, and has received a dose of 150 mR this year (TLD Badge No. 11111, SSN 111-11-1111).
 - Worker B is a volunteer who is an experienced Licensed Reactor Operator, is a declared pregnant worker and has received a dose of 15 mR this year (TLD Badge No. 22222, SSN 222-22-2222).
 - Worker C is a volunteer who is an experienced Licensed Reactor Operator and has received a dose of 1800 mR this year (TLD Badge No. 33333, SSN 333-33-3333).
 - Worker D is a volunteer who is a new Licensed Reactor Operator that has received a dose of 500 mR this year (TLD Badge No. 44444, SSN 444-44-4444).

Initiating Cue:

“(Operator’s name), choose an individual to close valve 39-05, state the reason why that worker was chosen, estimate the expected radiation exposure and document your authorization for an Emergency Exposure.”

KEY

EMERGENCY EXPOSURE AUTHORIZATION FORM	ATTACHMENT 1-1 Sheet 1 of 1
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SECTION A - Emergency Pre-Exposure Information

Name Worker C (or similar)	Employer/NMP Dept . CENG/Operations (or similar)	SSN 333-33-3333
TLD Badge No. 33333	Authorized Exposure Limit (some value \geq 6 R)	Date of Authorization (Date)
		AUTHORIZATION FOR EMERGENCY EXPOSURE SM/ED or ED/RM Signature/Date
RAM Signature/Date		(Signature) (Date)

SECTION B (for anticipated exposure > 25 rem TEDE)

I have volunteered to perform the task(s) during which I will receive emergency exposure and I have been briefed on the potential biological consequences of the proposed emergency exposure.

Individual to Receive Exposure (Print/Initial):	Date
---	------

SECTION C - (Attach Exposure Evaluation Records)

TLD/Direct-Reading Dosimeter Results:	
Bioassay or Whole Body Counting Results:	
Medical Evaluation/Action:	
Dose Equivalent Assigned to Individual:	
RAM Signature:	Date

SECTION D

Disposition (Allow additional exposure, restrict access, etc.):	
RAM Signature:	Date

KEY

Recommended Start Location: Classroom/Simulator

Simulator Set-up: None

Directions to the Instructor/Evaluator: None

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the Unit 2 SM, Security Supervisor, Communication Aid, and other personnel as necessary. 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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the additional / concurrent verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**.
2. During Evaluated JPM:
 - Self-verification shall be demonstrated.
3. During Training JPM:
 - Self-verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 2.4.41, SRO 4.6
2. EPIP-EPP-01
3. EPIP-EPP-18
4. EPIP-EPP-20
5. EPMP-EPP-0101

Tools and Equipment:

- 1.0 EPIP-EPP-01, ATTACHMENT 1, UNIT 1 EAL FLOWCHART
- 2.0 SM/ED Checklist Package

Task Standard:

Classify and declare the emergency event within 15 minutes of the time that indications are available to the Candidate that an EAL has been exceeded. Make notifications to New York State and Oswego County within 15 minutes of the time the event is declared.

Initial Conditions:

1. You are the Unit 1 Shift Manager.
2. Unit 1 was operating at 100% power.
3. Unit 2 is operating at 100% power.
4. The following conditions have occurred:
 - A leak in the Drywell results in rising Drywell pressure.
 - A manual Reactor scram is inserted and all control rods fully insert.
 - Containment Spray is initiated due to high Torus pressure.
 - EOP-8, RPV Blowdown, is entered due to low RPV water level.
 - RPV water level momentarily lowers below Top of Active Fuel (TAF), but is quickly recovered to the normal band using Core Spray.
 - Reactor Building D/P is -0.25" H₂O.
 - Reactor Building ventilation radiation monitors read at normal background levels.
 - Stack radiation monitors read at normal background levels.
5. The time of shutdown is 10 minutes ago.
6. Instructor to ask the operator for any questions.

Initiating Cue:

“(Operator’s name), based on the above conditions, determine the event classification per EPIP-EPP-01 and complete steps 1 through 9.a of EPIP-EPP-18, Attachment 1, SM/ED Checklist. This is a time critical task.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

2. Obtain a copy of EPIP-EPP-01 attachments 1 and 2, and Shift Manager emergency paperwork and review/utilize the correct section	EPIP-EPP-01 attachments 1 and 2, and Shift Manager emergency paperwork is obtained	Sat/Unsat
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<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
3. Enters EPIP-EPP-18, Attachment 1, SM/ED Checklist and completes Steps 1 through 9.a	Completes steps 1 thru 9.a of EPIP-EPP-18, as described in subsequent JPM steps	Sat/Unsat
4. Classifies and declares the emergency	<p>Declares an Alert within fifteen minutes of the JPM initial condition sheet being accepted in accordance with EAL 3.1.1</p> <p>EXAMINER NOTE: Time difference below must be 15 minutes or less:</p> <p>JPM start time: _____</p> <p>Time of Declaration: _____</p>	Pass/Fail
5. Completes EPIP-EPP-18 attachment 1, figure 1 flowchart to determine evacuation and accountability requirements	Completes Attachment as shown in KEY	Sat/Unsat
<p>Note: Evacuation determination is subjective and may or may not be performed. This will determine which path is taken on EPIP-EPP-18 Attachment 1 and which steps are completed on EPIP-EPP-18 Attachment 2.</p>		
6. Calls the Communications Aides to the Control Rooms	Proper communications used (GAP-OPS-O1)	Sat/Unsat
Role Play: Acknowledge communication		
7. Fills out the ERO Notification System (ERONS) form	Completes Attachment as shown in KEY	Sat/Unsat
8. Calls Unit 2 SM to inform that ERONS form is coming and to get Unit 2 plant status	Proper communications used (GAP-OPS-O1)	Sat/Unsat
<p>Role Play: If asked about the status of Unit 2, report that Unit 2 is still operating at 100% power with no issues</p>		
9. Completes EPIP-EPP-18 attachment 2, Emergency Announcement	Completes Attachment as shown in KEY	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
10. Completes EPIP-EPP-20 Part 1 Notification Fact Sheet	<p>Completes Attachment as shown in KEY</p> <p>Part 1 Notification Fact Sheet Steps 3 thru 7 are Critical Steps</p> <p>EXAMINER NOTE: Time difference must be 15 minutes or less:</p> <p>Time of Declaration (from JPM step 4): _____</p> <p>Time EPIP-EPP-20 Part 1 Notification Fact Sheet is complete: _____</p>	Pass/Fail

TERMINATING CUE: Part 1 Notification Fact Sheet completed.

RECORD STOP TIME _____

Initial Conditions:

1. You are the Unit 1 Shift Manager.
2. Unit 1 was operating at 100% power.
3. Unit 2 is operating at 100% power.
4. The following conditions have occurred:
 - A leak in the Drywell results in rising Drywell pressure.
 - A manual Reactor scram is inserted and all control rods fully insert.
 - Containment Spray is initiated due to high Torus pressure.
 - EOP-8, RPV Blowdown, is entered due to low RPV water level.
 - RPV water level momentarily lowers below Top of Active Fuel (TAF), but is quickly recovered to the normal band using Core Spray.
 - Reactor Building D/P is -0.25" H₂O.
 - Reactor Building ventilation radiation monitors read at normal background levels.
 - Stack radiation monitors read at normal background levels.
5. The time of shutdown is 10 minutes ago.

Initiating Cue:

“(Operator’s name), based on the above conditions, determine the event classification per EPIP-EPP-01 and complete steps 1 through 9.a of EPIP-EPP-18, Attachment 1, SM/ED Checklist. This is a time critical task.”

Meteorological Data

Wind Speed (30 ft)	5 mph
Wind Speed (200 ft)	10 mph
Wind Direction (30 ft)	60°
Wind Direction (200 ft)	60°
Stability Class	D

KEY

ACTIVATION AND DIRECTION OF THE EMERGENCY PLANS

EPIP-EPP-18

Revision 01900

Page 8 of 21

Page 1 of 5

Attachment 1, SM/ED Checklist

Name: (Name)	Date: (Date)	Unit <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2
--------------	--------------	---

- NOTES:**
1. All steps should be performed.
 2. Use N/A or N/R if appropriate.
 3. A log documenting activities should be maintained.

		UE	Alert	SAE	GE	N/A
1	This is a drill <u>this is an actual emergency</u> (circle one)		X			
2	Classify the emergency per EPIP-EPP-01 or EPIP-EPP-02 (within 15 minutes of indications available in control room)		X			
3	Using Attachment 1, Figure 1 flowchart determine the appropriate evacuation and accountability		X			
4	Announce to Control Room staff you are now assuming SM/ED position and duties, and you are now declaring (state emergency classification level), and provide reason for classification/declaration/upgrade		X			
NOTE: IF the announcement for a ground attack has been made as required by EPIP-EPP-10, THEN: DO NOT make further announcements until safety is assured. Coordinate with security.						
5	Call the Communications Aides to the Control Rooms		X			
NOTE: Assure the safety of the ERO before making ERO Notifications. Consider directing ERO response to Alternate Emergency Duty Location.						
6	Fill out the ERO Notification System (ERONS) form. (N/A if ERO previously contacted to report)		X			
7	Call opposite Unit's Control Room to inform SM that the ERONS form will be arriving and to obtain status of opposite unit for the Part 1 Notification Fact Sheet		X			
8	Direct the appropriate announcement to be made using Attachment 2 of the procedure.		X			
9	Complete the following in accordance with EPIP-EPP-20: a. Part 1 Notification Fact Sheet (provide to Comm Aide). Include information from other unit, as applicable b. Provide time of shutdown to ED/RM		X			
NOTE: Time of shutdown is used by NMP and Offsite agencies Dose Assessment programs for source term decay and as an indicator of potential escalation.						
	c. Fax completed ERO Notification form to unaffected unit Control Room, verify received (U1-2996, U2-1207)					
	d. NRC Notification Worksheets (provide to Comm Aide)					
NOTE: For events affecting both units, direct other Unit SM to complete NRC notification worksheet <u>and</u> notify the NRC						
10	Verify appropriate Site Emergency Procedures implementation per Attachment 8					

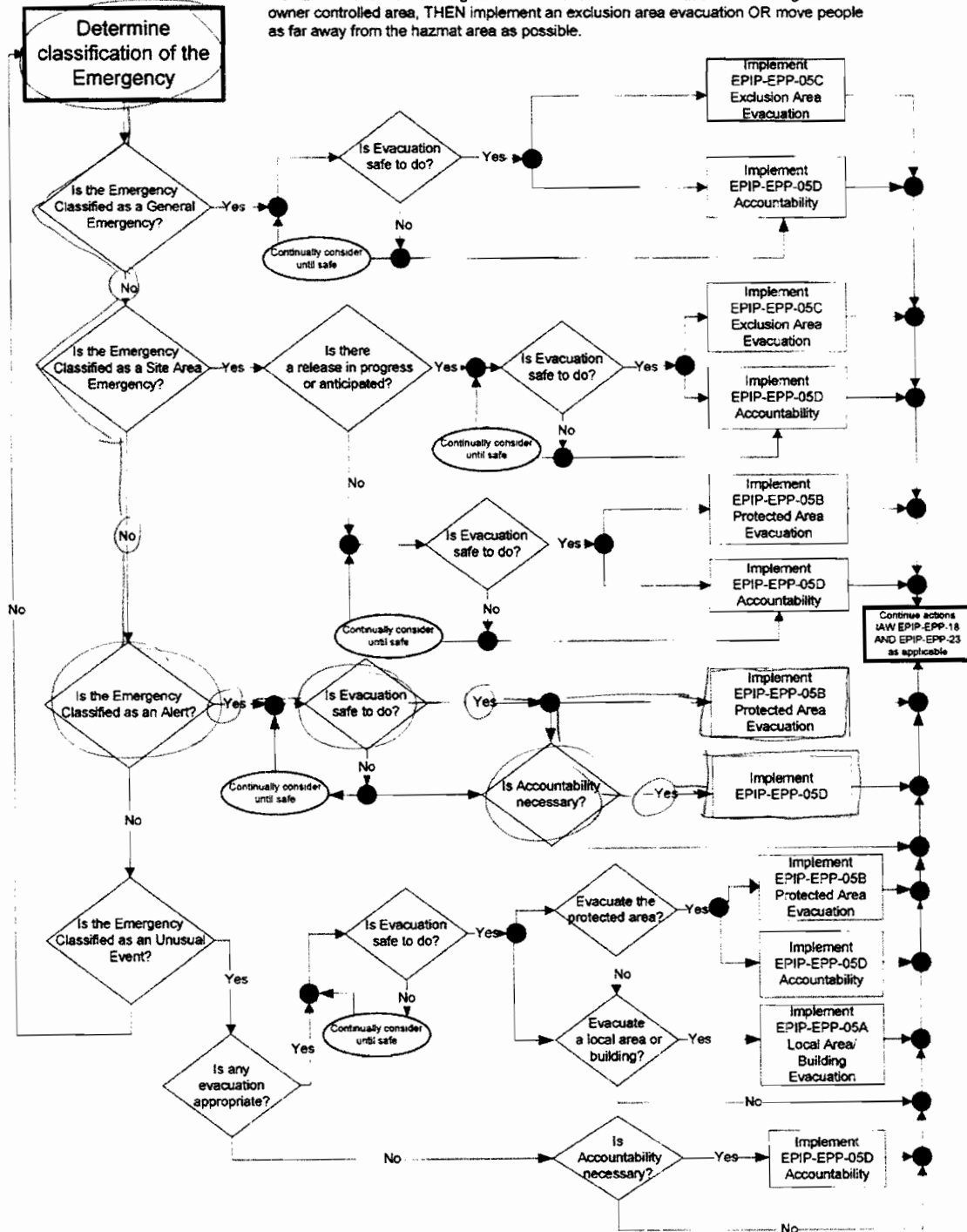
KEY

KEY

FIGURE 1

EVACUATION/ACCOUNTABILITY FLOWCHART

NOTE: IF evacuation is being directed due to an offsite hazmat event affecting the owner controlled area, THEN implement an exclusion area evacuation OR move people as far away from the hazmat area as possible.



KEY

Attachment 4 (Continued)

E. ERO Notification System (ERONS)**Notification of ERO personnel should occur only when:**

1. Directed by SM/ED OR ED/RM for event notification, OR
2. This is the first notification required for any Emergency Classification, OR
3. The Emergency Classification is upgraded from an Unusual Event Classification, OR
4. Following the EOF Communications Coordinator Checklist.

1.0 Activate ERONS (by computer)

- A. Click the Internet Explorer icon
- B. Type the following into the address bar: <http://www.envoyprofiles.com/ce/>
NOTE: Alternately, you may access from the EP Website – title: ERONS
- C. When login page appears, enter
 1. Username: NMP
 2. Password: Kaminski4\$
 3. Click "Login" button
- D. On the Welcome screen, click on "Activation"
- E. On the Activation screen, click "Activate System"
- F. On the Create notification screen, click "ERO Notification System" radio button and then click "next".
- G. On the Notification details screen, enter the details **circled by the SM/ED below:**

Event: *Either* → **Drill** **Actual**

Unit: **Calvert Cliffs** **Ginna Station** **Nine Mile Point**

Reason for Notification: **Unusual Event** **Alert**
Site Area Emergency **General Emergency**
Event Termination **Notification System Test**

Action: **None**
Staff Alternate Emergency Facilities
Staff Normal Emergency Facilities as a Precaution
Staff Normal Emergency Facilities for an Emergency
Staff the EOF and JIC only
Staff the OCC only
Staff the TSC and OSC only

- H. Verify the message text matches the items circled above.
- I. In Name area: enter your name
- J. In Caller ID area: enter 3153494443
- K. In Email area: enter NineMileERO@constellation.com
- L. Leave Numeric Pager area blank
- M. Click "next" box.
- N. On the Notification Lists screen, select "NMP ERO Roster"
- O. Verify all details on next screen. If correct, click the "send" button. If not correct, click the "back" button, correct the appropriate information and then send.

Message Approval: (SM/ED OR ED/RM) (Signature) Time: (Time)

IF UNABLE TO ACTIVATE VIA THIS METHOD – GO TO NEXT PAGE FOR ALTERNATE ACTIVATION

KEY

ACTIVATION AND DIRECTION OF THE EMERGENCY PLANS

EPIP-EPP-18

Revision 01900

Page 13 of 21

Page 1 of 2

Attachment 2, Emergency Announcement

DATE: <u> (Date) </u> TIME: <u> (Time) </u>
INSTRUCTIONS: (check boxes to select appropriate announcement, consider crossing out rows not used)
1. PLACE GAITRONICS IN MERGE.
2. SOUND THE APPROPRIATE ALARM: <input type="checkbox"/> Station alarm for 10 seconds. <input checked="" type="checkbox"/> Evacuation Alarm for 10 seconds. (When <u>any</u> evacuation is being ordered)
3. ANNOUNCE ONLY THOSE ITEMS CHECKED: (Provide short description of the reason for classification, not the whole EAL) a. "Attention. Attention all personnel. This is <input checked="" type="checkbox"/> a drill <input checked="" type="checkbox"/> an actual emergency. <i>Either</i> Nine Mile Point <input checked="" type="checkbox"/> Unit 1 is experiencing: <input type="checkbox"/> Unit 2 is experiencing: <input type="checkbox"/> "An Unusual Event due to _____" <input checked="" type="checkbox"/> "An Alert emergency condition due to <u>(description)</u> " <input type="checkbox"/> "A Site Area Emergency due to _____" <input type="checkbox"/> "A General Emergency due to _____" <input checked="" type="checkbox"/> b. <u>If this is the first announcement for an Alert or higher, then always add</u> <i>"All Emergency Response Organization personnel are to report to their Emergency Response Facilities and card in."</i>
4. FOR A CREDIBLE INSIDER SECURITY THREAT, ADD (Only do step 4 once) <input type="checkbox"/> Secure all non-essential activities in vital areas, the two person line of sight vital area access rules are now in effect.
5. FOR A LOCAL AREA EVACUATION, ADD <input type="checkbox"/> "An evacuation of: _____ is being ordered due to: _____ All personnel are to leave the (Unit 1/2)_(area) staying clear of _____ and report to _____
6. FOR ACCOUNTABILITY WITHOUT EVACUATION, ADD (only use with 4 above <u>or</u> if evacuation unsafe and only do step 6 once.) <input type="checkbox"/> "Accountability is being performed in the Protected Area. All personnel shall report to an onsite assembly area, card in and remain in the area until further notice."
7. FOR A PROTECTED AREA EVACUATION, ADD (Only do step 7 once) <input checked="" type="checkbox"/> "All personnel not assigned emergency response duties shall evacuate the Protected Area and report to the P-Building. and remain at this location until further notice".
—CONTINUED NEXT PAGE—

KEY

Attachment 2, Emergency Announcement (Continued)

8. FOR AN EXCLUSION AREA EVACUATION, ADD (Only do step 8 once)

- ☐ a. "All personnel not assigned emergency response duties shall evacuate the Nine Mile Point Exclusion Area immediately and report to:" (select appropriate)
- ☐ 1. "Offsite Assembly Area located on Howard Road in Volney, Maps may be obtained from security as you exit."
- OR**
- ☐ 2. _____ (provide other location as appropriate)
- OR**
- ☐ 3. "Home"
- ☐ b. **IF NECESSARY ADD:**
(If radioactive release is in progress, then obtain plume direction from Chem Tech and check appropriate box below)
- ☐ Personnel are to leave the area heading west towards Oswego then turn south.
- ☐ Personnel are to leave the area heading south as soon as possible.
- ☐ _____
(Detail other directions as appropriate)

9. IF APPROPRIATE, ADD: (Only do step 9 once)

- ☒ a. "Personnel in protective clothing should" (select appropriate):
- ☒ 1. "Leave the area removing PCs as indicated at the step off pad."
- ☒ 2. "Leave the area immediately and obtain Radiation Protection assistance at the access control point."

10. IF APPROPRIATE, ADD:

- ☒ a. "There is no eating, drinking, or smoking within the protected area until further notice."
- ☐ b. (Only done if "10a" has been done) Eating, drinking, smoking are now permitted within the Protected Area.

11. ALWAYS ADD:

- ☒ "I repeat this is a drill."
- ☒ "I repeat this is an actual emergency."

12. Repeat the alarm and entire announcement so that all specified steps of the specific announcement are made 2 (two) times.

13. Leave GAltronics in merge mode for the duration of the event.

14. Upon completion return this attachment to the EP Dept.

[N0306]

KEY

EMERGENCY NOTIFICATIONS

EPIP-EPP-20

Revision 02400

Page 13 of 34

Attachment 1A: Nine Mile Point Nuclear Station Notification Fact Sheet - Part 1

(Do not say items in italics)

Sheet 1 of 5

Pick up the phone press A *, wait about 10 seconds, then say: "This is to report an incident at Nine Mile Point, standby for roll call:"

<input type="checkbox"/> State Emergency Communications Center (SECC)		<input type="checkbox"/> Oswego County Warning Point		<input type="checkbox"/> JA Fitzpatrick Power Plant (not req'd in 15 min)		<input type="checkbox"/> Unaffected NMP Unit (not req'd in 15 min)		Notification #	
Step Changed	Step								
	1.	This message is being transmitted on: (date) _____ at (time - 24 hr) _____ via: A. RECS B. Other							
	2.	This is: <u>(A)</u> An actual emergency ^{Either} <u>(B)</u> An Exercise							
	3.	The Emergency Classification is: A. Unusual Event C. Site Area Emergency E. Emergency Terminated <u>(B)</u> Alert D. General Emergency F. Other: _____							
	4.	This Emergency Classification was declared on: (date) <u>(Date)</u> at (time - 24 hr) <u>(Time of declaration)</u>							
	5.	Release of radioactive Materials due to the classified event: <u>(A)</u> No release B. Release below federal limits (ODCM), <input type="checkbox"/> To atmosphere <input type="checkbox"/> To Water C. Release above federal limits (ODCM), <input type="checkbox"/> To atmosphere <input type="checkbox"/> To Water D. Unmonitored release requiring evaluation.							
	6.	The following Protective Actions are recommended to be implemented as soon as practical: <u>(A)</u> No need for protective actions outside the site boundary B. Evacuate and implement the KI Plan for the following ERPAs and all remaining ERPAs monitor the Emergency Alert System. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 C. Shelter-in-place and implement the KI Plan for the following ERPAs AND all remaining ERPAs monitor the Emergency Alert System 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29							
	7.	<input checked="" type="checkbox"/>	U1	EAL # 3.1.1	Brief event description and other significant information: (if necessary. Do not repeat EAL description) <u>(Optional brief description)</u>				
			U2						
			Site						
	8.	Reactor Status: Unit 1: A. Operating <u>(B)</u> Shutdown (date) <u>(Date)</u> at (time - 24 hr clock) <u>(Time)</u> Unit 2: <u>(A)</u> Operating B. Shutdown (date) _____ at (time - 24 hr clock) _____							
	9.	A. Elevated wind speed <u>10</u> miles/hr at 200 ft				B. Ground wind speed <u>5</u> miles/hr at 30 ft.			
	10.	A. Elevated wind direction (from) <u>60</u> degrees at 200 ft.				B. Ground wind direction (from) <u>60</u> degrees at 30 ft.			
	11.	Stability Class: A B C <u>(D)</u> E F G							
	12.	Reported by: (Communicator name) _____ at Tel. No. (315) _____							
ASK: "Does Oswego County or New York State need further clarification on any information?" (provide as appropriate) THEN: "This is the end of the message, standby for verification roll call."									
Check those involved in verification roll call		<input type="checkbox"/> State Emergency Communications Center		<input type="checkbox"/> Oswego County Warning Point		<input type="checkbox"/> JA Fitzpatrick Power Plant		<input type="checkbox"/> Unaffected NMP Unit	
THEN STATE: "Nine Mile Point out at time: _____" (time - 24 hr clock)									
approved by: (SM/ED or ED/RM): Print name: <u>(Name)</u> Signature: <u>(Signature)</u>									

KEY

NRC JPM S-1
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

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

Revision: NRC 2010

Task Number: N/A

Approvals:

Rose J. Brown 9/7/2011
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 15 minutes Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC 161
2. Verify Service Water pump 11 is red flagged and Service Water pump 12 is green flagged
3. Verify malfunction CW02B is on trigger 1 with a 15 second time delay
4. Verify trigger 1 command is set to zdcwpstr(4)==1 (Service Water pump 12 control switch in start)
5. Verify malfunction CW02A is active

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 295018, AA1.01, RO 3.3, SRO 3.4
2. N1-SOP-18.1

Tools and Equipment:

None

Task Standard: N1-SOP-18.1 actions are complete through the override step for a sequential loss of Service Water pumps.

Initial Conditions:

1. The plant is operating at approximately 100% power.
2. Service Water pump 11 has tripped on overcurrent.
3. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), enter and execute N1-SOP-18.1 for Service Water Failure.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

1. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-SOP-18.1 obtained	Sat/Unsat
2. Start standby Service Water pump by placing control switch on Panel H to START	Rotates Service Water pump 12 control switch CW to start, observes red light on, green light off, proper pump amps	Pass/Fail
Note: Service Water pump 12 will trip after a 15 second time delay, requiring an alternate path to execute the override for loss of both Service Water pumps		
3. Identifies trip of Service Water pump 12	Observes Service Water pump 12 green light on, red light off, pump amps drop to zero, annunciator H1-2-2 alarms	Sat/Unsat
4. 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:	Enters override of N1-SOP-18.1	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
5. Start Emergency Service Water pumps	Rotates ESW pump 11 control switch CW to start, observes red light on, green light off, proper pump amps	Pass/Fail
	Rotates ESW pump 12 control switch CW to start, observes red light on, green light off, proper pump amps	Pass/Fail
6. SCRAM the Reactor AND concurrently execute N1-SOP-1	Rotates the Reactor Mode Switch CW to Shutdown	Pass/Fail
Cue: Another operator will perform SOP-1 actions. Continue in SOP-18.1.		
7. Initiate Emergency Condensers	Rotates 39-05 control switch CW to open	Pass/Fail
Cue: Another operator will maintain Reactor pressure per EOP-2.	Rotates 39-06 control switch CW to open	Pass/Fail
8. Close MSIVs	Rotates 01-01 control switch CCW to close	Pass/Fail
	Rotates 01-02 control switch CCW to close	Pass/Fail
	Rotates 01-03 control switch CCW to close	Pass/Fail
	Rotates 01-04 control switch CCW to close	Pass/Fail
9. Trip all Rx Recirculation Pumps	Rotates RRP 11 control switch CCW to trip	Pass/Fail
	Rotates RRP 12 control switch CCW to trip	Pass/Fail
Cue: Another operator will monitor RBCLC and TBCLC temperatures.	Rotates RRP 13 control switch CCW to trip	Pass/Fail
	Rotates RRP 14 control switch CCW to trip	Pass/Fail
	Rotates RRP 15 control switch CCW to trip	Pass/Fail
Terminating Cue: N1-SOP-18.1 actions are completed through the override step for a sequential loss of Service Water pumps.		

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at approximately 100% power.
2. Service Water pump 11 has tripped on overcurrent.

Initiating Cue:

“(Operator’s name), enter and execute N1-SOP-18.1 for Service Water Failure.”

NRC JPM S-2
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Bypass LPRM Input To APRM

Revision: NRC 2010

Task Number: N/A

Approvals:

Robert E. Brown Jr. 9/2/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-162 (shared with JPM S-8)
2. Verify LPRM 20-25A failed downscale (malfunction NM29R20C25A active)
3. Verify LPRM 20-25A Power Supply, NPWRS-RJ01C-L, on backpanel is selected to Position 1

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - Peer verification shall be demonstrated.

References:

1. NUREG 1123, 215005, A4.04, RO 3.2, SRO 3.2
2. N1-OP-38C

Tools and Equipment:

None

Task Standard: LPRM 20-25A input to APRM 13 is bypassed per N1-OP-38C and APRM 13 is unbypassed.

Initial Conditions:

1. LPRM 20-25A failed downscale.
2. There are no other LPRMs inoperable or bypassed.
3. No APRMs are bypassed.
4. A review of Control Room logs has been performed by the CRS to verify APRMs are operable.
5. The CRS has reviewed Technical Specifications and verified that the associated APRM can be bypassed.
6. The CRS has completed N1-OP-38C, Attachment 5, and determined that the LPRM 20-25A input to its associated APRM can be bypassed.
7. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), bypass LPRM 20-25A input to its associated APRM per N1-OP-38C, and then return the APRM to operable. You are NOT required to bypass the LPRM alarm function.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-38C obtained, precautions & limitations reviewed & section H.3.0 referenced	Sat/Unsat
3. Confirm LPRM can be bypassed per Technical Specifications, using Attachment 5	Determines step complete per initial conditions	Sat/Unsat
4. Bypass selected APRM which includes the associated LPRM that is to be bypassed	Determines LPRM 20-25A is assigned to APRM 13 (back panel or Att. 5 of OP-38C)	Sat/Unsat
Note: Candidate may use OP-38C section H.1.0 to bypass the APRM.	Positions APRM 11-12-13-14 BYPASS joystick to CH 13	Pass/Fail
	Checks computer, then checks back panel light to verify APRM bypassed	Sat/Unsat
5. Position LPRM to be bypassed to readout on APRM module drawer	At APRM 13 drawer, positions INPUT selector switch, S9, to position 4	Sat/Unsat
Note: APRM 12 and APRM 13 share the same drawer.	Observes meter indication	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
6. Position LPRM to readout on its power supply module	Positions Power Supply selector switch for NPWRS-RJ01C-L to Position 4 Observes meter indication	Sat/Unsat
7. Slide APRM drawer open to expose red LPRM bypass knurled knobs	APRM drawer pulled out to expose red knurled knobs	Sat/Unsat
Note: Switches used to bypass the specific LPRM signal to its APRM averaging circuit are located in the related APRM module. Withdrawing this module exposes knurled knobs, which are numbered to correspond with the LPRMs on the faceplate.		
8. Rotate appropriate LPRM red knob counter-clockwise to bypass LPRM	Rotates LPRM red knurled knob S4 counter-clockwise 1/4 turn	Pass/Fail
Note: The bypass switch is a two-position switch and will only rotate 1/4 turn		
9. Confirm LPRM reading on APRM drawer reads zero	Observes PERCENT POWER meter at 0% with APRM 13 INPUT selector switch, S9, in position 4	Sat/Unsat
10. Confirm LPRM reading on power supply module remains the same	Observes LPRM reading on power supply module did not change	Sat/Unsat
11. Place APRM drawer counts switch to COUNT	Positions APRM 13 drawer counts switch to COUNT	Sat/Unsat
12. Confirm LPRM count rate on APRM module drawer reflects the number of non-bypassed LPRMs assigned to that APRM channel	Determines that there are 7 operable LPRM inputs to APRM 13	Sat/Unsat
	Determines that LPRM count rate on APRM 13 should indicate 70%	Sat/Unsat
	Observes PERCENT POWER meter for APRM 13 indicates 70%	Sat/Unsat
13. Verify APRM drawer switch is in Average	Positions APRM 13 drawer switch to AVERAGE	Sat/Unsat
14. Notify the Reactor Engineering (RE) department that an LPRM has been bypassed	Notifies RE that LPRM 20-25A input to APRM 13 is bypassed	Sat/Unsat
Cue: As RE, acknowledge the report that LPRM 20-25A input to APRM 13 is bypassed.		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
<u>Cue:</u> Inform the operator that RE will perform the APRM GAIN ADJUSTMENTS per N1-REP-12.		
15. Perform APRM gain adjustment per N1-OP43A Attachment, APRM GAIN ADJUSTMENT, or N1-REP-12, APRM GAIN ADJUSTMENT	Acknowledges report from RE that the APRM GAIN ADJUSTMENT per N1-REP-12 is complete	Sat/Unsat
<u>Note:</u> Booth Operator - Perform an AGAF once the LPRM is bypassed.		
<u>Cue:</u> As RE, report to the reactor operator that the APRM GAIN ADJUSTMENT per N1-REP-12 is complete.		
16. Remove selected APRM from bypass	Positions APRM 11-12-13-14 BYPASS joystick to NEUTRAL position	Pass/Fail
<u>Note:</u> Candidate may use OP-38C section H.2.0 to un-bypass the APRM.		
	Checks computer, then checks back panel light to verify APRM un-bypassed	Sat/Unsat
17. Ensure an ESL entry is made for the bypassed LPRM	Informs the SM/CRS that an ESL entry is required for the bypassed LPRM	Sat/Unsat
<u>Cue:</u> As the SM/CRS, report that the bypassed LPRM has been entered into the ESL log.		
18. Ensure a CRC Book Entry is made in the LPRM bypass status sheet section for the bypassed LPRM	Informs the SM/CRS that a CRC Book entry is required for the bypassed LPRM	Sat/Unsat
<u>Cue:</u> As the SM/CRS, report that the CRC Book has been updated for the bypassed LPRM.		
Terminating Cue: LPRM 20-25A input to APRM 13 is bypassed per N1-OP-38C and APRM 13 is unbypassed.		
RECORD STOP TIME _____		

Initial Conditions:

1. LPRM 20-25A failed downscale.
2. There are no other LPRMs inoperable or bypassed.
3. No APRMs are bypassed.
4. A review of Control Room logs has been performed by the CRS to verify APRMs are operable.
5. The CRS has reviewed Technical Specifications and verified that the associated APRM can be bypassed.
6. The CRS has completed N1-OP-38C, Attachment 5, and determined that the LPRM 20-25A input to its associated APRM can be bypassed.

Initiating Cue:

“(Operator’s name), bypass LPRM 20-25A input to its associated APRM per N1-OP-38C, and then return the APRM to operable. You are NOT required to bypass the LPRM alarm function.”

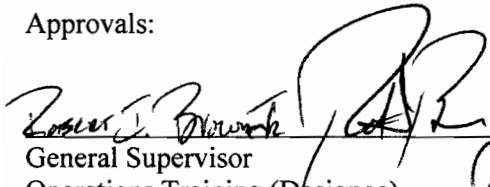
NRC JPM S-3
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Synchronize Main Generator to Grid, Main Generator Locks Out

Revision: NRC 2010

Task Number: N/A

Approvals:

 9/7/2010
General Supervisor
Operations Training (Designee) Date

N/A - Exam Security /
General Supervisor
Operations (Designee) Date

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform Simulate

Evaluation Location: Plant X Simulator

Expected Completion Time: 30 minutes Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-163.
2. Generator ready to be synchronized.
3. Complete N1-OP-32 through Step E.3.1. Candidate will start JPM with Step E.3.2.
4. Verify malfunction TC01 is set on Trigger 1 with a 10 second delay time.
5. Verify remote EG10 is set on Trigger 2 with a final value of "greenf".
6. Verify remote EG12 is set on Trigger 2 with a final value of "redf" and a 2 second delay time.
7. Verify Trigger 1 is set to activate on "hzleg10c==1&zdeg10SO==0".

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - Peer verification shall be demonstrated.

References:

1. NUREG 1123, 245000, A4.02, RO 3.1, SRO 2.9
2. N1-OP-32
3. N1-ARP-A7
4. N1-SOP-31.1

Tools and Equipment:

None

Task Standard: Main Generator synchronized to the grid, and then Turbine trip responded to in accordance with N1-SOP-31.1.

Initial Conditions:

1. A plant startup is in progress.
2. Reactor power is approximately 18%.
3. N1-OP-43A step E.5.9 is in progress to synchronize and load the turbine and generator.
4. The Main Generator is ready to be synchronized to the grid.
5. N1-OP-32 is completed through step E.3.1.
6. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), complete synchronizing the Main Generator to the grid by starting at step E.3.2 of N1-OP-32. Load the Generator until all turbine bypass valves are closed.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-32 obtained and section E.3.0 entered	Sat/Unsat
3. Verify open R915 and R925	Verifies R915 and R925 indicate open by verifying red lights off, green lights on	Sat/Unsat
<u>Note:</u> There is a short time delay before movement of MOD-18 results in indicating light change and clearing of annunciator A7-1-5 “Generator Switch 18 Open”.		
4. Close switch SW-18	Places SW 18 Generator 1 switch to close and verifies green light goes out and red light is on	Pass/Fail

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
5. Insert Sync Key into R915 (R925) SYNCHRONIZING Switch, AND place R915 (R925) SYNCHRONIZING Switch to ON	Inserts Sync Key into R915 (R925) SYNCHRONIZING Switch, AND places R915 (R925) SYNCHRONIZING Switch to ON	Pass/Fail
6. Verifies INCOMING and RUNNING voltages are matched	Adjusts voltage as needed using the Exciter Rheostat	Sat/Unsat
7. Adjust GOVERNOR Switch UNTIL synchroscope is rotating slowly in the FAST direction	Adjusts generator frequency using by adjusting the GOVERNOR Switch	Sat/Unsat
8. When INCOMING and RUNNING voltages are matched, AND synchroscope is indicating 3 to 5 degrees lead time, close R915 (R925)	When synchroscope indicates 3 to 5 degrees lead time, places control switch for R915 (R925) in the CLOSE position	Pass/Fail
9. Immediately load the generator to 15-60 MWe OR UNTIL all Turbine Bypass Valves Close	Places governor control switch in the RAISE position until all turbine bypass valves are closed (as observed on panel A1, all Turbine BV indicating lights "green")	Sat/Unsat
10. Place R915 (R925) SYNCHRONIZING Switch to OFF and remove key	R915 (R925) SYNCHRONIZING Switch placed in OFF and key removed	Sat/Unsat
Note: When the SYNCHRONIZING Switch is placed in OFF, a trigger with a 10 second time delay will cause a Turbine trip. This initiates the alternate path.		
11. Executes alarm response procedures or N1-SOP-31.1	Observes annunciators, determines the Turbine and Generator have tripped and enters N1-SOP-31.1	Sat/Unsat
Cue: If candidate requests guidance, tell them to respond using the procedure for a Turbine trip.		
12. Verify the following:	Visually observes the following:	
• Turbine Stop valves closed	Turbine Stop Valves closed (green lights on)	Sat/Unsat
• Turbine Control valves closed	Turbine Control Valves closed (green lights on)	Sat/Unsat
• Turbine Reheat Stop Valves closed	Combined Reheat Valves closed (green lights on)	Sat/Unsat
• Turbine Intercept Valves closed		
• Bypass valves maintaining Reactor pressure as necessary	Turbine Bypass Valves open to control reactor pressure (red lights on for several valves)	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
13. Verify the following Electrical Distribution system conditions:	Visually observes the following:	
• 345 Kv Breakers R915, R925 TRIPPED	345Kv Breakers R915, R925 TRIPPED (Green light on)	Sat /Unsat
• MOD 18 OPEN	MOD 18 OPEN (Green light on)	Sat/Unsat
• PB 11, PB12 supplied from Reserve Power	PB 11, PB12 supplied from Reserve Power (R123 and R112 CLOSED, Red lights on)	Sat/Unsat
<u>Cue:</u> Another Operator will control RPV water level and pressure.		
14. Perform the following:		
• Verify ON, Aux. Oil pumps	Rotates Aux. Oil Pump switches (2) clockwise, observes red lights illuminate, green lights extinguish	Sat /Unsat
• Reset Generator 86 relays	Resets 86 relays by rotating control switches clockwise	Pass/Fail
• Restart Stator Water Cooling	Dispatches operator to restart Stator Water Cooling	Pass/Fail
<u>Note:</u> When dispatched to restart Stator Water Cooling, insert trigger 2, then report the task has been completed with time compression.		
• Start bearing lift pumps	Rotates Bearing lift pump switches (5) clockwise, observes red lights illuminate, green lights extinguish	Sat/Unsat
15. Shutdown turbine per N1-OP-31	Proper communications used (GAP-OPS-O1)	Sat /Unsat
<u>Cue:</u> Inform candidate that another operator will be tasked with Turbine shutdown.		
16. Verify ATS Gross Failure Lights are OFF	Observes ATS Gross Failure Lights are OFF	Sat /Unsat
17. Contact Structural Engineering to perform walkdown of System 03 piping and support for damage	Proper communications used (GAP-OPS-O1)	Sat/Unsat

Terminating Cue: Main Turbine tripped, TCVs, TSVs and Combined Reheat Valves closed, plus Generator 86s reset, Stator Water Cooling on, Auxiliary Oil pumps on, and Bearing Lift pumps on.

RECORD STOP TIME _____

Initial Conditions:

1. A plant startup is in progress.
2. Reactor power is approximately 18%.
3. N1-OP-43A step E.5.9 is in progress to synchronize and load the turbine and generator.
4. The Main Generator is ready to be synchronized to the grid.
5. N1-OP-32 is completed through step E.3.1.

Initiating Cue:

“(Operator’s name), complete synchronizing the Main Generator to the grid by starting at step E.3.2 of N1-OP-32. Load the Generator until all turbine bypass valves are closed.”

NRC JPM S-4
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Rapid RWCU System Restoration for Level Control

Revision: NRC 2010

Task Number: N/A

Approvals:

Robert J. Brown Jr. 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 20 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-164
2. Verify RPV water level is above 100 inches
3. Verify RWCU system isolated with isolation signal clear

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - Peer verification shall be demonstrated.

References:

1. NUREG 1123, 204000, A4.06, RO 3.0, SRO 2.9
2. N1-OP-3

Tools and Equipment:

None

Task Standard: RWCUC is rejecting to the condenser for level control.

Initial Conditions:

1. RWCUC isolated following a low-low RPV water level transient.
2. RPV water level is high.
3. RWCUC system is needed to control RPV water level.
4. Another Operator will be controlling RPV pressure using the ERVs.
5. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), perform rapid RWCUC system restoration for RPV water level control and establish reject flow to the condenser, per N1-OP-3 Section H.10.0.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-3 is obtained, precautions & limitations reviewed & section H.10.0 referenced	Sat/Unsat
3. Verify the following:		
• All isolation signals clear	Observes K3-4-4 clear	Sat/Unsat
• Cause of isolation is known	Determines cause is known per initial conditions	Sat/Unsat
• Condition corrected	Determines condition corrected per initial conditions	Sat/Unsat
• Review Precaution and Limitation 29	Reads Precaution and Limitation 29	Sat/Unsat
4. Close in-service PCV		
• 33-39, CLEANUP PCV 12 (HP)	Places controller PC-33-39 in MAN and dials to 0	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
5. Close 33-40, FCV-CLEANUP SYSTEM	Verifies controller RMC-33-151 CLEANUP SYS SELECTOR in MAN and dialed to 0	Sat/Unsat
Note: The control used to manipulate 33-40 is labeled with the controller number only (RMC-33-151). If candidate identifies need for procedure enhancement, report that CRS has processed an Immediate Procedure Change, and direct candidate to continue as though the procedure has been corrected.		
6. Close 33-165, CLEANUP TO COND & WASTE FLOW	Verify controller RMC-33-165C dialed to 0	Sat/Unsat
7. Verify one of the following valves open:		
• 33-10, CLEANUP TO WASTE DISPOSAL BV	Rotates CLEANUP SELECTOR CONDENSER WASTE control switch clockwise to COND position	Pass/Fail
• 33-11, CLEANUP TO CONDENSER BV	Observes right hand set of lights red light ON and green light OFF, for 33-11 valve to condenser	Sat/Unsat
Note: Initiating cue directs the candidate to reject to the condenser		
8. Open 33-01R, CU RETURN ISOLATION VALVE 1 (INSIDE)	Rotates 33-01R control switch clockwise to open	Pass/Fail
	Observes red light ON green light OFF	Sat/Unsat
9. Partially open 33-04R, CU SUPPLY ISOLATION VALVE 12 (OUTSIDE) approximately 3 seconds	Rotates 33-04R control switch clockwise to open and uses pull to stop function after 3 seconds	Sat/Unsat
	Observes red light ON, green light ON	Sat/Unsat
Note: Cleanup System Inlet Pressure will rapidly rise in the next step		
10. Slowly jog open 33-02R, CU SUPPLY ISOLATION VALVE 11 (INSIDE), using approx ½ second open signals followed by pull to stop signals UNTIL Cleanup system inlet pressure rises and stabilizes at reactor pressure	Rotates 33-02R control switch clockwise to open and uses pull to stop in ½ second intervals UNTIL Cleanup system inlet pressure rises and stabilizes at reactor pressure on indicators	Sat/Unsat
	Observes red light ON, green light ON	Sat/Unsat
	Observes cleanup system pressure and reactor pressure approximately equal	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
11. WHEN Cleanup System inlet pressure is stable, fully open 33-02R, CU SUPPLY ISOLATION VALVE 11 (INSIDE)	Rotates 33-02R control switch clockwise to open	Pass/Fail
	Observes red light ON, green light OFF	Sat/Unsat
12. WHEN 33-02R is fully open, fully open 33-04R, CU SUPPLY ISOLATION VALVE 12 (OUTSIDE)	Rotates 33-04R control switch clockwise to open	Pass/Fail
	Observes red light ON, green light OFF	Sat/Unsat
13. Open 33-41, AO BLOCKING VALVE	Rotates 33-41 control switch clockwise to open	Pass/Fail
	Observes red light ON, green light OFF	Sat/Unsat
14. Simultaneously perform the following to maintain system parameters and reactor water level:		
Cue: Another operator will monitor computer point F359.	Using controller PC-33-39, dials output signal to open valve and establish inlet pressure below 100 psig	Sat/Unsat
<ul style="list-style-type: none"> Adjust in-service PCV to maintain Cleanup system pressure below 100 psig 		
Note: Operator may set the PCV in AUTO after pressure is established	Using controller RMC-33-165C, dials output signals to open valve and establish system reject flow	Pass/Fail
<ul style="list-style-type: none"> Adjust 33-165 to maintain reactor water level AND maintain non-regenerative heat exchanger outlet temperature (F359) less than 120°F 	Maintains parameters to prevent a subsequent RWCU system isolation	Pass/Fail
Note: 33-165 controller must be greater than 20% before the valve will open, then may be lowered below 20% to adjust flow.		
Note: The task has been completed, however the candidate may continue - if so, use the following cues.		
15. As time permits, place in-service filter on Manual Hold per applicable subsection of Section G.	Proper communications used (GAP-OPS-01)	Sat/Unsat
Cue: Time does not permit placing filter in manual hold.		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
16. IF significant water hammer was experienced, THEN perform a system walkdown of high pressure supply line prior to performing normal system startup.	Proper communications used (GAP-OPS-01)	Sat/Unsat
<u>Cue:</u> No significant water hammer was experienced.		
17. Reports to CRS that RWCU is restored and rejecting to condenser for level control	Proper communications used (GAP-OPS-01)	Sat/Unsat

Terminating Cue: RWCU is rejecting to the condenser for level control.

RECORD STOP TIME _____

Initial Conditions:

1. RWCU isolated following a low-low RPV water level transient.
2. RPV water level is high.
3. RWCU system is needed to control RPV water level.
4. Another Operator will be controlling RPV pressure using the ERVs.

Initiating Cue:

“(Operator’s name), perform rapid RWCU system restoration for RPV water level control and establish reject flow to the condenser, per N1-OP-3 Section H.10.0.”

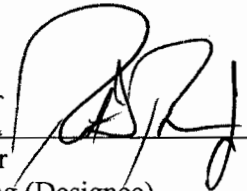
NRC JPM S-5
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Start the Emergency Ventilation System (Loop 11)

Revision: NRC 2010

Task Number: N/A

Approvals:

 9/2/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 15 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-165 (100% power, shared with JPM S-6).
2. Verify RB Ventilation Exhaust fan 11 is running and Supply fan 12 is running, with other fans secured.
3. Take simulator out of freeze.

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM/CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.

References:

1. NUREG 1123, 288000, A4.01, RO 3.1, SRO 2.9
2. N1-OP-10

Tools and Equipment:

None

Task Standard: Emergency Ventilation System (Loop 11) is running.

Initial Conditions:

1. The plant is operating at 100% power.
2. Fuel was being moved in the SFP in preparation for an outage.
3. An irradiated fuel bundle has been dropped in the SFP.
4. The refuel floor has been evacuated.
5. Refuel floor radiation levels are rising slowly, but not enough to auto initiate RBEVS.
6. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), manually start Reactor Building Emergency Ventilation System Loop 11 and isolate normal Reactor Building Ventilation, in accordance with N1-OP-10 Section H.1.0.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-10 obtained, precautions & limitations reviewed and section H.1.0 referenced	Sat/Unsat
3. Verify open 202-36, EM Ventilation from Reactor Bldg BV	Observes 202-36 red light on and green light off	Sat/Unsat
3. Verify closed the following valves: <ul style="list-style-type: none">• 202-47, EM VENTILATION TIE BV• 202-74, EM VENTILATION LOOP 11 COOLING BV• 202-75, EM VENTILATION LOOP 12 COOLING BV	Observes 202-47 green light on and red light off Observes 202-74 green light on and red light off Observes 202-75 green light on and red light off	Sat/Unsat Sat/Unsat Sat/Unsat
4. Place 202-37, EM VENTILATION LOOP 11 INLET BV control switch to OPEN	Rotates 202-37 switch CW to open	Pass/Fail
5. Verify open 202-37, EM VENTILATION LOOP 11 INLET BV	Observes 202-37 red light on and green light off	Sat/Unsat
6. Start 202-53, EVS FAN 11	Rotate switch CW to start	Pass/Fail

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
7. Verify open 202-34, EM VENT EXHAUST FAN 11 OUTLET BV	Observes 202-34 red light on and green light off	Sat/Unsat
8. Confirm proper operation of 202-50, EM VENT EXHAUST FAN 11 INLET FCV, by observing indicating lights and flow indication	Observes 202-50 red and green lights both on as valves goes to intermediate position	Sat/Unsat
	Observes flow meter 202-49B	Sat/Unsat
9. Verify control switches for the following fans are in OFF:		
• 202-01, REACTOR BLDG SUPPLY FAN 11	Observes Reactor Building Supply Fan 11 control switch in OFF	Sat/Unsat
		Sat/Unsat
• 202-02, REACTOR BLDG SUPPLY FAN 12	Rotates Reactor Building Supply Fan 12 control switch CCW to OFF	
10. Verify control switches for the following fans are in OFF:		
• 202-05, REACTOR BLDG EXHAUST FAN 11	Rotates Reactor Building Exhaust Fan 11 control switch CCW to OFF	Sat/Unsat
• 202-06, REACTOR BLDG EXHAUST FAN 12	Observes Reactor Building Exhaust Fan 12 control switch in OFF	Sat/Unsat
11. Verify closed the following valves:		
• 202-32, REACTOR BLDG EXHAUST ISOLATION VALVE 11	Rotates control switch for 202-32 and 202-31 CCW to close	Pass/Fail
• 202-15, REACTOR BLDG SUPPLY ISOLATION VALVE 11	Rotates control switch for 202-15 and 202-16 CCW to close	Pass/Fail
• 202-31, REACTOR BLDG EXHAUST ISOLATION VALVE 12		
• 202-16, REACTOR BLDG SUPPLY ISOLATION VALVE 12		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
12. Verify closed the following valves:		
<ul style="list-style-type: none"> 202-03, REACTOR BLDG EXHAUST FAN 11 INLET DAMPER 	Observes 202-03 green light on and red light off	Sat/Unsat
Note: The procedure has the incorrect name for 202-03. It should be REACTOR BLDG SUPPLY FAN 11 INLET DAMPER. If candidate identifies need for procedure enhancement, report that CRS has processed an Immediate Procedure Change, and direct candidate to continue as though the procedure has been corrected.		
<ul style="list-style-type: none"> 202-08, REACTOR BLDG EXHAUST FAN 11 OUTLET DAMPER 	Observes 202-08 green light on and red light off	Sat/Unsat
<ul style="list-style-type: none"> 202-04, REACTOR BLDG SUPPLY FAN 12 INLET DAMPER 	Observe 202-04 green light on and red light off	Sat/Unsat
<ul style="list-style-type: none"> 202-07, REACTOR BLDG EXHAUST FAN 12 OUTLET DAMPER 	Observes 202-07 green light on and red light off	Sat/Unsat
13. IF drywell and torus venting was in progress, THEN clear personnel from the drywell at the discretion of the Shift Manager after consulting with Radiation Protection	Proper communications used (GAP-OPS-01)	Sat/Unsat
Cue: Drywell venting is NOT in progress.		
14. Verify 201-35 drywell and torus vent and purge fan Off	Observes 201-35 green flagged and/or observes green light on and red light off	Sat/Unsat
15. Verify closed the following valves:		
<ul style="list-style-type: none"> 201-22, DRYWELL & TOR VENT & PURGE FAN OUTLET BV 	Observes 201-22 green light on and red light off	Sat/Unsat
<ul style="list-style-type: none"> 201-21, DRYWELL & TOR VENT & PURGE FAN INLET BV 	Observes 201-21 green light on and red light off	Sat/Unsat
<ul style="list-style-type: none"> 201-16, TORUS N2 VENT & PURGE ISOLATION VALVE 11 	Observes 201-16 green light on and red light off	Sat/Unsat
<ul style="list-style-type: none"> 201-17, TORUS N2 VENT & PURGE ISOLATION VALVE 12 	Observes 201-17 green light on and red light off	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
<ul style="list-style-type: none"> 201-32, DW N2 VENT & PURGE ISOLATION VALVE 11 201-31, DW N2 VENT & PURGE ISOLATION VALVE 12 	<p>Observes 201-32 green light on and red light off</p> <p>Observes 201-31 green light on and red light off</p>	<p>Sat/Unsat</p> <p>Sat/Unsat</p>
16. Monitor RX BLDG/ATM DP and EM VENT DIS FLOW CFM meters on panel L (normal flow approximately 1600 CFM)	Observes ΔP and flow meters on L Panel	Sat/Unsat
<p>Note: Reactor Building D/P and RBEVS flow may take a short period of time to stabilize at normal levels.</p> <p>Cue: If candidate recognizes low Reactor Building D/P and/or low RBEVS flow, state that the parameters are improving and direct them to allow them to stabilize.</p>		
17. Notify RP and CRS/SM that EVS loop 11 has been placed in service	Proper communications used (GAP-OPS-01)	Sat/Unsat

Terminating Cue: Emergency Ventilation System (Loop 11) is running and normal Reactor Building ventilation is isolated.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. Fuel was being moved in the SFP in preparation for an outage.
3. An irradiated fuel bundle has been dropped in the SFP.
4. The refuel floor has been evacuated.
5. Refuel floor radiation levels are rising slowly, but not enough to auto initiate RBEVS.

Initiating Cue:

“(Operator’s name), manually start Reactor Building Emergency Ventilation System Loop 11 and isolate normal Reactor Building Ventilation, in accordance with N1-OP-10 Section H.1.0.”


NRC JPM S-6
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: MSIV Stroke Test and Limit Switch Test (N1-ST-Q26)

Revision: NRC 2010

Task Number: N/A

Approvals:


General Supervisor 9/7/2010
Operations Training (Designee) Date

N/A - Exam Security /
General Supervisor /
Operations (Designee) Date

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 15 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize the simulator to IC-165.
2. Take the simulator out of freeze.

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 239001, A4.01, RO 4.2, SRO 4.1
2. N1-ST-Q26

Tools and Equipment:

None

Task Standard: N1-ST-Q26 completed for Main Steam Isolation Valve 112.

Initial Conditions:

1. The plant is operating at 100% power.
2. All prerequisites for N1-ST-Q26 are complete.
3. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), test Main Steam Line Isolation Valve 112 in accordance with N1-ST-Q26, Section 8.2.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-ST-Q26 obtained, precautions & limitations reviewed	Sat/Unsat
3. Prepare to initiate a Half-Scram on CHANNEL 11: <ul style="list-style-type: none">• Verify NO RPS Half-Scram signals exist• Notify CRO that the following steps will initiate a Half-Scram	Observes all scram solenoid lights energized Proper communications used (GAP-OPS-O1)	Sat/Unsat Sat/Unsat
4. Place Main Steam Isolation Valve 7% Test Switch to the 112 position	Test switch is rotated to the 112 position	Pass/Fail
5. Confirm 01-03 MSIV 112 white test light ON	White test light for MSIV 112 is verified energized	Sat/Unsat
6. Confirm 01-03 MSIV 112 yellow test light OFF	Yellow test light for MSIV 112 is verified de-energized	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
<p>Note: JPM steps 7 to 11 will occur in rapid sequence; expect annunciators F1-1-7 and F1-2-1.</p> <p>Cue: Notify the candidate that you will be monitoring the valve mimic board for MSIV 112.</p>		
7. Momentarily place 01-03 MSIV-112 control switch to CLOSE position	Rotates control switch for MSIV 112 momentarily CCW to CLOSE, then releases	Pass/Fail
8. Confirm RPS Channel 11 Half-Scram indications	Observes the following: <ul style="list-style-type: none"> CHANNEL 11 SCRAM SOLENOID GROUPS 1, 2, 3, 4, white light off CHANNEL 11 B.U. SCRAM S.D.V. VENT & DRAIN VALVE red light off 	Sat/Unsat Sat/Unsat
Cue: If F1-1-7 is cleared before candidate completes verification, report that F1-1-7 alarmed and cleared as expected.	<ul style="list-style-type: none"> Annunciator F1-1-7, RPS CH 11 MN STM LINE 11 ISOL VALVE CLOSED, alarms 	Sat/Unsat
	<ul style="list-style-type: none"> Annunciator F1-2-1, RPS CH 11 AUTO REACTOR TRIP, alarms 	Sat/Unsat
9. Confirm 01-03, MSIV-112 automatic partial closure indications	Observes the following: <ul style="list-style-type: none"> 01-03 MSIV-112 Green Light ON 01-03 MSIV-112 Red Light ON 	Sat/Unsat Sat/Unsat
Cue: The MSIV 112 mimic light came on and went off as expected.	<ul style="list-style-type: none"> 01-03 MSIV-112 Mimic Light ON momentarily 	Sat/Unsat
10. Confirm 01-03 MSIV-112 yellow light illuminated BRIGHT	Observes 01-03 MSIV 112 yellow test light ON brightly	Sat/Unsat
11. Confirm 01-03 MSIV-112 automatic opening indications	Observes the following: <ul style="list-style-type: none"> 01-03 MSIV-112 Green Light OFF 01-03 MSIV-112 Red Light ON 01-03 MSIV-112 Mimic Light OFF 	Sat/Unsat Sat/Unsat Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
12. Place MSIV 7% Test Switch to the OFF position	Rotates Test Switch to OFF	Pass/Fail
<u>Cue:</u> Inform candidate that another operator has completed the Independent Verification.		
13. Confirm 01-03 MSIV 112 White Test Light OFF	Observes White Test Light for MSIV-112 is OFF	Sat/Unsat
14. Confirm 01-03 MSIV 112 Yellow Test Light OFF	Observes Yellow Test Light for MSIV-112 is OFF	Sat/Unsat
15. Depress REACTOR TRIP RESET at Panel E	Depresses Rx Trip RESET Button on E-Console	Pass/Fail
<u>Note:</u> F1-2-1 clears		
16. Confirm RPS Channel 11 Half-Scram indications clear	Observes the following: <ul style="list-style-type: none"> CHANNEL 11 SCRAM SOLENOID Groups 1,2,3,4 White Light ON CHANNEL 11 BACKUP SCRAM VALVE S.D.V. VENT ND DRAIN VALVE Red Light ON Annunciator F1-1-7, RPS CH 11 MN STM LINE 11 ISOL VALVE CLOSED, clear Annunciator F1-2-1, RPS CH 11 AUTO REACTOR TRIP, clear 	Sat/Unsat Sat/Unsat Sat/Unsat Sat/Unsat

Terminating Cue: N1-ST-Q26 completed for MSIV 01-03.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. All prerequisites for N1-ST-Q26 are complete.

Initiating Cue:

“(Operator’s name), test Main Steam Line Isolation Valve 112 in accordance with N1-ST-Q26, Section 8.2.”

NRC JPM S-7
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Perform a Rod Block Withdrawal Test IAW N1-ST-R4

Revision: NRC 2010

Task Number: N/A

Approvals:

Robert L. Brown Jr. 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____ Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-167.
2. Verify malfunction RD05R1851 is active.
3. Verify Trigger 1 command is set to "zdrdin==1&&rdvposd(125)>767".
4. Verify Trigger 1 event action is set to "dmf rd05r1851".
5. Provide a copy of N1-ST-R4 marked up to step 8.1.6. Mark the procedure with control rods 18-51 and 34-03 selected for steps 8.1.4 and 8.1.9, respectively.

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 201003, A2.02, RO 3.7, SRO 3.8
2. N1-ST-R4
3. N1-OP-5

Tools and Equipment:

None

Task Standard: Control Rod 18-51 re-coupled and N1-ST-R4 section 8.1 successfully performed.

Initial Conditions:

1. The plant is shut down.
2. N1-ST-R4 is complete up to step 8.1.6 for the Rod Blocks Withdrawal Test.
3. Reactor Engineering has directed using control rod 18-51 for the first rod withdrawal, and control rod 34-03 for the second attempted rod withdrawal.
4. The instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), perform N1-ST-R4 Section 8.1, Rod Blocks Withdrawal Test, withdrawing control rod 18-51.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
RECORD START TIME _____		
2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-ST-R4 obtained, section 8.1 referenced	Sat/Unsat
3. Withdraw selected control rod to position 48 in accordance with N1-OP-5, Control Rod Drive System	Obtains N1-OP-5, references section F.1.0	Sat/Unsat
4. Verify Control Rod Power is ON	Rotates Control Rod Power switch CW to ON	Pass/Fail
5. Depress Rod Select pushbutton for control rod to be withdrawn on Rod Map Display at E Panel	Depresses Control Rod 18-51 select button	Pass/Fail

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
6. Confirm the following:		
<ul style="list-style-type: none"> Rod Select pushbutton back lighted on Rod Map Display 	Observes Control Rod 18-51 select button LIT	Sat/Unsat
<ul style="list-style-type: none"> SELECT light illuminated for appropriate control rod at F Panel 	Observes Control Rod 18-51 select light LIT on Full Core Display	Sat/Unsat
7. Verify no other control rods indicate Selected at Rod Map Display, OR F Panel	Observes no other Control Rod select lights LIT on Control Rod select matrix and Full Core Display	Sat/Unsat
8. Place and hold (4S3), Control Rod N Override Switch to NOTCH OVERRIDE position and while still holding, place and hold (4S1), Control Rod Movement switch to the ROD OUT NOTCH position	Rotates Control Rod N Override Switch CW and holds during Control Rod movement	Sat/Unsat
	Rotates Control Rod Movement Switch CW and hold during Control Rod movement	Sat/Unsat
	Control Rod 18-51 withdrawn to position 48	Pass/Fail
Note: The uncoupled control rod will become apparent when the rod travels beyond position 48 during the coupling check. This cues the candidate to the alternate path.		
9. IF the target position is 48, WHEN the control rod reaches 48, perform the following:		
a. CRD coupling check as follows:		
<ul style="list-style-type: none"> Position 48 illuminates with red backlighting AND remains illuminated for selected rod at F Panel 	Observes Rod Position Indication for Control Rod 18-51 illuminate 48 and then go blank	Sat/Unsat
<ul style="list-style-type: none"> ROD OVERTRAVEL annunciator, F3-1-6 does NOT alarm 	Observes F3-1-6 in alarm	Sat/Unsat
<ul style="list-style-type: none"> Computer Point B012, CRD OVERTRAVEL does NOT alarm 	Observes Computer Point B012 in alarm	Sat/Unsat
b. Release 4S1, Control Rod Movement Switch AND 4S3, Control Rod N Override Switch.	Releases 4S1, Control Rod Movement Switch AND 4S3, Control Rod N Override Switch	Sat/Unsat
10. Goes to OP-5 Sect. H.18.	Obtains OP-5 and goes to section H.18	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
11. Insert Control Rod 18-51 to position 44	Rotates Control Rod Movement Switch CCW to move Control Rod 18-51 to position 44	Pass/Fail
Note: When Control Rod 18-51 is inserted to position 44, verify Trigger 1 activates and deletes the rod uncoupling malfunction.		
12. Confirm Annunciator F3-1-6 CONTROL ROD OVERTRAVEL, clear	Observes Annunciator F3-1-6 clear	Sat/Unsat
13. Withdraw control rod 18-51 to position 48	Rotates Control Rod Movement Switch CW to move Control Rod 18-51 to position 48 (may also rotate Control Rod N Override Switch CW to achieve continuous rod motion)	Sat/Unsat
14. Perform rod over-travel check in accordance with N1-OP-5	Rotates Control Rod N Override Switch CW and holds during coupling check	Sat/Unsat
	Rotates Control Rod Movement Switch CW and hold during coupling check	Sat/Unsat
	Observes Rod Position Indication for Control Rod 18-51 illuminate and remain at 48	Sat/Unsat
	Observes F3-1-6 does NOT alarm	Sat/Unsat
	Observes Computer Point B012 does NOT alarm	Sat/Unsat
	Releases 4S1, Control Rod Movement Switch AND 4S3, Control Rod N Override Switch	Sat/Unsat
15. Confirm the following:	Proper communications used (GAP-OPS-01)	Sat/Unsat
<ul style="list-style-type: none"> • ALL RODS IN light off at RSP 11 • ALL RODS IN light off at RSP 12 		
Cue: The ALL RODS IN lights are off at the RSPs.		

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
16. Attempt withdrawal of a second rod as follows:		
a. Select AND record rod ID	Observes Control Rod 34-03 has been pre-recorded	Sat/Unsat
Note: Control Rod 34-03 should be selected per the initial conditions, but any Control Rod other than 18-51 will allow for successful surveillance completion.	Depresses a Control Rod select button other than 18-51	Pass/Fail
b. Attempt to withdraw rod	Rotates Control Rod Movement Switch CW	Pass/Fail
c. Confirm the following:		
• Selected rod did NOT move	Observes selected Control Rod does not move	Sat/Unsat
• Rod Block Monitor REFUEL ONE ROD PERMIT light – lit	Observes Rod Block Monitor REFUEL ONE ROD PERMIT light – lit	Sat/Unsat
• Annunciator F3-4-4, ROD BLOCK – alarmed	Observes F3-4-4 in alarm	Sat/Unsat
17. Select control rod 18-51 AND insert fully	Depresses Control Rod 18-51 select button	Pass/Fail
	Rotates Control Rod Movement Switch CCW and holds until Control Rod 18-51 is fully inserted	Pass/Fail
18. Verify rod at position 00	Observes Control Rod 18-51 indicates 00	Sat/Unsat
19. Confirm the following:		
• Rod Block Monitor REFUEL ONE ROD PERMIT light – off	Observes Rod Block Monitor REFUEL ONE ROD PERMIT light OFF	Sat/Unsat
• Annunciator F3-4-4, ROD BLOCK – clear	Observes F3-4-4 clear	Sat/Unsat
• ALL RODS IN light lit on RSP 11	Proper communications used (GAP-OPS-01)	Sat/Unsat
• ALL RODS IN light lit on RSP 12		
Cue: The ALL RODS IN lights are lit at the RSPs.		

Terminating Cue: Control Rod 18-51 re-coupled and N1-ST-R4 section 8.1 successfully performed.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is shut down.
2. N1-ST-R4 is complete up to step 8.1.6 for the Rod Blocks Withdrawal Test.
3. Reactor Engineering has directed using control rod 18-51 for the first rod withdrawal, and control rod 34-03 for the second attempted rod withdrawal.

Initiating Cue:

“(Operator’s name), perform N1-ST-R4 Section 8.1, Rod Blocks Withdrawal Test, withdrawing control rod 18-51.”

NRC JPM S-8
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Vent the Drywell Prior to Personnel Entry Per N1-OP-9

Revision: NRC 2010

Task Number: N/A

Approvals:

Roberts E. Brown 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: X Perform _____ Simulate

Evaluation Location: _____ Plant X Simulator

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluator's Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Simulator

Simulator Set-up (if required):

1. Initialize Simulator to IC-162 (shared with JPM S-2).
2. Verify Torus pressure is 0 psig.

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading area as **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 223001, A4.03, RO 3.4, SRO 3.4
2. N1-OP-9

Tools and Equipment:

None

Task Standard: Drywell vented to atmospheric pressure in accordance with N1-OP-9.

Initial Conditions:

1. The plant is operating at 100% power.
2. Preparations are underway for a plant shutdown.
3. The Torus has already been vented.
4. N1-OP-9 is completed through Step G.1.11.3.
5. Instructor to ask operator for any questions.

Initiating Cue:

“(Operator’s name), vent the Drywell and secure the lineup when Drywell pressure is below 0 psig in accordance with N1-OP-9, starting at step G.1.12.”

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
1. Provide repeat back of initiating cue <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-9 obtained, precautions and limitation reviewed, section G.1.0 referenced	Sat/Unsat
3. Open 201-32, DW N2 VENT & PURGE ISOLATION VALVE 11	Rotates 201-32 control switch CW	Pass/Fail
4. Start 201-35, DRYWELL & TORUS VENT & PURGE	Rotates 201-35 control switch CW	Pass/Fail
5. Verify open the following valves:		
• 201-21, DRYWELL & TOR VENT & PURGE FAN INLET BV	Observes 201-21 red light on, green light off	Sat/Unsat
• 201-22, DRYWELL & TOR VENT & PURGE FAN OUTLET BV	Observes 201-22 red light on, green light off	Sat/Unsat

<i>Performance Steps</i>	<i>Standard</i>	<i>Grade</i>
6. Throttle open 201-31, DW N2 VENT & PURGE ISOLATION VALVE 12	Rotates 201-31 control switch CW	Pass/Fail
	Throttles 201-31 by using pull-to-stop feature of control switch	Sat/Unsat
7. When drywell pressures drops <u>BELOW</u> 0 psig, perform the following steps:	Observes Drywell pressure and when pressure lowers below 0 psig continues the JPM	Sat/Unsat
8. Stop 201-35 DRYWELL & TORUS VENT & PURGE FAN	Rotates 201-35 control switch CCW	Pass/Fail
9. Verify closed the following valves:		
• 201-21, DRYWELL & TOR VENT & PURGE FAN INLET BV	Observes 201-21 green light on, red light off	Sat/Unsat
• 201-22, DRYWELL & TOR VENT & PURGE FAN OUTLET BV	Observes 201-22 green light on, red light off	Sat/Unsat
10. Verify closed the following valves:		
• 201-32, DW N2 VENT & PURGE ISOLATION VALVE 11	Rotates 201-32 control switch CCW	Pass/Fail
• 201-31, DW N2 VENT & PURGE ISOLATION VALVE 11	Rotates 201-31 control switch CCW	Pass/Fail

Terminating Cue: Drywell vented to atmospheric pressure in accordance with N1-OP-9 and lineup returned to normal.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. Preparations are underway for a plant shutdown.
3. The Torus has already been vented.
4. N1-OP-9 is completed through Step G.1.11.3.

Initiating Cue:

“(Operator’s name), vent the Drywell and secure the lineup when Drywell pressure is below 0 psig in accordance with N1-OP-9, starting at step G.1.12.”

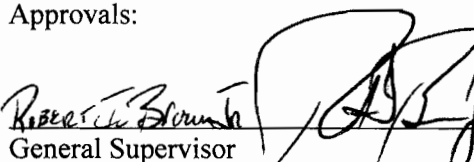
NRC JPM P-1
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Lineup Lake Water to Supply the EC Makeup Tanks
Using the Electric Fire Pump

Revision: NRC 2010

Task Number: N/A

Approvals:

 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A - Exam Security /
General Supervisor Date
Operations (Designee)

N/A - Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: _____ Perform X Simulate

Evaluation Location: X Plant _____ Simulator

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: Yes

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Screenhouse

Simulator Set-up (if required):

None

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - No other verification shall be demonstrated.

References:

1. NUREG 1123, 207000, A2.05, RO 4.0, SRO 4.0
2. N1-SOP-21.2, Attachment 5
3. N1-OP-21A

Tools and Equipment:

None

Task Standard: Emergency Condenser Makeup Tanks filled to 10 feet using the Electric Fire Pump.

Initial Conditions:

1. The plant was operating at 100% power.
2. A control room evacuation has occurred.
3. Emergency Condenser Makeup Tank levels are low at 6 feet.
4. Emergency Condenser Makeup cross-connect valve, 60-13, has failed closed.
5. Instructor to ask operator for any questions.

Initiating cue:

“(Operator’s name), raise Emergency Condenser Makeup Tank levels to 10 feet using the Diesel Fire Pump, in accordance with N1-SOP-21.2, Attachment 5.”

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-SOP-21.2, Attachment 5 obtained	Sat/Unsat
3. Start at least one of the following Fire Pumps (Screenhouse): <ul style="list-style-type: none">• Diesel Fire Pump (Preferred)• Electric Fire Pump	Attempts to starts the Diesel Fire Pump by one of the following means: <ul style="list-style-type: none">• 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	Sat/Unsat

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 this standard.

Cue: Report that the Diesel Fire Pump failed to start and is now damaged.

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.

Performance Steps	Standard	Grade
Cue: If requested, Electric Fire Pump indications are: <ul style="list-style-type: none"> • Motor current = 40 amps • Discharge pressure = 140 psig • Strainer D/P = 1.5 psid 	Starts the Electric Fire Pump by rotating control switch clockwise to START	Pass/Fail
Note: The candidate will proceed to TB 369' for the remaining steps.		
4. Unlock and throttle open the following valves to maintain level in Emergency Condenser Makeup Tanks:		
<ul style="list-style-type: none"> • 100-68, BV – FIRE WATER TO EMERG COND M/U TANK 12 	Unlocks 100-68 and removes chain from valve handwheel	Pass/Fail
	Rotates 100-68 handwheel CCW to open valve	Pass/Fail
Cue: Once candidate has opened 100-68, report that EC M/U Tank 12 level is 10 feet	Observes Makeup tank level	Sat/Unsat
	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
	Rotates 100-68 handwheel CW to close the valve	Sat/Unsat
<ul style="list-style-type: none"> • 100-69, BV – FIRE WATER TO EMERG COND M/U TANK 11 	Unlocks 100-69 and removes chain from valve handwheel	Pass/Fail
	Rotates 100-69 handwheel CCW to open valve	Pass/Fail
Cue: Once candidate has opened 100-69, report that EC M/U Tank 11 level is 10 feet	Observes Makeup tank level	Sat/Unsat
	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
	Rotates 100-69 handwheel CW to close the valve	Sat/Unsat

Terminating Cue: Emergency Condenser Makeup Tanks filled to 10 feet using the Electric Fire Pump.

RECORD STOP TIME _____

Initial Conditions:

1. The plant was operating at 100% power.
2. A control room evacuation has occurred.
3. Emergency Condenser Makeup Tank levels are low at 6 feet.
4. Emergency Condenser Makeup cross-connect valve, 60-13, has failed closed.

Initiating Cue:

“(Operator’s name), raise Emergency Condenser Makeup Tank levels to 10 feet using the Diesel Fire Pump, in accordance with N1-SOP-21.2, Attachment 5.”

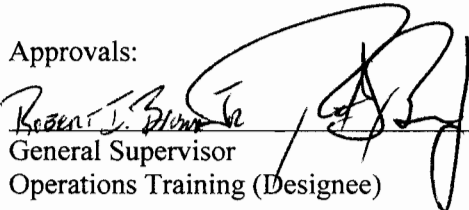
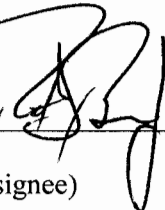
NRC JPM P-2
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Transfer UPS Loads from UPS162A to 162B

Revision: NRC 2010

Task Number: N/A

Approvals:

 /  / 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A – Exam Security /
General Supervisor Date
Operations (Designee)

N/A – Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: _____ Perform _____ X Simulate

Evaluation Location: X Plant _____ Simulator

Expected Completion Time: 20 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

TB 261' between EDG Room and Aux Control Room

Simulator Set-up (if required):

None

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, the use of applicable methods of verification and checking are expected. Therefore, either another individual or I will act as the independent verifier or peer checker.

Notes to Instructor / Evaluator:

1. Critical steps are identified in grading areas **Pass/Fail**. All steps are sequenced critical unless denoted by a "•".
2. During Evaluated JPM:
 - Self checking shall be demonstrated.
3. During Training JPM:
 - Self checking shall be demonstrated.
 - Peer checking shall be demonstrated.

References:

1. NUREG 1123, 212000, A2.02, RO 3.7, SRO 3.9
2. N1-OP-40

Tools and Equipment:

None

Task Standard: RPS Bus 11 transferred from UPS 162A to UPS 162B.

Initial Conditions:

1. The plant is operating at 100% power.
2. UPS 162A is in service supplying RPS Bus 11.
3. UPS 162B is in standby.
4. The Electrical Safety requirements for the upcoming job have been determined to be as follows:
 - Leather gloves
 - Safety glasses or goggles
 - 100% cotton long sleeve shirt and pants, OR 100% cotton short sleeve shirt and pants under flame-resistant lab coat
5. Instructor to ask operator for any questions.

Initiating Cues:

“(Operator’s name), transfer RPS Bus 11 from UPS 162A to UPS 162B per N1-OP-40 section F.1.0.”

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-O1)	Sat/Unsat

RECORD START TIME _____

1. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-OP-40 obtained, precautions & limitations reviewed & section F.1.0 referenced	Sat/Unsat
3. Notify Control Room that RPS Bus 11 will be transferred from UPS 162A to UPS 162B	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat
4. At UPS 162B, verify UPS 162B in standby by observing the following: <ul style="list-style-type: none">• Rectifier Output (A404) approximately 40 amps• Battery DC Input (A1) 0 amps• Inverter Voltage (V2) \geq 120 VAC• Static Switch Output (V202) \geq 120 VAC	At UPS 162B, verify UPS 162B in standby by observing the following: <ul style="list-style-type: none">• Rectifier Output on Rectifier Bay 1 reading 40 amps• Battery DC input on Inverter Bay 2 reading 0 amp• Inverter output on Inverter Bay 3 reads 120 VAC• Static Switch Output on Static Bay 4 reads 120 VAC	<div>Sat/Unsat</div> <div>Sat/Unsat</div> <div>Sat/Unsat</div> <div>Sat/Unsat</div>

Performance Steps	Standard	Grade
Cue: Provide the following parameter values to the candidate: <ul style="list-style-type: none"> • A404 = 40 amps • A1 = 0 amps • V2 = 120 VAC • V202 = 120 VAC 		
6. Place Synchroscope Control (S701) in ON position and confirm the following:	On Manual Transfer Cabinet, places Synchroscope Control toggle switch in ON	Pass/Fail
<ul style="list-style-type: none"> • UPS A Volts To Synchroscope V701 approximately 120 VAC 	Observes UPS A Volts to left of sync switch	Sat/Unsat
<ul style="list-style-type: none"> • UPS B Volts To Synchroscope V702 approximately 120 VAC 	Observes UPS B Volts to right of sync switch	Sat/Unsat
Cue: UPS A Volts = 120 VAC UPS B Volts = 120 VAC		
Note: There is not expected to be a frequency or phase difference between UPS A and UPS B. Therefore, the operator should expect the synchroscope to be at the 12 o'clock position.		
Cue: Synchroscope is at the 12 o'clock position		
6. If synchroscope is NOT within 10 degrees of the 12 o'clock position, then contact Electrical Maintenance to perform adjustment.	Observes synchroscope on Manual Transfer Cabinet	Sat/Unsat
	Marks step N/A	Sat/Unsat
7. When needle of synchroscope is within 10 degrees of 12 o'clock position, then place Manual Transfer Switch (S702) to the UPS B Supplying Load position.	Observes synchroscope	Sat/Unsat
	Firmly rotates switch counterclockwise to the UPS B Supplying Load protection	Pass/Fail
Note: Operation of the manual transfer switch is a two handed operation		
8. Confirm load transfer by observing the following:	At the Manual Transfer Cabinet, observes the following:	
<ul style="list-style-type: none"> • UPS A Supplying Load Light OFF AND/OR	9 UPS A Supply Load Light extinguished	Sat/Unsat/ NA
<ul style="list-style-type: none"> • UPS 162A Static Switch Output (A202) 0 amps 	9 On Static Switch Bay 4 for UPS, Static Switch Output ammeter for UPS 162A at 0 amps	Sat/Unsat/ NA
Cue: UPS A Supply Light is extinguished, A202 on UPS 162A = 0 amps		

Performance Steps	Standard	Grade
<ul style="list-style-type: none"> • UPS B Supplying Load Light ON <p>AND/OR</p> <ul style="list-style-type: none"> • UPS 162B Static Switch Output (A202) approximately 80-90 amps 	9 Observe UPS B Supply Load Light extinguished 9 Observe Static Switch Output ammeter for UPS 162B at 0 amps	Sat/Unsat/NA Sat/Unsat/NA
Cue: UPS B Supplying Light extinguished, A202 on UPS 162B = 0 amps		
9. Verify no unanticipated annunciators or computer points present due to UPS 162B supply power	Contacts Control Room to verify no unanticipated annunciators or computer points were received, proper communications used (GAP-OPS-01)	Sat/Unsat
Role Play: No unanticipated annunciators or computer points were received.		
10. Place Synchroscope Control (S701) in OFF position	On Manual Transfer Cabinet, places Synchroscope Control toggle switch in OFF	Sat/Unsat
11. Place "Standby UPS" sign on 162A Power Supply	Moves magnetic sign from 162B Power Supply to 162A Power Supply	Sat/Unsat
12. Notify Control Room transfer complete	Proper communication used (GAP-OPS-01)	Sat/Unsat

Terminating Cue: Transfer of RPS Bus 11 from UPS 162A to UPS 162B is complete.

RECORD STOP TIME _____

Initial Conditions:

1. The plant is operating at 100% power.
2. UPS 162A is in service supplying RPS Bus 11.
3. UPS 162B is in standby.
4. The Electrical Safety requirements for the upcoming job have been determined to be as follows:
 - Leather gloves
 - Safety glasses or goggles
 - 100% cotton long sleeve shirt and pants, OR 100% cotton short sleeve shirt and pants under flame-resistant lab coat

Initiating Cues:

“(Operator’s name), transfer RPS Bus 11 from UPS 162A to UPS 162B per N1-OP-40 section F.1.0.”

NRC JPM P-3
Constellation Energy Nuclear Group
NINE MILE POINT UNIT 1
OPERATOR JOB PERFORMANCE MEASURE

Title: Inject Boron Into the Reactor Using the Hydro Pump

Revision: NRC 2010

Task Number: N/A

Approvals:

Robert J. Blumie / ABJ / 9/7/2010
General Supervisor Date
Operations Training (Designee)

N/A – Exam Security /
General Supervisor Date
Operations (Designee)

N/A – Exam Security /
Configuration Control Date

Performer: _____ (RO/SRO)

Trainer/Evaluator: _____

Evaluation Method: Simulate

Evaluation Location: Plant

Expected Completion Time: 25 minutes Time Critical Task: No Alternate Path Task: No

Start Time: _____ Stop Time: _____ Completion Time: _____

JPM Overall Rating: Pass Fail

NOTE: A JPM overall rating of fail shall be given if any critical step is graded as fail. Any grade of unsat or individual competency area unsat requires a comment.

Comments:

Evaluators Signature: _____

Date: _____

Recommended Start Location: (Completion time based on the start location)

Reactor Building Elev. 281

Simulator Set-up (if required):

None

Directions to the Instructor/Evaluator:

Prior to performance of this JPM, obtain SM / CRO general permission to open equipment cabinets and inspection covers. If opening the equipment cabinet or inspection cover will affect Tech. Spec. Operability, operational status, or the effects are unknown, obtain specific SM / CRO permission.

Directions to Operators:

Read Before Every JPM Performance:

For the performance of this JPM, I will function as the SM, CRO, and Plant Operators. 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.

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.

Read Before Each Evaluated JPM Performance:

This evaluated JPM is a measure of your ability to perform this task independently. The Control Room Supervisor has determined that a verifier is not available and that additional / concurrent verification will not be provided; therefore, it should not be requested.

Read Before Each Training JPM Performance:

During this Training JPM, applicable methods of verification are expected to be used. Therefore, either another individual or I will act as the independent/peer verifier.

Notes to Instructor / Evaluator:

1. Critical steps are identified as **Pass/Fail**. All steps are sequenced critical unless denoted by a “•”.
2. During Evaluated JPM:
 - Self verification shall be demonstrated.
3. During Training JPM:
 - Self verification shall be demonstrated.
 - (Independent/Peer/No other) verification shall be demonstrated.

References:

1. NUREG 1123, 295037, EA1.10, RO 3.7, SRO 3.9
2. N1-EOP-3
3. N1-EOP-3.2, Attachment 1

Tools and Equipment:

None

Task Standard: Boron is being pumped into the Reactor vessel using the Hydro pump.

Initial Conditions:

1. N1-EOP-3 has been entered due to a failure to scram.
2. An RO has tried to initiate Liquid Poison from the Control Room but the pumps will not start.
3. RWCU has isolated.
4. Radiation Protection is providing continuous monitoring of your activities.
5. Instructor to ask operator for any questions.

Initiating Cues:

“(Operator’s name), lineup and inject boron using the Hydro Pump per N1-EOP-3.2, Alternate Boron Injection, Attachment 1.”

Performance Steps	Standard	Grade
1. Provide repeat back of initiating cue. <i>Evaluator Acknowledge repeat back providing correction if necessary</i>	Proper communications used for repeat back (GAP-OPS-01)	Sat/Unsat

RECORD START TIME _____

2. Obtain a copy of the reference procedure and review/utilize the correct section of the procedure	N1-EOP-3.2 obtained, Attachment 1 referenced	Sat/Unsat
3. Verify RWCU system is isolated	Determines RWCU system is isolated per initial conditions	Sat/Unsat
4. Notify Rad Protection to provide continuous monitoring	Determines Rad Protection is providing continuous monitoring per initial conditions	Sat/Unsat

Cue: Once EOP Box 2 is located, prompt candidate to simulate opening the box and describe the equipment to be used.

5. Connect air supply hose from 95-157, BV-HSA to Alternate Boron Injection System (in overhead above Hydro Pump area), to the Hydro pump	Indicates location of 95-157 Attaches one end of air supply hose to Hydro pump air inlet line	Pass/Fail Pass/Fail
---	--	--

Note: 95-157 is in the overhead above a small platform. It is not desired for the candidate to access the valve, since this would require RP coverage for work above 6 feet. Successful completion of this JPM step will be for the candidate to indicate the general location of the valve.

Cue: Once candidate indicates location of 95-157, report that the air supply hose is connected to 95-157

Performance Steps	Standard	Grade
6. Connect high-pressure hose to discharge of Hydro pump	Connects one end of hose to discharge of Hydro pump	Pass/Fail
7. Connect 2" hose from hose connection downstream of 89-20, Drain – Liquid Poison Tank, to suction of Hydro pump	Connects one end of hose to hose connection downstream of 89-20	Pass/Fail
	Connects other end of hose to suction of Hydro pump	Pass/Fail
8. Unlock and verify closed 89-21, Drain – LP Tank to 55 Gal Drum	89-21 is unlocked	Pass/Fail
	89-21 is closed by rotating handwheel fully clockwise	Pass/Fail
9. Unlock and close 42-13, BV-LP Squibb Vlv 11 Outlet	42-13 (LP-11) is closed by unlocking and turning handwheel fully clockwise (RB Elev. 298')	Sat/Unsat
10. Unlock and close 42-14, BV-LP Squibb Vlv 12 Outlet	42-14 (LP-10) is closed by unlocking and turning handwheel fully clockwise (RB Elev. 298')	Sat/Unsat
11. Unlock and open 41-04, Drain – Liquid Poison Tank	41-04 (LP-701) is opened by unlocking and turning handwheel fully counter-clockwise	Pass/Fail
12. Unlock and open 89-20, Drain – Liquid Poison Tank	89-20 is opened by unlocking and turning handwheel fully counter-clockwise	Pass/Fail
13. Verify Hydro Pump Air inlet Valve closed	Hydro pump air inlet valve is closed by verifying handwheel is rotated fully clockwise (at Hydro pump)	Sat/Unsat
14. Adjust regulator fully clockwise	Rotates regulator fully clockwise	Sat/Unsat
15. Depress outer collar of adjusting knob downward to lock pressure setting	Depresses outer collar of adjusting knob downward	Sat/Unsat
16. Connect high pressure hose (from Hydro pump discharge) to hose connection upstream of 42-10, Drain – LP Sys Hdr Before Ck Vlvs - 2nd	Connects other end of hose previously attached to Hydro pump discharge to hose connection upstream of 42-10	Pass/Fail
17. Unlock and open valve 42-10, Drain – LP SYS HDR BEFORE CK VLVS – 2ND.	42-10 (LP-708) is opened by unlocking and turning handwheel fully counter-clockwise (RB Elev. 281)	Pass/Fail
18. Unlock and open valve 42-09, Drain – LP SYS HDR BEFORE CK VLVS – 1ST.	42-09 (LP-707) is opened by unlocking and turning handwheel fully counter-clockwise (RB Elev. 281)	Pass/Fail

<u>Performance Steps</u>	<u>Standard</u>	<u>Grade</u>
19. Open 95-157, BV-HSA to Alt Boron Injection System	Proper communications used (GAP-OPS-01)	Sat/Unsat
<p><u>Note:</u> 95-157 is in the overhead above a small platform. It is not desired for the candidate to access the valve, since this would require RP coverage for work above 6 feet.</p> <p><u>Cue:</u> Report that 95-157 has been opened by another operator</p>		
20. Open hydro pump Air Inlet BV	Air inlet valve is opened by turning handwheel counter-clockwise	Pass/Fail
<p><u>Cue:</u> Hydro pump is running and indicating proper discharge pressure</p>		
21. Notifies Control Room liquid poison being injected with the Hydro Pump.	Proper communications used (GAP-OPS-01)	Sat/Unsat

RECORD STOP TIME _____

Initial Conditions:

1. N1-EOP-3 has been entered due to a failure to scram.
2. An RO has tried to initiate Liquid Poison from the Control Room but the pumps will not start.
3. RWCU has isolated.
4. Radiation Protection is providing continuous monitoring of your activities.

Initiating Cues:

“(Operator’s name), lineup and inject boron using the Hydro Pump per N1-EOP-3.2, Alternate Boron Injection, Attachment 1.”

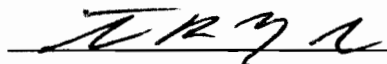

NMP SIMULATOR SCENARIO

NRC Scenario 1

REV. 0

No. of Pages: 24

EPR Oscillation, Loss of PB 102, 16B and 16A, Seismic Event with Steam Leak and Torus Leak

PREPARER	<u></u>	DATE <u>9/2/10</u>
VALIDATED	<u>Mazuroski, Alfieri, Revelle</u>	DATE <u>7/20/10</u>
GEN SUPERVISOR OPS TRAINING	<u></u>	DATE <u>9/2/2010</u>
OPERATIONS MANAGER	<u>N/A – Exam Security</u>	DATE _____
CONFIGURATION CONTROL	<u>N/A – Exam Security</u>	DATE _____

SCENARIO SUMMARY

Length: 90 minutes

Initial Power Level: Approximately 85%

The scenario begins at 85% power following a rod pattern adjustment. APRM 14 is bypassed for a gain adjustment. The crew is to place APRM 14 back in service per N1-OP-38C. The crew will then raise power using recirculation flow in accordance with a Reactivity Maneuver Instruction.

Then, the EPR will begin to slowly oscillate, requiring the crew to enter N1-SOP-31.2 and place the MPR in service. The CRS will address the thermal limit implications of loss of the backup pressure regulator. Next, Powerboard 102 will develop a fault. The crew will take actions to investigate the loss of the powerboard and to reenergize Powerboard 16B from Powerboard 16A and restore loads. When Powerboard 16A is reenergized, a fault will develop on the powerboard. This will result in a loss of three Drywell cooling fans. The crew will start an additional Drywell cooling fan to address rising Containment temperatures. The CRS must assess the impact of the equipment that is lost and enter Technical Specifications.

Next, the seismic event annunciator alarms. The crew responds using the alarm response procedure and N1-SOP-28. Simultaneously with the seismic monitor alarm, a line break will occur in the Drywell causing slowly rising Drywell pressure, temperature and humidity. Deteriorating Drywell conditions will require a manual scram. The crew will enter N1-EOP-2, RPV Control, and N1-EOP-4, Primary Containment Control. The crew will initiate Containment Spray when Torus pressure exceeds 13 psig (**Critical Task**).

Once Containment Spray is initiated, an aftershock will cause a break in the Torus. The crew must diagnose that Torus water level is lowering. The crew may attempt to add water to the Torus. Makeup to the Torus will be unavailable due to plant conditions. If Containment Spray Raw Water pump 121 is lined up for Torus makeup, it will trip after a time delay. As Torus level lowers, the crew must enter N1-EOP-8, RPV Blowdown, and RPV pressure must be lowered using ERVs or alternate Blowdown systems (**Critical Task**).

Major Procedures: N1-SOP-31.2, N1-SOP-1.1, N1-SOP-1, N1-EOP-1, N1-EOP-2, N1-EOP-4, and N1-EOP-8

Dynamic Mitigation Strategy Code: PC2, RPV Blowdown due to Low Torus Water Level

EAL Classification: Alert EAL 3.1.1 – High Drywell Pressure
Alert EAL 8.4.4 – Earthquake > 0.075g (If given report from Unit 2 seismic instrumentation.)

(Based on Emergency Director judgement, Site Area Emergency EAL 9.1.6 - Loss of Primary Containment Integrity with Loss of Rx Coolant Pressure Boundary if possible)

Termination Criteria: RPV water level controlled in assigned band, RPV Blowdown in progress, Primary Containment pressure maintained per EOP-4

I. SIMULATOR SET UP

A. IC Number: IC-151

B. Presets/Function Key Assignments

1. Malfunctions:

- | | |
|--|--------|
| a. RD35A, CRD Hydraulic Pump 11 Trip | PRESET |
| b. TC06, Electrical Pres. Regulator Fails – Oscillates | TRG 1 |
| c. ED07, PB 102 Electrical Fault | TRG 2 |
| d. ED12A, PB 16A Electrical Fault, DT=30 | TRG 3 |
| e. PC05, Seismic Event Triggered | TRG 4 |
| f. EC01, Steam Supply Line Break in PC, DT=3:00, FV=12 | TRG 4 |
| g. PC04, Torus Water Leak, DT=10, FV=25 | TRG 5 |
| h. CT02C, CT Raw Water Pump 121 Trip, DT=45 | TRG 23 |
| i. AD07A, ERV 111 Fails Closed | PRESET |

2. Remotes:

- a. None

3. Overrides:

- a. None

4. Annunciators:

- a. None

5. Triggers:

- a. TRG 3 – Inserts fault on PB 16A when R1042 is taken to close position
 - i. Event Action: zded602c==1
 - ii. Command: None
- b. TRG 5 – Inserts second seismic event and Torus leak when Containment Spray flow is initiated
 - i. Event Action: ctfdw>300
 - ii. Command: None
- c. TRG 20 – Raises severity level of steam leak after the mode switch is taken to shutdown
 - i. Event Action: zdrpstdn==1
 - ii. Command: imf ec01 (0 0) 30 4:00 12
- d. TRG 21 – Runs batch file to setup second seismic event when Drywell pressure exceeds 12.5 psig
 - i. Event Action: dwpgas>27.2

- ii. Command: bat n10scen1trg21.bat
- e. TRG 22 – Adjusts Torus leak rate once Torus water level lowers below 10.4 feet
 - i. Event Action: trlevel<10.4
 - ii. Command: imf pc04 (0 0) 10
- f. TRG 23 – Trips Containment Spray Raw Water pump 121 45 seconds after it is started
 - iii. Event Action: hzlctpmp(14)==1
 - iv. Command: None
- C. Equipment Out of Service
 - 1. CRD pump 11 in PTL with yellow tag
 - 2. APRM 14 bypassed with no tag
- D. Support Documentation
 - 1. RMI for power ascension with recirculation flow
- E. Miscellaneous
 - 1. Ensure Drywell cooling fan 11 is secured with control switch in neutral
 - 2. Ensure batch file “n10scen1trg21.bat” is in the root batch file directory with the following commands:
 - a. dmfc pc05
 - b. irf pc16 (0 0) reset
 - c. imf pc05 (5 10) true
 - 3. Protect the following equipment: CRD pump 12 control switch, R-1053, R-1052
 - 4. Update Divisional Status Board

II. SHIFT TURNOVER INFORMATION

OFF GOING SHIFT: ☐ N ☒ D

DATE: Today

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

- Control Panel Walkdown (all panels) (SM, CRS, STA, RO, CRE)

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

- Shift Manager Log (SM, CRS, STA)
- RO Log (RO)
- Lit Control Room Annunciators (SM, CRS, STA, RO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (RO)

Evolutions/General Information/Equipment Status:

- Reactor Power is approximately 85%
- CRD pump 11 is out of service for repairs (Day 1 of planned 2 day window; 7 day LCO per TS 3.1.6.b)
- APRM 14 is bypassed, gain adjustments have just been completed

PART III: Remarks/Planned Evolutions:

1. Return APRM 14 to service using N1-OP-38C, Sect. H.2.0.
2. Increase Reactor power with recirculation flow per RMI.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

ATTACHMENT 2: REACTIVITY MANEUVER INSTRUCTION

Reactivity Maneuver: Power Ascension to Rated

Step: 1

INITIAL CONDITIONS/STEP DESCRIPTION							
RE presence required in the Control Room? Yes ___ No <u>✓</u> If YES above, RE presence not required for steps _____. Initial conditions to be verified prior to initiation of step:							
Parameter	Expected Range	Actual	Parameter	Expected Range	Actual		
CTP	1550 – 1590 MWth						
Description of Step: 1. Raise reactor power to 98% CTP with recirculation flow (1800 - 1813 MWth) over 30 minutes. 2. Raise reactor power to rated (98% to 100%) over one hour.							
Critical parameters to be monitored DURING Step: Critical parameters not used must be deleted OR marked N/A							
Critical Parameter	Limit	Owner	Frequency	Contingency			
CTP	1850 MWth	RO	Continuous	Lower recirculation flow			
RMI evaluated against approved power profile: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> .							
Other Comments:							
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="display: flex; justify-content: space-between; width: 100%;"> RE/STA Date </div> </td> <td style="width: 50%; vertical-align: top;"> Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="display: flex; justify-content: space-between; width: 100%;"> RE/STA/SRO Date </div> </td> </tr> </table>						Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="display: flex; justify-content: space-between; width: 100%;"> RE/STA Date </div>	Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="display: flex; justify-content: space-between; width: 100%;"> RE/STA/SRO Date </div>
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Critical Tasks:

- CT-1.0 Given a LOCA in the Drywell, the crew will initiate Containment Sprays prior to exceeding the Pressure Suppression Pressure limit, in accordance with N1-EOP-4.
- CT-2.0 Given a lowering Torus water level, the crew will execute N1-EOP-8, RPV Blowdown, when it is determined Torus water level cannot be maintained above eight (8) feet, in accordance with N1-EOP-4.

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

Take the simulator out of freeze before the crew enters for the pre-shift walkdown and briefing.
Allow no more than 5 minutes for panel walkdown.

Event 1 - Place APRM 14 in Service

OPERATOR ACTIONS

CREW

- Conducts pre-brief, walks down the panels, assumes the shift

SRO

- Directs restoration of APRM 14 per OP-38C, Sect H.2.0
- Provides oversight for evolution

RO

- Reviews OP-38C, Sect H.2.0
- Verifies no trip signals present
- Places APRM BYPASS switch in neutral position
- Confirms APRM BYPASS light is OFF on Panel E
- Confirms computer printout "APRM____BYPASS NO"
- Confirms APRM BYPASS light is OFF on the LPRM-APRM drawer

BOP

- Monitors plant parameters

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 2 - Raise Power with Recirculation Flow

Note: In order for event 3 to result in a thermal limit penalty, the EPR oscillation must be inserted below 90% power.

SRO

- Directs power ascension with recirculation flow in accordance with OP-43B and the Reactivity Maneuver Instruction (RMI)
- Provides oversight of reactivity maneuver

RO

- Acknowledges direction from SRO
- Raises recirculation flow with master recirculation flow controller
- Monitors APRMs
- Monitors recirculation flow
- Monitors Feedwater flow and RPV water level

BOP

- Monitors individual RRP's 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")

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 3 - EPR Oscillations

When directed by lead examiner, **insert malfunction:**

TC06, Electrical Pres. Regulator Fails – Oscillates

TRG 1

EPR servo stroke oscillates

Reactor power and pressure oscillate

Expected Annunciator:

A2-4-4, Turbine Mechanical Press. Reg. In Control

Role Play:

If contacted as Reactor Engineering, acknowledge request to analyze thermal limits for operation without a backup pressure regulator.

CREW

- Acknowledges / reports annunciator A2-4-4
- Observes Reactor power and pressure oscillations
- Diagnoses EPR oscillations

SRO

- Acknowledges report from crew
- May direct execution of ARP A2-4-4
- May direct entry into SOP-1.5, Unplanned Power Changes
- Directs execution of SOP-31.2, Pressure Regulator Malfunctions
- References COLR restrictions for operation without a backup pressure regulator
- Determines thermal limit penalty must be applied to MCPR and LHGR limits with power between 45% and 90%
- Announce or brief crew on the change to MCPR and LHGR limits.

RO

- Executes SOP-31.2, Pressure Regulator Malfunctions
- Determines EPR was originally in control
- Determines pressure is oscillating
- May lower MPR setpoint until MPR is in control

Event 3 continued

RO continued

- Raises the EPR setpoint to 1010 psig
- Works with BOP to return Reactor pressure to pre-transient value by adjusting MPR setpoint, as time permits

BOP

- Monitors plant parameters
- Works with RO to return Reactor pressure to pre-transient value, as time permits

Event 4 - Power Board 102 Electrical Fault

When directed by lead examiner, **insert
malfunction:**

ED07, PB 102 Electrical Fault

TRG 2

Powerboard 102 and 16B voltage lower to zero

EDG 102 starts but does not close on bus

Major expected annunciators:

A4-1-6, PB 102 Bus Voltage Low

A4-1-8, Trans 101N Aux Fdr 102 R1012 Trip

A4-4-2, PB 16 Low Bus Voltage

K3-4-3, PB 16 Bkr Lockout Relay 86-16

CREW

- Diagnose/report loss of PB 102 and 16B

SRO

- Acknowledges reports
- Directs execution of ARP A4-1-6
- Directs shutdown of EDG 102
- Reviews Technical Specifications
- Determines limiting Technical Specifications are:
 - TS 3.1.5, 10 hour shutdown LCO for ADS
 - TS 3.2.7, 10 hour shutdown LCO for Coolant Isolation Valves

Event 4 continued

Role Play: If dispatched as operator to PB 102, wait 3 minutes and report R1012 tripped on overcurrent.

Role Play: If dispatched to check PB 16B, wait 2 minutes and report that Maintenance reports PB 16B appears free of faults.

Role Play: If directed to verify EDG 102 shutdown wait 2 minutes and report EDG 102 is shutdown with no apparent damage.

Note: Scenario continues automatically with Event 5 when R1042 control switch is taken to close. If crew does not crosstie PB 16, examiner may direct manual insertion of TRG 3.

RO

- Monitors plant parameters

BOP

- Executes ARP A4-1-6
- Determines PB 102 cannot be re-energized
- Places breaker R1012 in PTL
- Places EDG 102 control switch in emergency stop
- Verifies CRD pump 12 running
- Verifies RBCLC header pressure >40 psig (May start additional RBCLC pump)
- Resets 86-16
- Verifies open R1043
- Closes R1042

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 5 - Power Board 16A Electrical Fault

The following **malfunction** is **automatically inserted** when R1042 control switch is taken to close (or manually inserted as directed by lead examiner):

ED12A, PB 16A Electrical Fault, DT=30

TRG 3

Powerboard 16A and 16B voltage lower to zero

Three Drywell cooling fans trip

Containment temperature and pressure slowly rise

Major expected annunciators:

A4-3-1, Power Bd 16 R1041 Trip

A4-4-2, Power Bd 16 Low Bus Voltage

L1-4-4, Drywell - Torus Temp High

L4-3-6, Drywell Cooling Fan Trip-Vib

Note: If RBCLC pump 12 was not started in the last event, RBCLC flow will be lost in this event. This will lead to a RWCU isolation.

Note: Procedural guidance for starting Drywell cooling fan 11 may come from either OP-8 via the ARPs, or directly from EOP-4.

CREW

- Diagnose/report loss of PB 16A and 16B
- Diagnose/report loss of three Drywell cooling fans
- Diagnose/report rising Containment temperature and pressure

SRO

- Acknowledges reports
- Directs execution of ARPs
- If Drywell average temperature exceeds 150°F, enters EOP-4
 - Directs lockout of Containment Spray pumps
- May direct emergency power reduction per SOP-1.1
- May direct start of RBCLC pump 12
- Directs start of Drywell cooling fan 11
- Reviews Technical Specifications, determines loss of EDG 102 auxiliaries, LP pump 11, and ESW pump 11 all lead to less restrictive LCOs than those of event 4
- May enter N1-SOP-6.1, Loss of SFP/RX Cavity Level/Decay Heat Removal

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 5 continued

Role Play: If dispatched as operator to PB 16, wait 2 minutes and report R1041 tripped on overcurrent.

Role Play: If dispatched as operator to investigate/restore SFP Cooling, acknowledge order but delay any action.

RO

- Monitors plant parameters
- Lowers power using Recirc flow per N1-SOP-1.1, as required

BOP

- Executes ARPs
- Determines Powerboards 16A and 16B cannot be re-energized
- May start RBCLC pump 12
- Starts Drywell cooling fan 11
- Green flags Drywell cooling fan 13, 14, and 15 control switches to clear L4-3-6.
- Starts RBCLC Pump
- Reports Containment pressure and temperature
- If Drywell average temperature exceeds 150°F, locks out Containment Spray pumps
- Starts Condensate Transfer Pump 12
- May enter N1-SOP-6.1, Loss of SFP/RX Cavity Level/Decay Heat Removal and direct an operator to investigate SFP Cooling.

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 6 - Seismic Event and Steam Leak

Requiring a Scram on Rising Drywell Pressure

When directed by the lead examiner, insert
malfunctions:

PC05, Seismic Event Triggered

**EC01, Steam Supply Line Break in PC, DT=3:00,
FV=12**

TRG 4

*Drywell pressure, temperature, humidity and leak
rate increase*

Expected Annunciators:

H2-1-6, Seismic Detection Equipment Event

K2-4-3, Drywell Pressure High-Low

F1-1-5, RPS Ch 11 Drywell Press High

F4-1-4, RPS Ch 12 Drywell Press High

Note: The Reactor may automatically scram on
Drywell High Pressure.

CREW

- Diagnose/report seismic annunciator
- Diagnose/report leak in the
Containment

SRO

- Acknowledges report of seismic event
- Directs execution of SOP-28, Seismic
Event
- Acknowledges report of degrading
Containment parameters
- Directs Crew to monitor containment
parameters
- May direct emergency power
reduction per SOP-1.1
- Directs Reactor scram
- Acknowledges scram report

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 6 continued

Note: Verify the following **malfunction** is **automatically adjusted** when the mode switch is taken to SHUTDOWN:

EC01, Steam Supply Line Break in PC, RT=4:00, IV=12, FV=30

Note: May not prevent Core Spray injection until RPV pressure is reduced for the Torus leak in event 7. May direct Core Spray pumps placed in PTL if needed before EOP-1 attachment 4 jumpers can be installed due to scenario progression and resource limitations. If Core Spray pumps are placed in PTL, at least one Core Spray pump should be restarted after jumper installation for App J water seal.

Note: When Drywell pressure exceeds 12.5 psig, verify the following are **automatically loaded**:

Remote PC16, Seismic Mon Pnl Event Light

Reset, FV=reset

Malfunction PC05, Seismic Event Triggered, DT=10, on TRG 5

SRO continued

- Enters EOP-2, RPV Control on low RPV water level and high Drywell pressure/temperature
- Answers "Are all control rods inserted to at least position 04?" YES
- Directs entry into SOP-1, Reactor Scram
- Directs RPV water level control 53-95" using Feedwater/Condensate and CRD
- Directs RPV pressure control, as required
- May direct MSIVs closed to minimize cooldown rate
- Enters EOP-4, Primary Containment Control, on high Drywell pressure and temperature
- Directs lockout of Containment Spray pumps
- May direct preventing Core Spray injection not needed for core cooling per EOP-1 attachment 4
- When Torus pressure exceeds 13 psig or as Drywell temperature approaches 300°F:
 - Answers "Below the Containment Spray Initiation Limit?" YES
 - Directs verification of Recirc pumps tripped
 - Directs Drywell cooling fans tripped

Event 6 continued

SRO continued

- **Directs initiation of Containment Spray per EOP-1 attachment 17 (CT-1.0)**
- Monitors Pressure Suppression Pressure limit

RO

- When directed, lowers reactor power using recirc flow per SOP-1.1
- Places Reactor Mode Switch to SHUTDOWN
- 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 10⁶ lbm/hr
- Verifies main turbine and generator tripped
- Monitors RPV pressure

BOP

- Executes SOP-28, Seismic Event
- May confirm seismic event indicator on J panel

Event 6 continued

Role Play: If contacted as Unit 2 or JAF, report that you have also experienced a seismic event and that you have confirmed the seismic event with JAF or Unit 2 (as appropriate). Report that Unit 2 seismic recorders indicated 0.09g.

BOP continued

- May:
 - Contacts Unit 2 and JAF to confirm seismic event
 - Notifies I&C to interpret seismic data
 - Dispatches operators to inspect plant equipment for damage
 - Monitors Drywell instrumentation
- Performs RPV water level control actions of SOP-1:
 - Restores RPV water level to 53-95" by controlling injection and rejecting through RWCU, as necessary
 - 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

Event 6 continued

Note: Containment Spray pumps 111 and 112 are unavailable due to loss of Powerboard 102

BOP continued

- 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
 - Maximizes RWCU reject flow
 - Closes FWIVs if required
 - Closes MSIVs if required
- Maintains RPV water level in assigned band

RO/BOP

- Closes MSIVs as directed
- Reports when Torus pressure exceeds 13 psig or Drywell temperature approaches 300°F
- Verifies Recirc pumps tripped
- Trips Drywell cooling fans
- Initiates Containment Spray per N1-EOP-1 attachment 17
- **Verifies started Containment Spray pumps 121 and 122 (CT-1.0)**
- Reports Drywell pressure lowering

**Events 7, 8 and 9 - Second Seismic Event and
Torus Leak, Trip of Containment Spray Raw
Water Pump 121, ERV 111 Fails to Open**

Verify the following **malfunctions** are
automatically inserted when Containment Spray
flow is initiated:

PC05, Seismic Event Triggered, DT=10

PC04, Torus Water Leak, DT=10, FV=25

TRG 5

Torus water level slowly lowers

Torus room water level slowly rises

Expected Annunciators:

K3-3-1, Torus Water Level High - Low

*H2-2-1, R Bldg FI Dr Sumps 11-16 Area Wtr Lvl
Level High*

Verify the following **malfunction** is **preset**:

**AD07A, ERV 111 Fails Closed (Burned Out
Solenoid)**

ERV 111 fails to open

Verify the following **malfunction** is **automatically
inserted** if Containment Spray Raw Water pump
121 is started:

CT02C, CT Raw Water Pump 121 Trip, DT=45

TRG 23

*Containment Spray Raw Water pump 121 trips
after 45 seconds if started*

CREW

- Diagnose/report second seismic event
- Diagnose/report Torus water level is lowering

INSTRUCTOR ACTIONS/ PLANT RESPONSE

OPERATOR ACTIONS

Events 7, 8 and 9 continued

Note: Torus makeup will be unavailable. EOP-1 attachment 6 (low capacity makeup from Core Spray Keep-Fill) is unavailable because Core Spray is running due to high Drywell pressure. EOP-1 attachment 18 (high capacity makeup from Containment Spray Raw Water) is unavailable due to earlier electrical power losses and the trip of Containment Spray Raw Water pump 121. Additionally, the crew may determine based on the rate of Torus water level lowering, that makeup will not be able to reverse the trend and immediately proceed to RPV Blowdown.

Note: Verify the following **malfunction** is **automatically adjusted** when Torus water level lowers below 10.4 feet:

PC04, Torus Water Leak, FV=10

Note: If MSIVs have been previously closed to limit cooldown rate, they may be reopened in order to use TBVs as an alternate Blowdown system

SRO

- Acknowledges reports
- Re-enters EOP-4 on low Torus water level
- May enter EOP-5 on Hi Sump Level
- Evaluates ability to add water to the Torus per EOP-1 attachments 6 & 18
- Determines Torus makeup is unavailable due to plant conditions
- May direct rapid depressurization of RPV with ECs and/or TBVs in anticipation RPV Blowdown
- Before Torus water level drops to 8 feet, re-enters EOP-2, RPV Control
- Determines Torus water level cannot be maintained above 8 feet
- **Enters EOP-8, RPV Blowdown (CT-2.0)**
 - Answers "Are all control rods inserted to at least position 04?"
YES
 - Answers "Drywell pressure?" At or above 3.5 psig
 - Directs prevention of Core Spray injection not needed for core cooling per EOP-1 attachment 4, if not previously performed
 - Directs EC initiation
 - If Torus water level is above 8 feet, directs open 3 ERVs
 - If Torus water level is at or below 8 feet, directs rapid RPV depressurization using Blowdown Systems (Detail O)

Events 7, 8 and 9 continued

Role Play: If directed to investigate the Torus leak, wait 2 minutes then report no water in the Corner Rooms, but can hear leak inside the Torus Room.

RO/BOP

- May evaluate ability to add water to the Torus per EOP-1 attachments 6 and/or 18
- If attempts to lineup Containment Spray Raw Water for Torus makeup:
 - If operating, secures Containment Spray Raw Water pump 121
 - Closes 80-16
 - Closes 80-45
 - Places CONT SPRAY RAW WTR 121 INTERTIE control switch to CNT SPR 111
 - Starts Containment Spray Raw Water pump 121
 - Diagnoses pump trip after time delay
- Determines Torus makeup is unavailable due to plant conditions
- Reports Torus water level approaching 8 feet
- May rapidly depressurize RPV with ECs and/or TBVs in anticipation of RPV Blowdown
- Prevents Core Spray injection not needed for core cooling per EOP-1 attachment 4
 - Installs EOP jumpers 17, 18, 19, 24, 25 and 26
 - Throttles Core Spray IVs as necessary

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Events 7, 8 and 9 continued

RO/BOP continued

- **Initiates ECs (CT-2.0)**
- **If Torus water level is above 8 feet, opens 3 ERVs (CT-2.0)**
 - Recognizes/reports ERV 111 fails to open
 - Opens additional ERVs as necessary to achieve 3 open
- **If Torus water level is at or below 8 feet, rapidly depressurizes RPV with Blowdown Systems (Detail O) (CT-2.0)**

Terminating Cues:

- RPV water level controlled in assigned band
- RPV Blowdown in progress
- Primary Containment pressure maintained per EOP-4

NMP SIMULATOR SCENARIO

NRC Scenario 2

REV. 0

No. of Pages: 25

EDG Failure, Power Reduction, Recirc Pump Failures, RPS MG Set Trip, Instrument Air Leak, ATWS, Feedwater Isolation Valves Stick

PREPARER  DATE 9/2/10

VALIDATED Mazuroski, Alfieri, Revelle DATE 7/20/10

GEN SUPERVISOR  DATE 9/2/2010
OPS TRAINING Robert J. Smith

OPERATIONS N/A – Exam Security DATE _____
MANAGER

CONFIGURATION N/A – Exam Security DATE _____
CONTROL

SCENARIO SUMMARY

Length: 90 minutes

Initial Power Level: Approximately 100%

The crew will perform N1-ST-M4A, a monthly surveillance on the Emergency Diesel Generator (EDG). During performance of this surveillance, the EDG governor will fail high. With the EDG exceeding the KW limit in the surveillance, the crew will trip the EDG. The SRO will address Technical Specifications for the inoperable EDG. Then, the crew will lower power to approximately 95% in preparation for Control Rod Pattern Exchange to adjust the margins to Unit 1 thermal limits.

Next the Recirculation pump 12 controller output signal fails high. This results in rising recirculation flow and rising Reactor power. The crew will perform a power reduction to restore and maintain Reactor power below rated. Recirculation pump 12 trips following a time delay. The crew will enter SOP-1.3 for the tripped pump. The pump discharge valve will fail to close. The crew will take alternate action to close the pump suction valve. The SRO must address Technical Specifications to determine the resulting Reactor power limit and required actions.

Then, RPS MG set 141 will trip. The crew will enter SOP-16.1 due to the resulting partial loss of Feedwater heating. The crew must recover the RPS trip bus by shifting to its alternate supply. Next, an Instrument Air leak will occur in the piping to the CRD system. The crew will insert a manual Reactor scram as CRD air pressure lowers below 60 psig (**Critical Task**).

When the scram occurs the control rods will not fully insert. The crew must terminate and prevent injection (**Critical Task**). When the operator attempts to close Feedwater Isolation Valves 11 and 12, the valves will fail to isolate Feedwater flow. The crew must diagnose the

failure and place the Feedwater pumps in Pull-To-Lock to terminate feeding the RPV. The crew will lower Reactor power by inserting control rods per EOP-3.1 and/or using Liquid Poison **(Critical Task)**.

Major Procedures: N1-ST-M4A, N1-OP-43B, N1-SOP-1.3, N1-OP-48, N1-SOP-16.1, N1-SOP-20.1, N1-SOP-1, N1-EOP-1, N1-EOP-3, N1-EOP-3.1

Dynamic Mitigation Strategy Code: AT1, ATWS requiring RPV water level to be lowered, no Blowdown

EAL Classification: Site Area Emergency per EAL 2.2.2, Failure of Automatic and Manual Scrams with Reactor Power > 6%

Termination Criteria: RPV water level controlled in assigned band, Reactor power < 6%, Control rod insertion in progress or complete

I. SIMULATOR SET UP

A. IC Number: IC-152

B. Presets/Function Key Assignments

1. Malfunctions:

a. RD35A, CRD Hydraulic Pump 11 Trip	Preset
b. RR68B, RR Pump 12 M/A Station Failure – High	TRG 2
c. RR01B, RR Pump 12 Drive Breaker Trip, DT=4:00	TRG 2
d. RP01B, Reactor Trip Bus Motor Generator Trips 141	TRG 3
e. RD34, Loss of CRD Instrument Air Pres., RT=5:00, FV=20	TRG 4
f. IA01, Loss of Instrument Air, RT=5:00, FV=40	TRG 4
g. RD33A, Control Rod Bank Blocked Bank 1, FV=12	Preset
h. RD33B, Control Rod Bank Blocked Bank 2, FV=12	Preset
i. RD33C, Control Rod Bank Blocked Bank 3, FV=18	Preset
j. RD33D, Control Rod Bank Blocked Bank 4, FV=12	Preset
k. RD33E, Control Rod Bank Blocked Bank 5, FV=12	Preset

2. Remotes:

a. DG01, DG 102 Governor Speed Droop, FV=ON	Preset
b. RP02, Rx Trip Bus 141 Pwr Source, FV=maint	TRG 29
c. MS05, FW Htr String 12 Reset, FV=reset	TRG 30
d. MS02, HP FW Htr 125 Reset, FV=reset	TRG 30
e. FW24, Removal of HPCI Fuses FU8/FU9, FV=pulled	TRG 24

3. Overrides:

a. 1A4S18DI1149, POS_1 DG #102 GOV CS-RAISE, FV=on	TRG 1
b. 5S66DI3813 POS_1 2F29/NG03A-A POS A, FV=OFF	Preset
c. 5S6DI3011, POS-2 1F10/31-03A POS A, FV=OFF	Preset
d. 5S5DI308, POS-2 1F10/31-03A POS A, FV=OFF	Preset

3. Annunciators:

a. None

4. Triggers:

- a. TRG 1 – Fails EDG 102 governor control switch to RAISE when EDG 102 power is above 2600 KW
 - i. Event Action: dgemvr>2600
 - ii. Command: None

- b. TRG 21 – Runs a batch file which deletes override on EDG 102 governor control switch RAISE position and fails off the EDG 102 governor control switch LOWER position, when EDG 102 power is above 2950 KW
 - i. Event Action: dgemvr>2950
 - ii. Command: bat n10scen2trg21.bat
- c. TRG 26 – Activates when ARI is overridden, RPS has been reset and SDV has drained to allow a manual scram to achieve full inward rod movement
 - i. Event Action: hzlrp12g1==1&&zdrrov==1&&anxstat2(177)==0
 - ii. Command: bat n10scen2trg26.bat

C. Equipment Out of Service

- 1. CRD pump 11 in PTL with yellow tag

D. Support Documentation

- 1. N1-ST-M4A, Emergency Diesel Generator 102 and PB102 Operability Test, completed up to step 8.1.15
- 2. Flag the required control room switches per Attachment 8 of OP-45 for the EDG 102 surveillance.
- 3. RMI for power reduction with recirculation flow

E. Miscellaneous

- 1. Protect the following: CRD pump 12, PB 17, PB 103, Line 1, Line 4, LP pump 12, Core Spray Loops 112 and 122, EDG 103, Containment Spray Loops 121 and 122, RBEVS Loop 12, CREVS 12, Battery Charger 171A or 171B, Battery 12
- 2. Update Divisional Status Board
- 3. Ensure two stopwatches are available for EDG surveillance timing
- 4. Ensure batch file "n10scen2trg21.bat" is in the root batch file directory with the following commands:
 - a. dor 1a4s18di1149
 - b. ior 1a4s18di11410 (0 0) false
- 5. Ensure batch file "n10scen2trg26.bat" is in the root batch file directory with the following commands:
 - a. dmfrd33a
 - b. dmfrd33b
 - c. dmfrd33c
 - d. dmfrd33d
 - e. dmfrd33e

II. SHIFT TURNOVER INFORMATION

OFF GOING SHIFT: ☐ N ☒ D DATE: Today

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

- Control Panel Walkdown (all panels) (SM, CRS, STA, RO, CRE)

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

- Shift Manager Log (SM, CRS, STA)
- RO Log (RO)
- Lit Control Room Annunciators (SM, CRS, STA, RO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (RO)

Evolutions/General Information/Equipment Status:

Reactor is at approximately 100% power

N1-ST-M4A, EDG 102 monthly surveillance test completed through step 8.1.14.

CRD pump 11 is out of service for maintenance

PART III: Remarks/Planned Evolutions:

1. Perform N1-ST-M4A, starting at step 8.1.15.
2. Lower power to 95% in preparation for a Control Rod Pattern Exchange to adjust the margins to thermal limits.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

ATTACHMENT 2: REACTIVITY MANEUVER INSTRUCTION

Reactivity Maneuver: Power Reduction from Rated

Step: 1

INITIAL CONDITIONS/STEP DESCRIPTION							
RE presence required in the Control Room? Yes ___ No <u>✓</u> If YES above, RE presence not required for steps _____. Initial conditions to be verified prior to initiation of step:							
Parameter	Expected Range	Actual	Parameter	Expected Range	Actual		
CTP	1840-1850 MWth						
Description of Step: Lower power to 95% with recirculation flow (1745 - 1770 MWth)							
Critical parameters to be monitored DURING Step: Critical parameters not used must be deleted OR marked N/A							
Critical Parameter	Limit	Owner	Frequency	Contingency			
RMI evaluated against approved power profile: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> .							
Other Comments:							
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="text-align: center;">RE/STA Date</div> </td> <td style="width: 50%; vertical-align: top;"> Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="text-align: center;">RE/STA/SRO Date</div> </td> </tr> </table>						Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="text-align: center;">RE/STA Date</div>	Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="text-align: center;">RE/STA/SRO Date</div>
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<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Approval to perform Step <u>John Aaron</u> / <u>Today</u> <div style="text-align: center;">Shift Manager Date</div> </td> <td style="width: 50%; vertical-align: top;"> Step Completed by: _____ / _____ <div style="text-align: center;">SRO Date</div> </td> </tr> </table>						Approval to perform Step <u>John Aaron</u> / <u>Today</u> <div style="text-align: center;">Shift Manager Date</div>	Step Completed by: _____ / _____ <div style="text-align: center;">SRO Date</div>
Approval to perform Step <u>John Aaron</u> / <u>Today</u> <div style="text-align: center;">Shift Manager Date</div>	Step Completed by: _____ / _____ <div style="text-align: center;">SRO Date</div>						

Critical Tasks:

- CT-1.0 Given lowering CRD system air pressure, the crew will insert a manual reactor scram before control rods begin drifting, in accordance with N1-ARP-F3 and/or N1-SOP-20.1.

- CT-2.0 Given a failure of the reactor to scram with power above 6% and RPV water level above -41 inches, the crew will terminate and prevent all injection except boron and CRD, in accordance with N1-EOP-3.

- CT-3.0 Given a failure of the reactor to scram with power above 6%, the crew will lower reactor power by inserting control rods or injecting boron, in accordance with N1-EOP-3.

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

Take the simulator out of freeze before the crew enters for the pre-shift walkdown and briefing.
Allow no more than 5 minutes for panel walkdown.

Events 1 and 2 - EDG 102 Surveillance Test and Governor Failure

OPERATOR ACTIONS

CREW

- Conducts pre-brief, walks down the panels, assumes the shift

SRO

- Directs performance of N1-ST-M4A, starting at step 8.1.15
- Provides oversight for evolution
- Directs tripping EDG 102 when KW limit is exceeded
- Declares EDG 102 inoperable
- Reviews Technical Specifications for inoperable EDG (14 day LCO per TS 3.6.3.c)

RO

- Monitors plant parameters
- Assist in timing of EDG 102 start

BOP

- Performs N1-ST-M4A, starting at step 8.1.15
- Places EDG 102 control switch to START
- Records time to reach running frequency and voltage
- Adjusts speed to 60 Hz using DIESEL GOV control switch
- Inserts Sync Key in R1022 SYN and places to ON
- Adjusts EDG to establish a slow clockwise rotation on the synchroscope

INSTRUCTOR ACTIONS/ PLANT RESPONSE

OPERATOR ACTIONS

Events 1 and 2 continued

Expected alarm A4-2-3, DG Gen 102 Start

When EDG load is raised above 2600 KW, verify the following override is automatically inserted:

1A4S18DI1149, POS_1 DG #102 GOV CS-RAISE
TRG 1

EDG load rises to approximately 2900 KW

When EDG load rises above 2900 KW, verify **TRG 21 activates**, the above **override is deleted**, and the following **override is inserted**:

1A4S18DI11410, POS_2 DG #102 GOV CS-LOWER

EDG load stabilizes above the surveillance test trip criteria

Role Play: If contacted as an operator at the EDG, report that the EDG is shutdown with no abnormal indications.

Role Play: If contacted as Ops Management or as directed by lead examiner to facilitate next event, inform crew that a team has been dispatched to investigate the EDG 102 failure. Direct the crew to stop all actions in N1-ST-M4A and continue with the Reactor power reduction.

BOP continued

- When sync scope is 5 minutes before 12 o'clock, closes R1022
- Adjusts DIESEL GOV control to establish at least 100 KW
- Adjusts VOLT ADJ RHEO GEN 102 switch to establish reactive load between 300 and 800 KVARs to the bus
- Adjusts DIESEL GOV control switch to raise load to at least 2650-2750 KW
- Recognizes/reports EDG 102 governor malfunction
- Recognizes/reports EDG 102 load is above the 2845 KW trip criteria of N1-ST-M4A step 8.1.13
- Places Diesel Generator 102 Control Switch to Emergency Stop
- Verifies R1022 open

Event 3 - Lower Power with Recirculation Flow

SRO

- Directs power reduction with recirculation flow in accordance with OP-43B and the Reactivity Maneuver Instruction (RMI)
- Provides oversight of reactivity maneuver

RO

- Acknowledges direction from SRO
- Lowers recirculation flow with master recirculation flow controller
- Monitors APRMs
- Monitors recirculation flow
- Monitors Feedwater flow and RPV water level

BOP

- Monitors individual RRP 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")

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Events 4 and 5 - Recirculation Pump MA

**Station Fails High with Delayed Pump Trip and
Recirculation Pump Discharge Valve Fails to
Close**

When directed by lead examiner, insert
malfunctions:

**RR68B, RR Pump 12 M/A Failure – High
RR01B, RR Pump 12 Drive Breaker Trip,
DT=4:00**

TRG 2

Initial Response:

RRP 12 flow rises

Reactor power rises

*Delayed Response (after 4 minutes if pump not
tripped earlier):*

RRP 12 trips and flow lowers

Reactor power lowers

Expected Annunciators:

F2-2-2, REACT RECIRC M-G SET 12

F2-3-5, REACT RECIRC PUMP M-G SET

LOCKOUT REL 86 BLOCKED

Note: When RRP 12 trips, RPV water level may
exceed the high level alarm briefly.

CREW

- Recognize/report rising Reactor power
- Diagnose RRP 12 flow high

INSTRUCTOR ACTIONS/ PLANT RESPONSE

OPERATOR ACTIONS

Events 4 and 5 continued

Note: N1-OP-1 Precaution and Limitation states:
Observe the following individual RRP 11 (12, 13, 14, 15) limits:

- Generator MW 0.790
- Generator Amps 240
- RRP Flow 16.8×10^6 lbm/hr continuous
- Generator Frequency 11.5 Hz to 56 Hz

SRO may direct tripping the pump due to exceeding these limits for current and flow.

Role Play: When contacted as Reactor Engineering, acknowledge request to verify thermal limits.

SRO

- Acknowledges reports
- May direct entry into SOP-1.5 for unplanned power change
- May direct entry into SOP-1.1 to restore and maintain power less than 1850 MWth, as required
- May direct taking RRP 12 M/A station to MAN
- May direct taking RRP 12 to local lock
- May direct tripping RRP 12
- Directs entry into SOP-1.3 for RRP 12 trip
- Acknowledges APRMs are inoperable
- Acknowledges failure of RRP 12 discharge valve to close
- Provides oversight of reactivity manipulation while closing suction valve
- Reviews Tech Specs for impact of removal of pump from service and failure of discharge valve to close
- TS 3.1.7.e applies for partial loop operation; limits power to 90.5% until RRP 12 suction, discharge and discharge bypass valves are closed with motor breakers locked open, and RRP 12 motor breaker is opened and racked out
- Contacts Reactor Engineering to verify thermal limits

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Events 4 and 5 continued

Role Play: If dispatched as operator to take RRP 12 to local lock, wait 1 minute, then report to the control room that you cannot take local control of RRMG set 12 because the Operating Lever will not move.

Note: Expected annunciator F2-1-2 comes in when RRP 12 suction valve is fully closed. This annunciator clears when the suction valve is re-opened.

RO

- Monitors plant parameters
- Lowers power as directed per SOP-1.1
- Monitors Reactor power and recirculation flow during closure of RRP suction valve
- Verifies position on four loop P/F map

BOP

- May execute SOP-1.5 for unplanned power change
- Monitors RPV water level response to transient
- May take RRP 12 M/A station to MAN
- May dispatch operator to take RRP 12 to local lock
- May trip RRP 12
- Enters SOP-1.3 for RRP trip
- Verifies proximity to restricted zone on four loop Power to Flow Map
- Notifies SRO that APRMs are inoperable
- Attempts to close RRP 12 discharge valve
- Recognizes/reports that RRP 12 discharge valve will not close
- Informs crew that reactor power must be monitored and maintained less than 90%
- Closes RRP 12 suction valve
- Opens RRP 12 suction valve for 2-3 seconds

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Events 4 and 5 continued

BOP continued

- Notifies SRO that APRMs are operable
- Green flags RRP 12 control switch
- Places RRP 12 M/A station to MAN

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 6 - RPS MG Set 141 Trip

When directed by the examiner, **insert malfunction:**

RP01B, Reactor Trip Bus Motor Generator Trips 141

TRG 3

Scram solenoid lights for RPS 12 de-energize

Feedwater temperature slowly lowers

Reactor power slowly rises

Expected annunciators:

F4-3-2, RX. TRIP BUS M-G SET 141 TROUBLE

F4-3-8, RPS CH 12 MAN REACTOR TRIP

F4-2-8, RPS CH 12 AUTO REACTOR TRIP

CREW

- Recognize/report RPS 12 half scram
- Diagnose trip of RPS MG set 141

SRO

- Acknowledges reports
- Directs execution of ARP F4-3-2
- Directs entry into OP-48, H.5
- Directs entry into SOP-16.1 for loss of Feedwater heating
- May direct emergency power reduction per SOP-1.1 if needed to control Feedwater temperatures or Reactor power
- Provides oversight of reactivity changes

RO

- Monitors plant parameters
- Lowers power per SOP-1.1 as required to control Feedwater temperatures or Reactor power
- Resets half scram

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 6 continued

Role Play: When dispatched as operator to investigate problem with MG Set 141, wait two minutes then report that you can smell burnt insulation in the vicinity of MG Set 141 motor. Report that the drive motor breaker tripped on overcurrent. If asked, report no overvoltage trip occurred.

Role Play: When dispatched as operator to transfer Reactor Trip Bus 141 to I&C Bus 130A, wait 2 minutes and **insert remote:**

RP02, Rx Trip Bus 141 Pwr Source, FV=maint

TRG 29

Then report Reactor Trip Bus 141 has been re-energized from I&C Bus 130A, and that half scram and Feedwater heaters can be reset.

Role Play: When dispatched as operator to reset Feedwater heaters, wait 2 minutes and **insert remotes:**

MS05, FW Htr String 12 Reset, FV=reset

MS02, HP FW Htr 125 Reset, FV=reset

TRG 30

Then report 12 Feedwater heaters have been reset.

BOP

- Executes ARP F4-3-2
- Dispatches an operator to investigate MG Set 141
- Determines I & C Bus 130A is available
- Obtains SRO permission to perform dead bus transfer of Reactor Trip Bus 141
- Dispatches an operator to perform dead bus transfer of Reactor Trip Bus 141 per OP-48 section H.5.0
- Enters SOP-16.1 due to loss of Feedwater heating
- Monitors Feedwater temperatures
- Acknowledges that Reactor Trip Bus 141 is re-energized
- Coordinates with RO to reset half scram
- Dispatches operator to reset Feedwater heaters

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 7 - Instrument Air Leak

When directed by lead examiner, **insert malfunctions:**

RD34, Loss of CRD Instrument Air Pres,

RT=5:00, FV=20

IA01, Loss of Instrument Air, RT=5:00, FV=40

TRG 4

Instrument air pressure lowers

Backup Instrument Air Compressor (IAC) loads

Standby Instrument Air Compressor (IAC) starts

CRD air pressure lowers

Expected Annunciators:

L1-4-7, INST AIR BACK-UP VALVE OPEN

F3-3-2, CRD CONTROL AIR PRESSURE HI-LO

CREW

- Recognizes/reports lowering instrument air pressure
- Observes start of standby IAC

SRO

- Acknowledges reports
- Directs execution of ARP F3-3-2
- May direct entry into SOP-20.1
- May direct execution of ARP L1-4-7
- Acknowledges CRD air pressure is less than 60 psig
- **Directs manual Reactor scram (CT-1.0)**
- Acknowledges scram report

RO

- Monitors plant parameters
- **Places the Mode Switch in SHUTDOWN (CT-1.0)**
- Provides scram report

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Event 7 continued

Role Play: When directed as operator check for air leaks, acknowledge order. Wait 2 minutes and report air leakage on Reactor Building 237' West, near the HCUs.

BOP

- Executes ARP F3-3-2
- If directed executes ARP L1-4-7
- Dispatches Operator to check for air leaks
- Monitors CRD air pressure
- Reports when CRD air pressure lowers below 60 psig

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Events 8 and 9 – ATWS with Failure of FW

Isolation Valves to Isolate

Verify the following **malfunctions** are **preset**:

**RD33A, Control Rod Bank Blocked Bank 1,
FV=12**

**RD33B, Control Rod Bank Blocked Bank 2,
FV=12**

**RD33C, Control Rod Bank Blocked Bank 3,
FV=18**

**RD33D, Control Rod Bank Blocked Bank 4,
FV=12**

**RD33E, Control Rod Bank Blocked Bank 5,
FV=12**

Control rods partially insert

Reactor power remains > 6%

CREW

- Diagnose failure of control rods to insert
- Diagnose Reactor power above 6%

Events 8 and 9 continued

SRO

- Enters EOP-2, RPV Control, due to Reactor power above 6% when scram required
- Answers "Are all rods inserted to at least position 04?" NO
- Answers "Will the reactor stay shutdown without boron?" NO
- Exits EOP-2, enters EOP-3, Failure to Scram
- Directs ADS bypassed
- Directs prevention of Core Spray injection per EOP-1 att 4

EOP-3 Level Leg Actions:

- Directs bypass of low-low RPV water level MSIV isolation per EOP-1 att 2
- Determines Reactor power is above 6% and RPV water level is above -41 inches
- **Directs terminate and prevent of all RPV injection except boron and CRD per EOP-1 att 24 (CT-2.0)**
- **Acknowledges failure of FW Isolation Valves 11 and 12**
- **Directs placing FW Pumps in PTL**
- Directs RPV level lowered to at least -41 inches

Directs RPV water level controlled -109 to -41 inches with Condensate/FW and CRD

Events 8 and 9 continued

SRO continued

EOP-3 Pressure Leg Actions:

- If any ERV is cycling:
 - Directs initiation of Emergency Condensers
 - Directs ERVs opened to lower RPV pressure to less than 965 psig
- Directs RPV pressure controlled below 1080 psig using TBVs, ECs and/or ERVs
- Monitors Figure M, Heat Capacity Temperature Limit

EOP-3 Power Leg Actions:

- Directs initiation of ARI
- Answers "Is the Turbine Generator On-line?" NO
- Answers "Reactor power?" Above 6%
- Directs Recirc pumps verified tripped
- **Directs execution of EOP-3.1, Alternate Rod Insertion (CT-3.0)**
- If power is oscillating more than 25% or before Torus temperature reaches 110°F:
 - Records Liquid Poison tank level
 - **Directs Liquid Poison injection (CT-3.0)**
 - Acknowledges first Liquid Poison pump injecting

Events 8 and 9 continued

RO

- Depresses RPS pushbuttons
- Initiates ARI
- Bypasses Core Spray IV interlocks per N1-EOP-1 Att 4 by installing six jumpers (17, 18, 19, 24, 25, 26) inside Panel N
- Bypasses low-low RPV water level MSIV isolation per EOP-1 att 2 by installing four jumpers (1, 2, 8, 9) inside Panel N
- Performs EOP-3.1, Section 3 (driving rods) and/or 4 (manual scrams) (see actions below)
- Inserts SRMs
- Inserts IRMs
- Controls IRM recorders and range switches as required to monitor power
- Reports when APRMs are < 6%
- Reports status of control rod insertion

Events 8 and 9 continued

Note: Control rods will successfully insert using RMCS.

Note: RO will likely have to fully open the CRD flow control valve and/or close 44-04 in order to achieve rod movement via RMCS; these methods are preferential to closing 44-167 due to ability to perform from the control room and not preventing further scram attempts by blocking the charging water header.

Note: When ARI is overridden, the scram is reset, and annunciator F4-1-1 clears, then **TRG 27** will **activate**. Verify this occurs and the **RD33 malfunctions all delete**. This allows all control rods to insert on the next manual scram attempt.

RO continued

Possible EOP-3.1 Section 3 Actions:

- Verify a CRD Pump running
- Place Reactor Mode Switch in REFUEL
- Place ARI OVERRIDE switch in OVERRIDE
- Install RPS jumpers (5, 6, 12, 13)
- Reset the scram
- **Insert rods to 00 using EMER ROD IN starting with high power regions of core (use LPRM indications) (CT-3.0)**
- If more drive pressure is required, then perform one of more of the following:
 - Fully open CRD Flow Control Valve (F panel)
 - Close 44-04, Control Rod Drive Water Cont V (F Panel)
 - Close 44-167, Charging Water Header Blocking Valve (RB 237')

Possible EOP-3.1 Section 4 Actions:

- Place ARI OVERRIDE switch in OVERRIDE
- Install RPS jumpers (5, 6, 12, 13)
- Reset the scram
- Verify open 44-167, Charging Water Header Blocking Valve (RB 237')
- **When the SDV is drained, then initiate a manual scram (CT-3.0)**

Events 8 and 9 continued

Role Play: When directed as NAO to pull HPCI fuses FU-8 and FU-9, wait one minute and **insert remote:**

**FW24, Removal of HPCI Fuses FU8/FU9,
FV=pulled**

TRG 24

Then report that HPCI fuses FU-8 and FU-9 have been pulled

BOP

- Bypasses ADS
- **Terminates and prevents all injection except boron and CRD per N1-EOP-1 Att 24 (CT-2.0):**
 - Closes both FEEDWATER ISOLATION Valves 11 and 12
 - Diagnoses failure of ISOLATION Valves 11 and 12 to close
 - Places FEEDWATER Pumps 11 and 12 in PTL
 - Selects Manual on 11, 12 and 13 FWP Valve Control selector switches
 - Closes 11, 12 and 13 Feedwater FCV (Knurled Knob) full counterclockwise
 - Directs NAO to remove fuses FU-8 and FU-9 from Panel IS34 in the Aux Control Room
 - Verifies closed, FEEDWATER PUMP 13 BLOCKING VALVE
 - Verifies in MAN, FWP 11 BYPASS VALVE, AND set to zero output
 - Verifies in MAN, FWP 12 BYPASS VALVE, AND set to zero output
- Informs SRO when RPV water level reaches -41 inches
- If any ERV is cycling:
 - Initiates Emergency Condensers
 - Manually opens ERVs to lower RPV pressure to 965 psig

Events 8 and 9 continued

BOP continued

- Controls RPV pressure below 1080 psig with TBVs, ECs and/or ERVs
- Verifies all Recirc Pumps tripped
- Initiates Liquid Poison as directed
 - Reports initial tank level
 - Starts Liquid Poison pump 11 or 12
- Verifies RWCU isolated

Terminating Cues:

- RPV water level controlled in assigned band
- Reactor power < 6%
- Control rod insertion in progress or complete

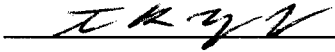
NMP SIMULATOR SCENARIO

NRC Scenario 3

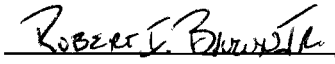
REV. 0

No. of Pages: 24

Powerboard 101 Fault, RBCLC TCV Failure, ERV Inadvertently Opens, Degraded 345 KV Grid,
Coolant Leak in Drywell, Feedwater Pump Trip

PREPARER  DATE 9/2/10

VALIDATED Mazuroski, Alfieri, Revelle DATE 7/20/10

GEN SUPERVISOR
OPS TRAINING  DATE 9/7/2010

OPERATIONS
MANAGER N/A – Exam Security DATE _____

CONFIGURATION
CONTROL N/A – Exam Security DATE _____

SCENARIO SUMMARY

Length: 90 minutes

Initial Power Level: Approximately 100%

The crew assumes the shift at approximately 100% power with Feedwater pump 11 out of service. They are directed to transfer the Powerboard 101 supply from the normal breaker, R1014, to the alternate breaker, R1011. Once this evolution is complete, a fault will occur causing a loss of Powerboard 101. The crew will respond to a loss of RRP 13 per SOP-1.3. Additional lost loads include Condensate Pump 12, Feedwater Booster Pump 12 and the Electric Fire Pump. After the loss of PB 101, the Reactor Building Closed Loop Cooling (RBCLC) Temperature Controller will fail such that RBCLC temperatures rise. This failure will require placing the RBCLC controller in manual and restoring the effected equipment to normal temperatures.

Next, ERV 111 opens inadvertently. The crew will enter SOP-1.4. Power will be reduced to approximately 85% power, and fuses will be pulled. This will close the ERV (**Critical Task**). The SRO will enter TS 3.1.5.a, requiring a 10 hour shutdown LCO.

Next, a grid disturbance will result in lowering frequency and voltage on the 345KV power lines. The crew will enter SOP-33B.1 and monitor grid frequency to determine action times for tripping the turbine. As the grid continues to degrade, the crew will scram the Reactor.

A coolant leak in the Drywell will develop following the scram. The crew will enter EOP-4 and re-enter EOP-2. The crew will initiate Containment Sprays to prevent exceeding Pressure Suppression Pressure, in accordance with EOP-4 (**Critical Task**). The remaining high pressure Feedwater pump will trip, causing RPV water level to lower to the top of active fuel (TAF). With

the degraded high pressure injection capability, the crew will enter RPV Blowdown before RPV water level drops below -109 inches, in accordance with EOP-2 (**Critical Task**).

Major Procedures: N1-OP-30, N1-SOP-1.3, N1-SOP-11.1, N1-SOP-1.4, N1-SOP-1.1, N1-SOP-33B.1, N1-SOP-1, N1-EOP-2, N1-EOP-4, N1-EOP-1, N1-EOP-8

Dynamic Mitigation Strategy Code: RL2, LOCA Results in RPV Water Level Below TAF, Blowdown and Recover Level with Low Pressure Systems

EAL Classification: Alert per EAL 3.1.1, Drywell Pressure > 3.5 psig

Termination Criteria: RPV water level controlled in assigned band, RPV Blowdown in progress, Primary Containment pressure maintained per EOP-4

I. SIMULATOR SET UP

A. IC Number: IC-153

B. Presets/Function Key Assignments

1. Malfunctions:

- a. FW03A, Feedwater Pump Trip 11 Preset
- b. ED06, PB 101 Electrical Fault, DT=15 TRG 1
- c. CW19, RBCLC Temperature Controller Failure, FV=minimum co~ TRG 2
- d. AD05, ERV 111 Failure – Opens Inadvertently TRG 3
- e. EG11, 345 KV Power Grid Transient, RT=7:00, IV=355*, FV=345 TRG 4
- f. RR29, RR Loop Rupture on Pump 15 Suction Line, DT=3:00,
RT=7:00, FV=17 TRG 5
- g. FW03B, Feedwater Pump Trip 12, DT=6:00 TRG 5

2. Remotes:

- a. AD01A, ERV 111 Fuses, FV=pulled TRG 27
- b. AD07, Acoustic Monitor Alarm Reset, FV=reset TRG 28
- c. FW24, Removal of HPCI Fuses FU8/FU9, FV=pulled TRG 24

3. Overrides:

- a. None

3. Annunciators:

- a. None

4. Triggers:

- a. TRG 1 – Triggers the PB 101 fault when R1011 control switch is taken to CLOSE
 - i. Event Action: zded551c==1
 - ii. Command: None
- b. TRG 5 – Triggers the LOCA and the trip of Feedwater pump 12 when the mode switch is taken to SHUTDOWN
 - i. Event Action: zdrpstdn==1
 - ii. Command: None

C. Equipment Out of Service

- 1. Feedwater pump 11 control switch is in pull-to-lock with a yellow clearance tag applied.
- 2. Feedwater pump 11 block valve is closed with a yellow clearance tag applied.

D. Support Documentation

- 1. N1-OP-30 section H.8 marked up through H.8.1.

2. Flag protected equipment for FWP 11 out of service (FWP 12, FWBP 13, CP 13, EDG 103, PB 103, PB 12).
3. Update Divisional Status Board.

* Displays current value until triggered

- 4.

II. SHIFT TURNOVER INFORMATION

OFF GOING SHIFT: ☐ N ☒ D DATE: Today

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

- Control Panel Walkdown (all panels) (SM, CRS, STA, RO, CRE)

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

- Shift Manager Log (SM, CRS, STA)
- RO Log (RO)
- Lit Control Room Annunciators (SM, CRS, STA, RO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (RO)

Evolutions/General Information/Equipment Status:

Preparing to transfer Powerboard 101 supply from R1014 to R1011. Previous shift has completed step H.8.1 of N1-OP-30.

Feedwater pump 11 is out of service for maintenance (Day 1 of planned 3 day window, TS 3.1.8, 15 day LCO applies).

PART III: Remarks/Planned Evolutions:

Transfer Powerboard 101 supply from R1014 to R1011 in accordance with N1-OP-30 section H.8.0.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

Critical Tasks:

- CT-1.0 Given an inadvertently open ERV at power, the crew will close the ERV or insert a manual scram prior to torus temperature exceeding 110°F, in accordance with N1-SOP-1.4.
- CT-2.0 Given a LOCA in the Drywell, the crew will initiate Containment Sprays prior to exceeding the Pressure Suppression Pressure limit, in accordance with N1-EOP-4.
- CT-3.0 Given a LOCA with degraded high pressure injection capability, the crew will depressurize the RPV and inject with Preferred and Alternate Injection Systems to restore and maintain RPV water level above -84 inches, in accordance with N1-EOP-2.

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

Take the simulator out of freeze before the crew enters for the pre-shift walkdown and briefing.
Allow no more than 5 minutes for panel walkdown.

Event 1 - Transfer PB 101 from R1014 to R1011

Note: Annunciator A5-2-1 is expected while PB101 SUPPLY BREAKER INTERLOCK BY-PASS SWITCH is in BYPASS

OPERATOR ACTIONS

CREW

- Conducts pre-brief, walks down the panels, assumes the shift

SRO

- Directs transfer of PB 101 from R1014 to R1011 per OP-30, starting at step H.8.2
- Provides oversight for evolution

RO

- Monitors plant parameters

BOP

- Acknowledges direction to perform N1-OP-30 section H.8, starting at step H.8.2
- Places PB101 SUPPLY BREAKER INTERLOCK BY-PASS SWITCH in BYPASS
- Inserts Sync. Key in Breaker R1011
 - Turns Sync. Key ON
 - Confirms incoming AND running voltage NORMAL
- Closes Breaker R1011
- Turns Sync. Key OFF
- Removes Sync. Key
- Opens Breaker R1014

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 2 - PB 101 Fault

Verify the following **malfunction automatically inserts** when R1011 control switch is taken to CLOSE:

ED06, PB 101 Electrical Fault, DT=15

TRG 1

Loss of voltage on PB 101

Lowering Reactor power

Lowering Recirc flow

Expected Annunciators:

A4-1-7, POWER BOARD 101 R1011 TRIP

A4-2-7, POWER BOARD 101 LOCKOUT 86BT

F2-2-3, React Recirc M-G Set 13

*F2-3-5, React Recirc Pump M-G Set Lockout Rel
86 Blocked*

Note: The next event should be inserted when the crew closes the RRP 13 Discharge Valve.

CREW

- Diagnose/report loss of PB 101
- Diagnose/report the trip of RRP 13

SRO

- Acknowledges reports
- Directs entry into SOP-1.3 for RRP trip
- May direct entry into 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

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 2 continued

Role Play: If dispatched to PB 101, wait 2 minutes to report R1011 tripped on overcurrent and that Electrical Maintenance is at the PB investigating.

RO

- Monitors plant parameters
- Monitors Reactor power and recirculation flow during closure of RRP suction valve
- Verifies position on four loop P/F map

BOP

- May execute SOP-1.5 for unplanned power change
- Monitors RPV water level response to transient
- Enters 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

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 3 - RBCLC Temperature Controller

Failure

When directed by lead examiner, **insert malfunction:**

**CW19, RBCLC Temperature Controller Failure,
FV=minimum co~**

TRG 2

TCV 70-137 closes and bypass opens

RBCLC water temperature rises

*Temperatures of components cooled by RBCLC
rise*

Expected Annunciator:

*H1-4-1, R BUILDING COOLING WATER PRESS
TEMP MAKEUP FLOW*

CREW

- Recognize/report rising RBCLC temperatures
- Diagnose failure of RBCLC automatic temperature control

SRO

- Acknowledges report of RBCLC TCV failure
- Directs execution of ARP H1-4-1
- May direct entry into SOP-11.1, RBCLC Failure
- Directs manual control of RBCLC temperature

RO

- Monitor plant parameters
- Monitor RRP's and other components cooled by RBCLC

Event 3 continued

BOP

- Executes ARP H1-4-1
- May enter SOP-11.1, RBCLC Failure
- Monitors equipment cooled by RBCLC
- Places RBCLC Temperature Controller 70-23B in manual (OP-11, Section H.13 may be referenced)
 - Depress the A/M Button until red LED is illuminated next to "M"
 - Turns knurled knob as required to open/close RBCLC TCV
- Manually adjust RBCLC Temperature Controller to maintain RBCLC temp between 57°F and 95°F

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 4 - ERV 111 Opens Inadvertently

When directed by lead examiner, **insert malfunction:**

AD05, ERV 111 Failure – Opens Inadvertently

TRG 3

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

SRO

- Acknowledges reports
- Directs entry into SOP-1.4, Stuck Open ERV
- Directs emergency power reduction to approximately 85% power
- Provides oversight for reactivity manipulation
- Determines that ERV 111 is inoperable per TS 3.1.5.a, requiring a 10 hour shutdown
- **Directs taking action to close ERV 111 or directs a manual scram prior to Torus temperature exceeding 110°F, in accordance with SOP-1.4 (CT-1.0)**

Event 4 continued

SRO continued

- Acknowledges that ERV 111 has closed
- Enters EOP-4 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 EOP-1 att 16 or SOP-1.4

RO

- Performs emergency power reduction per SOP-1.1
- Reduces recirculation master controller to lower power to approximately 85%
- Monitors APRMs
- Monitors recirculation flow
- Monitors Feedwater flow and RPV water level
- Monitors position on power to flow map
- **If Torus temperature approaches 110°F, inserts manual Reactor scram (CT-1.0)**

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 and gloves are required for pulling fuses in F panel

Role Play: If the operator is directed to pull fuses in the RB wait 3 minutes and **insert remote:**

AD01A, ERV 111 Fuses, FV=pulled

TRG 27

Report fuses are pulled.

Role Play: When directed as operator to reset the acoustic monitor, wait 1 minute and **insert remote:**

AD07, Acoustic Monitor Alarm Reset, FV=reset

TRG 28

Report acoustic monitor is reset.

BOP

- Enters 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) (CT-1.0)**
 - **Directs operator to pull ERV 111 fuses on RB 237' (CT-1.0)**
- 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

BOP continued

- Places Torus cooling in service when directed, per SOP-1.4, att 2 or 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

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 5 - Degraded 345KV Grid Conditions

When directed by lead examiner, **insert malfunction:**

**EG11, 345 KV Power Grid Transient, RT=7:00,
IV=355, FV=345**

TRG 4

345KV frequency and voltage lower

Expected annunciators:

A6-3-3, 345 KV Sys Frequency High – Low (first)

A8-1-3, 115 KV Bus Low Voltage (second)

A6-2-6, 345 KV Bus Voltage High-Low (later)

Note: Turbine operational time limit changes as grid conditions continue to degrade:

<u>Variation from 60 Hz</u>	<u>Operation Time</u>
± 0.6 Hz	Unlimited
± 0.6 Hz to 1.4 Hz	90 minutes
± 1.4 Hz to 1.9 Hz	12 minutes
> ± 1.9 Hz	0 minutes

CREW

- Acknowledges/reports annunciators
- Diagnoses/reports lowering 345 KV grid frequency

SRO

- Acknowledges reports
- Directs execution of ARPs
- Directs entry into SOP-33B.1, Major 345 KV Grid Disturbances
- Directs entry into SOP-33A.3, Major 115 KV Grid Disturbances
- Acknowledges report that turbine operational time limit is exceeded for current frequency variation
- Directs manual scram
- Acknowledges scram report
- Enters EOP-2 on low RPV water level
- Directs SOP-1 actions
- Directs RPV water level controlled 53-95" with Condensate/FW and CRD
- Directs RPV pressure controlled 800-1000 psig with Turbine Bypass Valves or Emergency Condensers

Event 5 continued

Role Play: If contacted as operator to check for abnormal indications (pump operation, Aux Control Room panels, breaker targets, etc.) due to the grid disturbance, wait 2 minutes and report there are no abnormal indications.

Role Play: If contacted as Power Control regarding grid voltage or frequency, give current values based on the simulator instructor station.

Role Play: If contacted as Power Control regarding status of offsite power, inform that thunderstorms have caused a loss of some generation and you do not currently have an estimated time for restoration.

Role Play: If contacted as Power Control regarding the low voltage post contingency alarm, inform that the low voltage post contingency alarm is NOT alarming.

RO

- Monitors plant parameters
- When directed, places Mode Switch in Shutdown
- Provides scram report
- Performs SOP-1, Reactor Scram, scram verification actions
 - Places IRMs on range 9
 - Inserts IRM and SRM detectors
 - Downranges IRMs as necessary to monitor power decrease
- Reduces Recirc Master flow to 25-43 x 10⁶ lb/hr
- Maintains RPV pressure below 1080 psig and in assigned band

BOP

- Executes ARPs
- May execute SOP-33A.3
- Executes SOP-33B.1
- Monitors 345 KV grid frequency and determines magnitude of frequency variation
- Contacts Power Control and obtains 345 KV line frequency
- Updates crew on turbine operational time limit as grid frequency lowers
- May notify Power Control of turbine operational time limit
- Places Turbine Vibration chart recorder in fast speed

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Event 5 continued

Note: If the crew fails to insert a manual reactor scram for a prolonged period of time following grid frequency lowering below 58.1 Hz, the lead examiner may choose to force the scenario progression by inserting malfunction:

TC01, Main Turbine Trip

BOP continued

- When grid frequency lowers to 58.1 Hz, notifies crew that turbine must be tripped and Reactor must be scrammed
- Performs SOP-1, Reactor Scram, level control actions:
 - Restores RPV level to 53-95" by controlling injection and rejecting through RWCU, as necessary
 - 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 13 FWP VALVE CONTROL 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, if required
 - Places 12 FWP BYPASS Valve in AUTO, sets to 65-70 inches

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Event 5 continued

BOP continued

- If RPV level reaches 85 inches and rising, then:
 - Verifies all Feedwater Pumps OFF
 - Secures CRD Pumps not required
 - Maximizes RWCU reject flow
 - Closes FWIVs if required
 - Closes MSIVs if required
- Maintains RPV water level in assigned band

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Events 6 and 7 - Coolant Leak in the Drywell
with a Trip of the Operating FW Pump

Verify the following **malfunctions** are **automatically inserted** when the mode switch is taken to SHUTDOWN:

RR29, RR Loop Rupture on Pump 15 Suction Line, DT=3:00, RT=7:00, FV=17
FW03B, Feedwater Pump Trip 12, DT=6:00

TRG 5

Initial response:

Drywell humidity, pressure and temperature rise

Drywell leakage rises

RPV level and pressure lower

Expected annunciators:

H2-4-7, Drywell Water Leak Detection Sys

K2-4-3, Drywell Pressure High-Low

F1-1-5, RPS Ch 11 Drywell Press High

F4-1-4, RPS Ch 12 Drywell Press High

Delayed response:

Feedwater Pump 12 trips

Expected annunciators:

H3-2-7, Reactor FW Pump 12 Trip Overload

Suction Hi-Level

H3-2-8, Reactor FW Pump 12 Aux System

CREW

- Diagnose/report degrading containment parameters

Events 6 and 7 continued

Note: If Torus cooling is in service candidate will use EOP-1, att 17, sect. 3.2.3

SRO

- Acknowledges reports
- Enters EOP-4 due to high drywell pressure and temperature
- Re-enters EOP-2 due to high drywell pressure and low RPV level
- Directs Containment Spray pumps locked out (unless pump is in Torus cooling)
- Acknowledges trip of Feedwater pump 12
- When torus pressure exceeds 13 psig or drywell temperature approaches 300°F:
 - Answers "Below the Containment Spray Initiation Limit?" – Yes
 - Verifies all Recirc pumps are tripped
 - Directs trip of all Drywell cooling fans
 - **Directs operation of Containment Spray per EOP-1 attachment 17 (CT-2.0)**
- Evaluates/monitors position on Pressure Suppression Pressure curve
- Directs RPV injection with CRD and Liquid Poison
- May direct closure of MSIVs and pressure control using Emergency Condensers
- Transitions to alternate level control leg of EOP-2

Events 6 and 7 continued

Note: Most likely injection sources are Core Spray, Condensate/Feedwater, CRD and/or Liquid Poison.

SRO continued

- Directs ADS bypassed
- Directs verification of EC initiation
- Answers "Are 2 or more Subsystems available?" – Yes (Both loops of Core Spray available)
- Waits until RPV water level drops to -84 inches
- Answers "Is any Subsystem lined up with a pump running?" – Yes (Both loops of Core Spray running)
- Answers "Is any injection source lined up with a pump running?" – Yes
- Enters EOP-8, RPV Blowdown:
 - Answers "Are all control rods inserted to at least position 04?" – Yes
 - Answers "Drywell pressure?" – At or above 3.5 psig
 - Directs EC initiation
 - Answers "Torus water level?" – Above 8.0 ft
 - **Directs open 3 ERVs (CT-3.0)**
- Verifies injection of entire contents of Liquid Poison tank
- **Directs injection with available systems to restore and maintain RPV water level above -84 inches (CT-3.0)**
- Directs installation of Core Spray jumpers (EOP-1 attachment 4) to allow control of Core Spray IVs

Events 6 and 7 continued

Note: If Torus cooling is in service candidate will use EOP-1, att 17, sect. 3.2.3

SRO continued

- Transitions back to normal level control leg of EOP-2
- Directs restoration of RPV level to 53-95 inches

RO/BOP

- Updates crew on reactor and containment parameters
- Locks out Containment Spray pumps
- Recognizes/reports trip of Feedwater pump 12
- Maximizes RPV injection with CRD and Liquid Poison
- When torus pressure exceeds 13 psig or drywell temperature approaches 300°F:
 - Verifies all Recirc pump are tripped
 - Trips all Drywell cooling fans
 - **Initiates Containment Spray per N1-EOP-1 attachment 17 (CT-2.0)**
 - Verifies started two Containment Spray pumps (111 or 122 preferred)
- May start additional Containment Spray and Containment Spray Raw Water pumps as necessary
- Bypasses ADS
- Verifies EC initiation

Events 6 and 7 continued

RO/BOP continued

- When RPV water level drops below - 84 inches:
 - Initiates ECs
 - **Opens 3 ERVs (CT-3.0)**
- Verifies Liquid Poison injection to inject entire contents of Liquid Poison tank
- **Injects with available systems to restore and maintain RPV water level above -84 inches (CT-3.0)**
- Installs Core Spray jumpers (EOP-1 attachment 4)
- Throttles Core Spray IVs as necessary to control RPV water level
- Restores RPV water level to 53-95 inches

Terminating Cues:

- RPV water level controlled in assigned band
- RPV Blowdown in progress
- Primary Containment pressure maintained per EOP-4

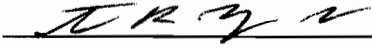
NMP SIMULATOR SCENARIO

NRC Scenario 4

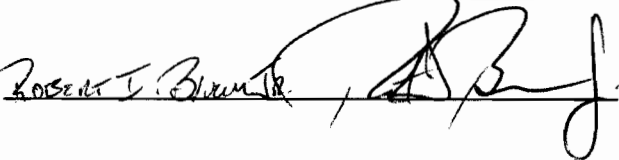
REV. 0

No. of Pages: 25

Generator Voltage Regulator Failure, RRP Seal Failure, FWLC Instrument Failure, Un-Isolable
RWCU Break in Reactor Building, TBVs Fail Closed

PREPARER  DATE 9/2/10

VALIDATED Mazuroski, Alfieri, Revelle DATE 7/21/10

GEN SUPERVISOR
OPS TRAINING  DATE 9/7/2010

OPERATIONS
MANAGER N/A – Exam Security DATE _____

CONFIGURATION
CONTROL N/A – Exam Security DATE _____

SCENARIO SUMMARY

Length: 90 minutes

Initial Power Level: Approximately 85%

The crew assumes the shift at approximately 85% power. They are directed to remove Condensate Pump 13 from service immediately for maintenance due to a motor oil leak.

After the pump has been removed from service, the crew will conduct a rod pattern exchange. During the rod pattern exchange, the Main Generator Auto Voltage Regulator will fail. The crew will diagnose the failure and take manual control of generator voltage and restore the correct generator output. Following the Main Generator Auto Voltage Regulator malfunction, the inner seal will fail on Reactor Recirculation Pump 11. A few minutes later, the outer seal will fail, affecting drywell leakage. The crew will remove the pump from service and isolate it. The SRO will review Technical Specifications for drywell leakage and partial loop operation.

Next, a Reactor pressure transmitter will fail low. This will affect Feedwater level control. The crew will be required to shift to manual Feedwater level control. The crew may then shift reactor pressure/level columns and return to automatic Feedwater level control. Technical Specifications must be addressed due to the affect on the HPCI mode of Feedwater.

A Reactor Water Cleanup system line break will occur in the Secondary Containment downstream of the Supply Isolation Valves. Reactor Water Cleanup will fail to isolate on high area temperature. The crew will attempt to isolate the system, but the valves will fail to fully close. This break will require a scram (**Critical Task**) and RPV blowdown (**Critical Task**) due to exceeding the Maximum Safe Value for general area temperatures. The Turbine Bypass

Valves will fail to open throughout the transient, complicating pressure control and limiting anticipatory blowdown.

Major Procedures: N1-OP-15A, N1-OP-5, N1-ARP-A7, N1-SOP-1.2, N1-SOP-16.1, N1-EOP-5, N1-EOP-2, and N1-EOP-8

Dynamic Mitigation Strategy Code: SC1, Primary System Leak in Secondary Containment, Blowdown Required

EAL Classification: Site Area Emergency per EALs 3.4.1 (RWCU Isolation Failure and Release Outside Primary Containment) and/or 4.1.1 (Primary System Discharging Outside Primary Containment, >135°F in Two General Areas)

Termination Criteria: RPV water level controlled in assigned band, RPV Blowdown in progress

I. SIMULATOR SET UP

A. IC Number: IC-154

B. Presets/Function Key Assignments

1. Malfunctions:

- | | |
|--|--------|
| a. CT01D, CT Pump 122 Trip | Preset |
| b. EG02, Generator Auto Voltage Regulator Fails – Increase | TRG 1 |
| c. RR06A, RR Pump 11 Lower (Inner) Seal Failure, RT=3:00, FV=75 | TRG 2 |
| d. RR07A, RR Pump 11 Upper (Outer) Seal Failure, DT=4:00, RT=5:00, FV=60 | TRG 2 |
| a. RR92, Rx Vesi Pres Xmr 36-31 (Local-FW Control) Fails Low | TRG 3 |
| e. CU11, CU Coolant Leak Outside of Drywell, FV=45 | TRG 4 |
| f. CU14, CU Isolation Valves Stuck Open | Preset |
| g. TC12, All Bypass Valves Fail – Closed, FV=100 | TRG 5 |

2. Remotes:

- | | |
|--|--------|
| a. FW01C, Condensate Pump 13 Discharge Valve 50-12, FV=close | TRG 30 |
|--|--------|

3. Overrides:

- a. None

4. Annunciators:

- a. None

5. Triggers:

- a. TRG 11 – Re-inserts RRP 11 seal failure at 10% when RRP 11 suction and discharge green light are energized
 - i. Event Action: hzlrrv02c(1)==1&&hzlrrv03c(1)==1
 - ii. Command: imf rr06a (0 0) 10
- b. TRG 12 – Re-inserts RRP 11 seal failure at 10% when RRP 11 suction and discharge green light are energized
 - i. Event Action: hzlrrv02c(1)==1&&hzlrrv03c(1)==1
 - ii. Command: imf rr07a (0 0) 10
- c. TRG 21 – Energizes RWCU IV 33-01 green light when control switch is taken to close
 - i. Event Action: zdcu301c==1
 - ii. Command: ior 9ds51lo51912 (0 0) true
- d. TRG 22 – Energizes RWCU IV 33-02 green light when control switch is taken to close

- i. Event Action: zdcu302c==1
 - ii. Command: ior 9ds53lo51914 (0 0) true
- e. TRG 23 – Energizes RWCU IV 33-04 green light when control switch is taken to close
 - i. Event Action: zdcu304c==1
 - ii. Command: ior 9ds55lo5200 (0 0) true
- C. Equipment Out of Service
 - 1. Containment Spray pump 122 control switch in PTL with yellow tag
 - 2. Containment Spray pump 122 suction valve closed with yellow tag
- D. Support Documentation
 - 1. N1-OP-15A section H.9.0, completed through step 9.2
 - 2. RMI and Rod Movement Sheets for sequence exchange
- E. Miscellaneous
 - 1. Ensure FWLC is selected to column 11
 - 2. Protect the following equipment: Containment Spray Pumps 111, 112, 121, EDG 102, PB 102
 - 3. Update Divisional Status Board
 - 4. Swap IRM/APRM recorders to the IRM display

II.

SHIFT TURNOVER INFORMATION

OFF GOING SHIFT: ☐ N ☒ D

DATE: Today

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

- Control Panel Walkdown (all panels) (SM, CRS, STA, RO, CRE)

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

- Shift Manager Log (SM, CRS, STA)
- RO Log (RO)
- Lit Control Room Annunciators (SM, CRS, STA, RO, CRE)
- Shift Turnover Checklist (ALL)
- LCO Status (SM, CRS, STA)
- Computer Alarm Summary (RO)

Evolutions/General Information/Equipment Status:

Reactor power is approximately 85%

Containment Spray Pump 122 is out of service for maintenance (Day 1 of planned 4 day window, TS 3.3.7.b 15 day LCO applies)

Condensate pump 13 motor has an oil leak

PART III: Remarks/Planned Evolutions:

- Shutdown Condensate pump 13 per OP-15A section H.9.0.
- Perform Control Rod Sequence Exchange per RMI.

PART IV: To be reviewed/accomplished shortly after assuming the shift:

- Review new Clearances (SM)
- Shift Crew Composition (SM/CRS)
- Test Control Annunciators (CRE)

TITLE	NAME	TITLE	NAME
SRO			
ATC RO			
BOP RO			

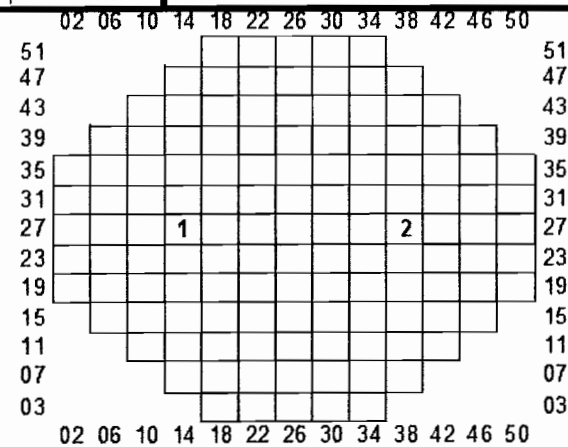
ATTACHMENT 2: REACTIVITY MANEUVER INSTRUCTION

Reactivity Maneuver: Rod Sequence Exchange

Step: 1

INITIAL CONDITIONS/STEP DESCRIPTION							
RE presence required in the Control Room? Yes___ No___ <input checked="" type="checkbox"/> ___ If YES above, RE presence not required for steps _____. Initial conditions to be verified prior to initiation of step:							
Parameter	Expected Range	Actual	Parameter	Expected Range	Actual		
Recirc Flow	56 - 60 Mlbm/hr	57 Mlbm/hr					
Description of Step: Complete attached rod movement sheets.							
Critical parameters to be monitored DURING Step: Critical parameters not used must be deleted OR marked N/A							
Critical Parameter	Limit	Owner	Frequency	Contingency			
CTP	1850 MWth	RO	Continuous	Lower recirculation flow or insert last notch			
RMI evaluated against approved power profile: <input checked="" type="checkbox"/> N/A <input type="checkbox"/> .							
Other Comments: Power may rise to as high as 95% on highest reading APRM by the end of the rod withdrawals.							
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="text-align: center;">RE/STA Date</div> </td> <td style="width: 50%; vertical-align: top;"> Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="text-align: center;">RE/STA/SRO Date</div> </td> </tr> </table>						Step Prepared by: <u>Alex Reed</u> / <u>Today</u> <div style="text-align: center;">RE/STA Date</div>	Step Reviewed by: <u>Jack Dean</u> / <u>Today</u> <div style="text-align: center;">RE/STA/SRO Date</div>
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Approval to perform Step <u>John Aaron</u> / <u>Today</u> Step Completed by: _____ / _____ <div style="display: flex; justify-content: space-between;"> Shift Manager Date SRO Date </div>							

NMP1 ROD MOVEMENT SHEET

Page: 1[illegible]Date Today

Withdrawal

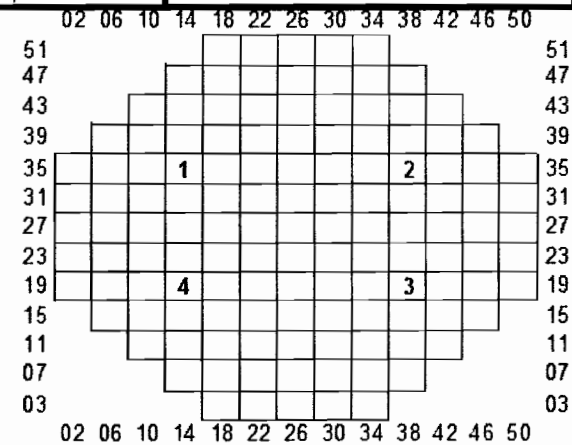
NMP1 ROD MOVEMENT SHEET

Step: 1

Page: 2

FROM: 04		TO: 08					
Control Rod	From	Initials /	Move Complete	NI Check (as Expected)	Coupling Check	Full Out Light	Comments
		To					
14-35	04	08			N/A	N/A	
38-35	04	08			N/A	N/A	
38-19	04	08			N/A	N/A	
14-19	04	08			N/A	N/A	

Additional Qualified Individual confirms rod position by reselecting rods or by using OD-7 printout



Prepared by Mike Reed

Date Today

Verified by Jack Dean

Date Today

Critical Tasks:

- CT-1.0 Given an un-isolable RWCU leak outside primary containment and one general area temperature above the maximum safe limit, the crew will insert a manual reactor scram, in accordance with N1-EOP-5.

- CT-2.0 Given an un-isolable RWCU leak outside primary containment and two general area temperatures above the maximum safe limit, the crew will execute N1-EOP-8, RPV Blowdown, in accordance with N1-EOP-5.

INSTRUCTOR ACTIONS/ PLANT RESPONSE

Take the simulator out of freeze before the crew enters for the pre-shift walkdown and briefing.
Allow no more than 5 minutes for panel walkdown.

Event 1 - Shutdown Condensate Pump 13

Role Play: When directed to slowly close 50-12, acknowledge order, wait approximately 1 minute and **insert remote:**

FW01C, Condensate Pump 13 Discharge Valve 50-12, FV=close

TRG 30

Then report 50-12 is 90% closed.

OPERATOR ACTIONS

CREW

- Conducts pre-brief, walks down the panels, assumes the shift

SRO

- Directs shutdown of Condensate pump 13 per OP-15A, Section H.9.0
- Provides oversight for evolution
- Enters T.S. 3.1.8.b for removal of a redundant HPCI component from service, 15 day LCO

RO

- Monitors plant parameters

BOP

- Acknowledges direction to shutdown Condensate pump 13
- Notifies SRO to enter LCO for HPCI
- Monitors Feedwater Booster pump suction pressure (computer point D454 ~ 123 psig)
- Directs operator in field to slowly close 50-12, BV - COND PMP 13 DISCHARGE
- WHEN the Condensate Pump 13 discharge valve is 90% closed, places the pump control switch in PTL

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 1 continued

Role Play: If contacted as operator to report local FW pump suction pressure, immediately report FW pump suction pressure based on simulator value of FWBP discharge pressure minus 50 psig (~300 psi).

Role Play: When directed to fully close 50-12, acknowledge order, wait approximately 15 seconds and report valve is fully closed.

BOP continued

- Verifies:
 - Maximum Condensate pump motor current \leq 135 amps
 - Minimum FW Booster pump suction pressure within the acceptable range of curve shown in OP-15C attachment 4 (minimum pressure at 85% flow (~6 mlbs/hr) is 72 psig)
 - Minimum FW pump suction pressure \geq 200 psig
- Directs operator in field to fully close 50-12, BV - COND PMP 13 DISCHARGE
- Verifies no abnormal Main Condenser air in-leakage is occurring

Event 2 - Rod Sequence Exchange

Note: Lead examiner may move to the next event once sufficient action is observed on the reactivity manipulation.

Note: RMI includes rods 14-35, 38-35, 38-19, and 14-19

SRO

- Directs performance of Control Rod Sequence Exchange per RMI and OP-5
- Provides oversight for reactivity manipulation

RO

- Acknowledges direction from SRO
- Obtains copy of RMI
- Withdraws control rods per rod movement sheets and OP-5
 - Turns control rod power on
 - Selects rod
 - Uses CONTROL ROD MOVEMENT switch to notch rod
- Monitors APRM indications

BOP

- Monitors Feedwater controls for proper response
 - FWP 13 FCV responding to power change
 - RPV water level remains within program band (65" - 83")

Event 3 - Generator Auto Voltage Regulator

Fails High

When directed by lead examiner, **insert malfunction:**

EG02, Generator Auto Voltage Regulator Fails – Increase

TRG 1

Amplidyne output meter indication rises

Exciter output voltage rises

Generator field current rises

Expected Annunciators:

A3-1-1, TURB GEN EXC. TRANS. 1 TEMP

RECORDER (first)

A7-2-6, GEN VOLT REGULATOR TRIP (second)

CREW

- Recognize/diagnose Auto Voltage Regulator Failure

SRO

- Acknowledges reports
- Directs ARP response
- Directs adjustment of generator reactive load

RO

- Monitors plant parameters
- Places VOLTAGE REG TRANSFER switch to OFF
- Adjusts generator reactive load using exciter field rheostat to 60 MVARs to the bus (OP-32)

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 3 continued

Role Play: When contacted as Power Control, acknowledge the voltage regulator is in manual and request NMP1 supply 100 MVARs to the bus while in manual voltage control.

Role Play: If directed to investigate the voltage regulator failure, wait 3 minutes and report no visible problems at the exciter or breaker cabinet.

BOP

- Executes ARP A7-2-6 for voltage regulator trip
- Confirms computer point F099
- Monitors generator output voltage
- Coordinates with RO to place VOLTAGE REG TRANSFER switch to OFF
- Notifies Power Control that voltage regulator is in manual
- May refer to S-ODP-OPS-0112, Off-Site Power Operations and Interface, attachment 4
- Coordinates with RO to adjust generator reactive load
- Enter OP-32, Sect H.5, raise Vars using Exciter Rheostat to 100 Mvars to the bus.

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 4 - RRP 11 Seal Failures

When directed by lead examiner, **insert malfunctions:**

RR06A, RR Pump 11 Lower (Inner) Seal Failure, RT=3:00, FV=75

RR07A, RR Pump 11 Upper (Outer) Seal Failure, DT=4:00, RT=5:00, FV=60

TRG 2

Initial response:

RRP 11 LP seal pressure rises

Delayed response:

RRP 11 HP seal pressure lowers

RRP 11 LP seal pressure lowers

DW temp, pres and humidity slowly rise

DW leakage rises

Expected annunciators:

F2-1-1, REACT RECIRC PUMP-MOTOR 11

H2-4-7, Drywell Water Leak Detection Sys

Note: Verify **TRG 11** and **TRG 12** automatically re-insert malfunctions **RR06A** and **RR07A** at **10%** when RRP 11 suction and discharge valve green lights energize.

CREW

- Diagnoses/reports RRP 11 inner seal failure
- Diagnoses/reports RRP 11 outer seal failure (later)
- Recognizes/reports degrading Primary Containment parameters (later)

SRO

- Acknowledges reports
- Directs execution of ARP F2-1-1
- Directs entry into SOP-1.2, RRP Seal Failure
- Reviews Technical Specifications
- Determines Drywell leakage rates are affected in Tech Spec 3.2.5
- Determines Tech Spec 3.1.7.e requires power be maintained < 90.5% until the pump isolation is complete
- Verifies power < 90.5%
- Provide oversight of reactivity change during evolution

Event 4 continued

Note: SOP-1.2 defines a seal failure as catastrophic if it results in a noticeable rise in DW pressure or floor drain leakage.

Note: Closing RRP suction and discharges valves during this event is an approved two-handed manipulation.

Note: Allow Reactor water level to recover to normal value before moving to next event in order to avoid a high level Turbine trip.

RO

- Monitors plant parameters
- Monitor total recirculation flow and APRM power levels while RRP 11 is being shutdown and isolated
- Verifies position on four loop Power to Flow Map

BOP

- Executes ARP F2-1-1
- Enters SOP-1.2, RRP Seal Failure
- Initially answers "Did both seals fail on a single Recirc pump?" NO
- Monitors DW equipment drain tank level
- Contacts Engineering for evaluation
- Monitors RRP 11 seal indications for signs of degradation
- Determines 2nd seal is failing
- Re-enters SOP-1.2
- Answers "Did both seals fail on a single Recirc pump?" YES
- Answers "Is failure catastrophic?" YES
- Places RRP 11 control switch to STOP
- Closes RRP 11 bypass valve
- Simultaneously closes RRP suction and discharge valves
- Verifies proximity to restricted zone using four loop Power to Flow Map
- Monitors containment parameters

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 5 - RPV Pressure Transmitter Failure

Resulting in FWLC Deviation

When directed by lead examiner, **insert malfunction:**

RR92, Rx Vesi Pres Xmtr 36-31 (Local-FW Control) Fails - Low

TRG 3

*RPV pressure instrument indicates downscale
Controlling RPV water level instrument indicates
lower than actual*

Feedwater flow rises

RPV water level rises

Expected Annunciator:

F2-3-3, REACT VESSEL LEVEL HIGH-LOW

Note: This event may cause a turbine trip and subsequent reactor scram on high RPV water level if Feedwater flow is not controlled properly. In the event of a scram, TRG 4 should be immediately inserted and the scenario will continue in event 6.

Note: N1-ST-D0 contains acceptance criteria for GEMAC level instrument deviation with regards to HPCI operability.

CREW

- Diagnoses/reports failure of pressure instrument
- Diagnoses/reports failure of FWLC Pressure/Level Column

SRO

- Acknowledges reports
- Directs entry into SOP-16.1 for failure of FWLC
- Directs placing FWLC in manual
- Directs shifting Reactor Pressure/Level Columns per OP-16, section F.10.0
- Reviews Tech Spec 3.1.8 for affect of level instrument deviation on HPCI operability, as time permits

Event 5 continued

Note: Switching level columns may result in Annunciator F2-3-3, REACT VESSEL LEVEL HIGH-LOW, due to circuit interruption.

Note: The same channel of level and pressure should be selected

RO

- Monitor plant parameters
- If directed to shift FWLC pressure/level columns:
 - Verifies Feedwater lineup
 - Verifies BOP has manual control of FWLC
 - Shifts reactor pressure and level columns using the key lock switches on the E Panel
 - Coordinates with BOP to return FWLC to auto:
 - Places FEEDWATER MASTER CONTROL M/A station mode switch in MAN
 - Nulls FWP 13 VALVE CONTROL by adjusting the FEEDWATER MASTER CONTROL station output with the manual knob until the deviation meter indicates 50% on FWP 13 VALVE CONTROL GEMAC
 - Directs BOP to place FWP 13 FCV M/A Station in BAL
 - Controls RPV water level with the manual knob at the FEEDWATER MASTER CONTROL
 - Nulls FEEDWATER MASTER CONTROL setpoint error by adjusting SP ADJUST knob to null the deviation meter (upper, vertical) at midpoint

Event 5 continued

Note: Once the FWP 13 VALVE CONTROL M/A STATION mode switch is in BAL, manual FWLC is shifted to the RO at E-panel

RO continued

- Places FEEDWATER MASTER CONTROL M/A station mode switch in AUTO or BAL
- Confirms system response by adjusting the SP ADJUST knob on FEEDWATER MASTER CONTROL to maintain RPV water level

BOP

- Enters SOP-16.1 due to failure of FWLC
 - Takes manual control of Feedwater pump 13 FCV
 - Manually restores RPV water level to normal band
- If directed to shift FWLC pressure/level columns:
 - Coordinates with RO to return FWLC to auto:
 - Places FWP 13 VALVE CONTROL M/A STATION mode switch in BAL

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Events 6, 7 and 8 - RWCU Leak in the

Secondary Containment, Failure of the RWCU

Isolation Valves, Failure of TBVs

When directed by lead examiner, **insert malfunction:**

CU11, CU Coolant Leak Outside of Drywell

TRG 4

Rising temperatures, pressures and radiation

levels in the Secondary Containment

RBEVS auto-starts

RBVS isolates

RWCU IVs fail to close on isolation signal

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*

K3-3-4, CLEAN-UP SYS LEAK AREA T HI

L1-3-3, CONTINUOUS AIR RAD MONITOR

Later Reactor Building D/P goes to Zero

Verify the following **malfunctions** are **preset**:

CU14, CU Isolation Valves Stuck Open

TC12, All Bypass Valves Fail – Closed,

FV=100%

CREW

- Diagnoses/reports leak from RWCU into secondary containment
- Diagnoses/reports RWCU failed to isolate
- Diagnoses/reports failure of TBVs after the scram

Event 6, 7 and 8 continued

SRO

- Acknowledges reports
- Enters EOP-5, 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
- 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 EOP-5 circle 27
- Determines a primary system is discharging into the Reactor Building and the discharge cannot be isolated, and transitions to EOP-5 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

INSTRUCTOR ACTIONS/
PLANT RESPONSE

OPERATOR ACTIONS

Event 6, 7 and 8 continued

Note: Turbine Bypass Valves are unavailable for pressure control due to a malfunction

Note: Anticipatory blowdown is likely to be directed from EOP-2 once one Reactor Building General Area temperature is above 135°F with a second temperature trending towards 135°F.

SRO continued

- Enters EOP-2, RPV Control on low RPV water level
- Answers "Are all control rods inserted to at least position 04?" YES
- Directs entry into 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
- 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 EOP-8, 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 3 ERVs (CT-2.0)**

Event 6, 7 and 8 continued

RO

- Makes evacuation announcements due to steam leak
- Places Reactor Mode Switch to SHUTDOWN
- 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 $25-43 \times 10^6$ lbm/hr
- Verifies main turbine and generator tripped
- Controls RPV pressure as directed using Emergency Condensers

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

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 may be adjusted by examiner as necessary for evaluation purposes.

Event 6, 7 and 8 continued

Role Play: When directed as operator and RP tech to obtain General Area temperatures and radiation levels in the Reactor Building:

Wait 4 minutes and report RB 261' east side temperature is 125°F and rising, radiation level is 100 mr/hr and rising.

Note: When one general area temperature is reported above 135°F and a second general area temperature is reported as approaching 135°F, the crew is likely to perform an anticipatory blowdown per EOP-2.

Wait 2 more minutes and report RB 261' east side temperature is 137°F and rising, radiation level is 150 mr/hr and rising. Report RB 261' west side temperature is 123°F and rising, radiation level is 35 mr/hr and rising.

Wait 3 more minutes and report RB 261' east side temperature is 145°F and rising, radiation level is 175 mr/hr and rising. Report RB 261' west side temperature is 136°F and rising, radiation level is 45 mr/hr and rising.

BOP continued

- Performs RPV water level control actions of SOP-1:
- Restores RPV water level to 53-95" by controlling injection and rejecting through RWCU, as necessary
- 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
- Maintains RPV water level in assigned band

**INSTRUCTOR ACTIONS/
PLANT RESPONSE**

OPERATOR ACTIONS

Event 6, 7 and 8 continued

BOP continued

- Notifies crew of reports on General Area temperatures and radiation levels
- When EOP-8, RPV Blowdown, is entered:
 - Verifies Emergency Condensers in service
 - **Opens 3 ERVs (CT-2.0)**

Terminating Cues:

- RPV water level controlled in assigned band
- RPV Blowdown in progress