# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | RESPOND TO A CONTROL ROD DRIFT IN |
|---|---|---|---|
| JPM NUMBER: | 80A U3 | REVISION: | 2 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-085-AB-05/ Respond to a Control Rod Drift In | | | |
| K/A RATINGS: | RO: 3.2 SRO: 3.3 | | | |
| K/A No. &STATEMENT: | 201002 Reactor Manual Control System<br>A2.02; Ability to (a) predict the impacts of the following on the REACTOR MANUAL CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Rod Drift Alarm | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 1 | | | |

| EVALUATION LOCATION: | ☐In-Plant | ☒ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 80A U3

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to respond to a Control Rod Drift In per 3-AOI-85-5.

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-2 Controlling plant evolutions precisely.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 3-AOI-85-5, 3-AOI-100-1

VALIDATIONTIME: 13 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
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Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 05/27/10 | All | Initial issue |
| 1 | 05/11/15 | 1 | Incorrect task number; changed to U-085-AB-05:<br>Incorrect malfunction numbers; rd07r0231, rd07r2223 & rd07r3031; Corrected |
| 2 | 10/09/15 | All | Incorporated review comments |
| | | | |
| | | | |

## SIMULATOR SETUP

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|---|---|
| IC | 28 |
| Exam IC | 280 |

| | |
|---|---|
| **Console Operator Instructions** | • **Reset IC 28 or Exam IC if written in above**<br>• **Run schedule file: NRC JPM A U3 –Control Rod Drift In**<br>• **Verify all triggers and overrides are correct**<br>• **Place the simulator in RUN to ensure stable conditions**<br>• **Display CRD Exercise on ICS Display**<br>• **Provide Initial Rod Data Sheet -PRLOG**<br>• **When prompted by the examiner, INSERT - Event 1 to Drift Control Rod 02-31 into the core**<br>• **When prompted by the examiner, INSERT - Event 2 to Drift Control Rod Multiple Control Rods into the core** |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| **rd07r0231** | Drifts rod 02-31 into core | 1 | NA | 35 sec | NA |
| rd07r2223 | Drifts rod 22-23 into core | 2 | NA | 0 sec | NA |
| rd07r3031 | Drifts rod 30-31 into core | 2 | NA | 60 sec | NA |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
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| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

**Schedule File(s): NRC JPM A U3 –Control Rod Drift In**

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is at 100% power

**INITIATING CUES**:

The Unit Supervisor directs you to perform Surveillance 3.1.3.3 step 7.3, Control Rod Exercise Test for Withdrawn Control Rods, for partially withdrawn control rods.

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 1:<br><br>**NOTE**<br>1) Problem details of any control rod issues observed during the performance of this surveillance must be recorded on Attachment 3 for further review and possible corrective maintenance. Slow/fast rod movements or settle times should be noted in the remarks section.<br><br>2) Section 7.3 is performed for all Partially Withdrawn Control Rods and performance of steps is represented by initialing the appropriate CRD exercised on Attachment 1.<br><br>**CAUTIONS**<br>3) Any mispositioned control rod events will be dispositioned by following the direction contained within 3-AOI-85-7.<br><br>4) If a control rod moves unexpectedly one notch beyond its intended position, notify Unit Supervisor, obtain Unit Supervisor concurrence and return the rod to its intended position.<br><br>5) At any time CTP is less than or equal to 10%, entry into LCO 3.1.6 may be required.<br><br>**7.3 Exercising a Partially Withdrawn Control Rod**<br><br>[1] **SELECT** desired control rod by **DEPRESSING** appropriate CRD ROD SELECT pushbutton 3-XS-85-40.<br><br>[2] **OBSERVE** the following for selected control rod:<br>• **CHECK** CRD ROD SELECT pushbutton is brightly ILLUMINATED.<br>• **CHECK** white light on the Full Core Display is ILLUMINATED.<br>• **CHECK** Rod Out Permit light is ILLUMINATED.<br><br>Standard:<br><br>**Selects a withdrawn control rod** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:** **May select any partially withdrawn control rod in any order** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 2:<br><br>[3] **INSERT** control rod one notch by performing the following:<br><br>[3.1] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48 in ROD IN and**RELEASE**.<br><br>[3.2] **OBSERVE** control rod settles into the desired position andROD SETTLE light extinguishes.<br><br>Standard:<br>**Inserts withdrawn control rod one notch** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 3:<br><br>[4] WITHDRAW selected control rod one notch by performing the following:<br>[4.1] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48 in ROD OUT NOTCHand **RELEASE**.<br><br>[4.2] **OBSERVE** control rod settles into the desired position and ROD SETTLE light extinguishes.<br><br>Standard:<br>**Withdraws withdrawn control rod one notch** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 4:<br><br>[5] **DOCUMENT** completion of control rod test as follows:<br><br>[5.1] PERFORMER<br><br>• **INITIAL** Attachment 1 (Control Rod Exercise Data Sheet) in thebox corresponding to the control rod coordinates for the control rodjust exercised to document proper movement and CRD latching.<br><br>[5.2] Concurrent Verifier (CV)<br><br>• **ENSURE** rod inserted and returned to its original position.<br><br>• **INITIAL** Attachment 2 (Control Rod Concurrent Verifier (CV)Check) in the box corresponding to the control rod coordinates forthe rod just exercised. | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Standard:<br>Initials Attachment 1 for exercised control rod and continues to exercise rods. | |
| **Note to Examiner:**<br>• **If prompted by applicant for Concurrent Verification, state "Attachment 2 Concurrent Verification completed by another operator."**<br>• **Perform above actions for @ least two control rods.**<br>• **When satisfied with the number of rod manipulations direct Simulator Booth Operator to insert trigger #1 for Control Rod 02-31 Drift In** | |
| **Note to Simulator Booth Operator:**<br>• **When directed by examiner insert trigger #1 for 02-31 Control Rod Drift In.** | |
| Step 5:<br><br>Performer recognizes control rod 02-31 drift in and responds per 3-AOI-85-5.<br><br>[2] **IF** a Control Rod is moving from its intended position without operator actions, **THEN INSERT** the Control Rod to position 00 using CONTINUOUS IN. (Otherwise N/A)<br><br>[3] **IF** a Control Rod Block occurs during rod insertion due to Rod Worth Minimizer, **THEN BYPASS** the RWM per step 4.2[1] above. (Otherwise N/A)<br><br>Standard:<br>**Responds per 3-AOI-85-5 and inserts control rod 02-31 to full in position as indicated by position 00 indication.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: As RE, "Acknowledge applicant report."** | |
| Step 6:<br><br>[4] **NOTIFY** the Reactor Engineer to Evaluate Core Thermal Limits and Preconditioning Limits for the current Control Rod pattern.<br><br>Standard:<br>Candidate notifies Reactor Engineer to Evaluate Core Thermal limits and Preconditioning Limits for the current Control Rod Pattern | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **CUE: "Acknowledge applicant report."** | |
| **CUE: Acknowledge as RE "performing evaluation".** | |
| Step 7:<br><br>[5] **IF** another Control Rod Drift occurs before Reactor Engineering completes the evaluation,<br><br>• **THEN MANUALLY SCRAM** Reactor and enter 3-AOI-100-1.<br><br>[6] **CHECK** Thermal Limits on ICS (RUNMON).<br><br>Standard:<br><br>Reviews step | SAT<br><br>UNSAT<br><br>N/A |
| **Note to NRC Examiner: "Acknowledge applicant report."** | |
| Step 8:<br><br>Multiple Control Rods Drifting In<br><br>Standard:<br><br>**Recognizes Multiple Control Rods Drift into the Core and Manually Scrams the Reactor per 3-AOI-85-5.**<br><br>• **Depresses both SCRAM Pushbuttons**<br>• **Places mode switch in shutdown**<br>• **Verifies All Rods in**<br><br>**Failure Criteria: If student fails to manually scram the reactor prior to the 3rd control rod drifting in.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 9<br><br>• Performs a Scram Announcement<br><br>o Rx Mode Switch Position: Shutdown<br>o Rod Position: All Full In<br>o Reactor Water Level ____ & Trend ___<br>o Reactor Pressure ____ & Trend ___<br>o MSIV Position: OPEN<br>o Rx Power: <5% | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: "Acknowledge applicant report."** | |
| **Termination Criteria:** **REPEAT BACK SCRAM REPORT THEN STATE, "THIS COMPLETES THE JPM. THAT WILL BE ALL FOR NOW, ANOTHER OPERATOR WILL CONTINUE IN 3-AOI-100-1."** | |

**STOP TIME: _____**

**Provide to Applicant**

**********

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**********

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is at 100% power

**INITIATING CUES**:

The Unit Supervisor directs you to perform Surveillance 3.1.3.3 step 7.3, Control Rod Exercise Test for Withdrawn Control Rods, for partially withdrawn control rods.

VMS;2

1

BROWNSFERRY-3  WK-1517 15APR25-16.17.10  200 MWD/MTU  TRIGR=USER  REV=udec1

+ CONTROL ROD NOTCH POSITIONS FOR BROWNSFERRY-3 +
+ (PROCESS COMPUTER COORDINATES) +

| | 02 | 06 | 10 | 14 | 18 | 22 | 26 | 30 | 34 | 38 | 42 | 46 | 50 | 54 | 58 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 59 | | | | | -- | -- | -- | -- | -- | -- | -- | | | | | 59 |
| 55 | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 55 |
| 51 | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | 51 |
| 47 | | -- | -- | -- | -- | 16 | -- | 12 | -- | 16 | -- | -- | -- | -- | | 47 |
| 43 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 43 |
| 39 | -- | -- | -- | 16 | -- | -- | -- | 16 | -- | -- | -- | 16 | -- | -- | -- | 39 |
| 35 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 35 |
| 31 | -- | -- | -- | 12 | -- | 16 | -- | -- | -- | 16 | -- | 12 | -- | -- | -- | 31 |
| 27 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 27 |
| 23 | -- | -- | -- | 16 | -- | -- | -- | 16 | -- | -- | -- | 16 | -- | -- | -- | 23 |
| 19 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 19 |
| 15 | | -- | -- | -- | -- | 16 | -- | 12 | -- | 16 | -- | -- | -- | -- | | 15 |
| 11 | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | 11 |
| 07 | | | | -- | -- | -- | -- | -- | -- | -- | -- | -- | | | | 07 |
| 03 | | | | | -- | -- | -- | -- | -- | -- | -- | | | | | 03 |
| | 02 | 06 | 10 | 14 | 18 | 22 | 26 | 30 | 34 | 38 | 42 | 46 | 50 | 54 | 58 | |

*** CROD SEQUENCE : A-2 CRD : 0.059 ***

# Job Performance Measure (JPM)

| | | | |
|---|---|---|---|
| SITE: BFN | | JPM TITLE: | EHC Auto Cooldown |
| JPM NUMBER: | 276 U3 | REVISION: | 2 |

| | | | | |
|---|---|---|---|---|
| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
| TASK NUMBER / TASK TITLE(S): | U-000-NO-32 Perform Reactor Cooldown<br>U-000-NO-34 Perform a Reactor Cooldown from Hot Standby Conditions | | | |
| K/A RATINGS: | RO: 3.9 SRO: 3.9 | | | |
| K/A No. &STATEMENT: | 239001Main and Reheat Steam System: A4.09 Ability to manually operate and/or monitor in the control room: Reactor pressure | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 4 | | | |

| | | | | |
|---|---|---|---|---|
| EVALUATION LOCATION: | ☐In-Plant | ☒ Simulator | ☐ Control Room | ☐ Lab |
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 276 U3

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to initiate an Auto Cooldown with Turbine Bypass Valves.

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-2 Controlling plant evolutions precisely.
OF-5 Having a solid understanding of plant design, engineering principles, and sciences.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 3-OI-47

VALIDATIONTIME: 10 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
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_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 06/19/12 | All | Initial issue |
| 1 | 07/22/15 | All | General revision & re-format |
| 2 | 10/09/15 | All | Updated page borders |
| | | | |
| | | | |

## SIMULATOR SETUP

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|---|---|
| IC | 40 |
| Exam IC | 281 |

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|---|---|
| **Console Operator Instructions** | • **Reset IC 40 or Exam IC if written in above**<br>• **Ensure RFP is in Manual on PDS controller with plant parameters stable.**<br>• **Clear cooldown screen**<br>• **Provide marked up procedure for Auto Cooldown.** |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

**Schedule File(s): None**

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Plant has been shutdown in preparation for a refueling outage. The Main Turbine is tripped. Reactor Water Level is stable and under control. Reactor Pressure is stable and being controlled by bypass valves.

**INITIATING CUES**:

The Unit Supervisor directs you to commence an Auto Cooldown to 20 psig in accordance with 3-OI-47, Turbine-Generator System, Section 8.1.2, starting at step [6].

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 1:<br><br>[6] **VERIFY** EHC is in Pressure Control using 3-HS-47-204.<br><br>Standard:<br><br>Observes light on for EHC Pressure Control on 3-HS-47-204. | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[7] On the EHC Work Station on Panel 9-7:<br><br>[7.1] **SELECT** Main Menu from the toolbar at bottom of the screen.<br><br>[7.2] **SELECT** Log In on Display Screen and **ENTER** "OPS" for name and "OPS" for Password.<br><br>[7.3] **SELECT** Auto Cooldown from list of function on the screen.<br><br>Standard:<br><br>**Candidate logs into EHC workstation and selects Auto Cooldown from the list of functions on the screen.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 3:<br><br>[8] On the Auto Cooldown Display Screen<br><br>**CHECK** the following are displayed.<br><br>• Turbine Tripped or All Valves Closed - indicates Reset.<br>• Rx Press Ctrl - indicates Reset.<br><br>Standard:<br><br>• Candidate checks the Turbine Tripped or All Valves Closed -indicates Reset.<br>• Candidate checks Rx Press Ctrl - indicates Reset. | SAT<br><br>UNSAT<br><br>N/A |

| | |
|---|---|
| Step 4:<br><br>[9] On the Auto Cooldown Screen **SET** the desired Final Pressure for cooldown as follows:<br><br>[9.1] **SELECT** the block above the "FINAL PRESSURE TARGET".<br><br>[9.2] **ENTER** the desired pressure using the Display Screen or Key Board.<br><br>[9.3] **WHEN** desired Pressure is entered **SELECT** "OK"<br><br>Standard:<br><br>**Candidate sets the desired final target pressure of 20psig (given in initial conditions).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[10] **WHEN** Cooldown is ready to commence, **THEN**<br><br>[10.1] **VERIFY** Reactor Pressure is stable and being controlled by EHC Pressure Control with at least one Bypass Valve opened. (Adjust setpoint as necessary)<br><br>[10.2] **DEPRESS** the "START" button on the Auto Cooldown Display Screen.<br><br>[11] **WHEN** Caution "Are You Sure You Want to Initiate Auto Cooldown?" appears<br><br>**SELECT** "Yes" Screen Button to start the cooldown.<br><br>Standard:<br><br>**Candidate depresses START and acknowledges "YES' to commence auto cooldown.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| | |
|---|---|
| Step 6:<br><br>[12] **CHECK** the following:<br><br>• EHC PRESSURE SETPOINT, 3-PI-47-162, is lowering.<br>• EHC AUTO COOLDOWN displays "IN PROGRESS"<br><br>Standard:<br><br>Candidate monitors EHC pressure and the auto cooldown is "IN PROGRESS". | SAT<br><br>UNSAT<br><br>N/A |
| Step 7:<br><br>[13] **IF** it is desired to change the Final Pressure Target, **THEN** On the Auto Cooldown Screen.<br><br>[13.1] **SELECT** the block above the "FINAL PRESSURE TARGET"<br><br>[13.2] **ENTER** the desired pressure using the Display Screen or Key Board.<br><br>[13.3] **WHEN** desired Pressure is entered **SELECT** "OK"<br><br>Standard:<br><br>**Candidate adjusts "FINAL PRESSURE TARGET" to 100 psig and recommences the auto cooldown.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue: The Unit Supervisor directs you to adjust the Final Pressure Target to 100 psig.** | |
| **Evaluator Cue: Another operator will continue to monitor the cooldown. This completes your task.** | |

**STOP TIME: _____**

**Provide to Applicant**

**********

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**********

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Plant has been shutdown in preparation for a refueling outage. The Main Turbine is tripped. Reactor Water Level is stable and under control. Reactor Pressure is stable and being controlled by bypass valves.

**INITIATING CUES**:

The Unit Supervisor directs you to commence an Auto Cooldown to 20 psig in accordance with 3-OI-47, Turbine-Generator System, Section 8.1.2, starting at step [6].

# Job Performance Measure (JPM)

| | | | |
|---|---|---|---|
| SITE: BFN | | JPM TITLE: | LOSS OF REFERENCE APRM TO ROD BLOCK MONITOR |
| JPM NUMBER: | 672A U2 | REVISION: | 0 |

| | | | | |
|---|---|---|---|---|
| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
| TASK NUMBER / TASK TITLE(S): | U-085-AL-03 RESPOND TO CONTROL ROD WITHDRAWL BLOCK | | | |
| K/A RATINGS: | RO: 3.1 SRO: 3.3 | | | |
| K/A No. &STATEMENT: | 215002 Rod Block Monitor System A2.03; Ability to (a) predict the impacts of the following on the ROD BLOCK MONITOR SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of associated reference APRM channel: BWR-3,4,5 | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 7 | | | |

| | | | | |
|---|---|---|---|---|
| EVALUATION LOCATION: | ☐In-Plant | ☒ Simulator | ☐ Control Room | ☐ Lab |
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 672A U2

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to bypass an APRM Channel and clear a Control Rod Block from Rod Block Monitoring System.

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-2 Controlling plant evolutions precisely.
OF-5 Having a solid understanding of plant design, engineering principles, and sciences.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-OI-85, 2-OI-92B, 2-ARP-9-5A, 2-SR-3.1.3.5(A)

VALIDATIONTIME: 16 min

PERFORMANCE TIME: _____

COMMENTS: _____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 09/01/15 | All | Initial issue |
| | | | |
| | | | |
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| | | | |

## SIMULATOR SETUP

| | |
|---|---|
| IC | 39 |
| Exam IC | 282 |

| | |
|---|---|
| **Console Operator Instructions** | • **Reset to IC-39 to ~ 30% Reactor Power**<br>• **Open Schedule File: NRC JPM C U2 –RBM APRM Fail Downscale.sch**<br>• **Open Event File: NRC JPM C U2 –RBM APRM Fail Downscale.evt**<br>• **Ensure no control rod is selected.**<br>• **Provide marked up copies of SR-3.1.3.5(A) up to proper control rod group.** |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| NM07L3233C | LPRM AMPLIFIER FAILURE 32-33-C | 15 | 0 | N/A | N/A |
| NM07L4025B | LPRM AMPLIFIER FAILURE 40-25-B | 15 | 0 | N/A | N/A |
| NM07L4033D | LPRM AMPLIFIER FAILURE 40-33-D | 15 | 0 | N/A | N/A |
| NM07L0817B | LPRM AMPLIFIER FAILURE 08-17-B | 15 | 0 | N/A | N/A |
| NM07L4017B | LPRM AMPLIFIER FAILURE 40-17-B | 15 | 0 | N/A | N/A |
| NM07L4041D | LPRM AMPLIFIER FAILURE 40-41-D | 15 | 0 | N/A | N/A |
| NM07L4049B | LPRM AMPLIFIER FAILURE 40-49-B | 15 | 0 | N/A | N/A |
| NM07L4057B | LPRM AMPLIFIER FAILURE 40-57-B | 15 | 0 | N/A | N/A |
| NM07L4817C | LPRM AMPLIFIER FAILURE 48-17-C | 15 | 0 | N/A | N/A |
| NM07L4825C | LPRM AMPLIFIER FAILURE 48-25-C | 15 | 0 | N/A | N/A |
| NM07L4833A | LPRM AMPLIFIER FAILURE 48-33-A | 15 | 0 | N/A | N/A |
| NM07L4841A | LPRM AMPLIFIER FAILURE 48-41-A | 15 | 0 | N/A | N/A |
| NM07L4849C | LPRM AMPLIFIER FAILURE 48-49-C | 15 | 0 | N/A | N/A |
| NM07L0825B | LPRM AMPLIFIER | 15 | 0 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| | FAILURE 08-25-B | | | | |
| NM07L0833D | LPRM AMPLIFIER FAILURE 08-33-D | 15 | 0 | N/A | N/A |
| NM07L0841D | LPRM AMPLIFIER FAILURE 08-41-D | 15 | 0 | N/A | N/A |
| NM07L0849B | LPRM AMPLIFIER FAILURE 08-49-B | 15 | 0 | N/A | N/A |
| NM07L2409B | LPRM AMPLIFIER FAILURE 24-09-B | 15 | 0 | N/A | N/A |
| NM07L2417D | LPRM AMPLIFIER FAILURE 24-17-D | 15 | 0 | N/A | N/A |
| NM07L2425D | LPRM AMPLIFIER FAILURE 24-25-D | 15 | 0 | N/A | N/A |
| NM07L2433B | LPRM AMPLIFIER FAILURE 24-33-B | 15 | 0 | N/A | N/A |
| NM07L2449D | LPRM AMPLIFIER FAILURE 24-49-D | 15 | 0 | N/A | N/A |
| NM07L2457D | LPRM AMPLIFIER FAILURE 24-57-D | 15 | 0 | N/A | N/A |
| NM07L1617C | LPRM AMPLIFIER FAILURE 16-17-C | 15 | 0 | N/A | N/A |
| NM07L1625C | LPRM AMPLIFIER FAILURE 16-25-C | 15 | 0 | N/A | N/A |
| NM07L1633A | LPRM AMPLIFIER FAILURE 16-33-A | 15 | 0 | N/A | N/A |
| NM07L1641A | LPRM AMPLIFIER FAILURE 16-41-A | 15 | 0 | N/A | N/A |
| NM07L1649C | LPRM AMPLIFIER FAILURE 16-49-C | 15 | 0 | N/A | N/A |
| NM07L1657C | LPRM AMPLIFIER FAILURE 16-57-C | 15 | 0 | N/A | N/A |
| NM07L1609A | LPRM AMPLIFIER FAILURE 16-09-A | 15 | 0 | N/A | N/A |
| NM07L3209C | LPRM AMPLIFIER FAILURE 32-09-C | 15 | 0 | N/A | N/A |
| NM07L3217A | LPRM AMPLIFIER FAILURE 32-17-A | 15 | 0 | N/A | N/A |
| NM07L3225A | LPRM AMPLIFIER FAILURE 32-25-A | 15 | 0 | N/A | N/A |
| NM07L3249A | LPRM AMPLIFIER FAILURE 32-49-A | 15 | 0 | N/A | N/A |
| NM07L3257A | LPRM AMPLIFIER FAILURE 32-57-A | 15 | 0 | N/A | N/A |
| NM07L4009D | LPRM AMPLIFIER FAILURE 40-09-D | 15 | 0 | N/A | N/A |

| | | | | | |
|---|---|---|---|---|---|
| NM07L4809A | LPRM AMPLIFIER FAILURE 48-09-A | 15 | 0 | N/A | N/A |
| NM07L5617D | LPRM AMPLIFIER FAILURE 56-17-D | 15 | 0 | N/A | N/A |
| NM07L5633B | LPRM AMPLIFIER FAILURE 56-33-B | 15 | 0 | N/A | N/A |
| NM07L5641B | LPRM AMPLIFIER FAILURE 56-41-B | 15 | 0 | N/A | N/A |
| NM07L3241C | LPRM AMPLIFIER FAILURE 32-41-C | 15 | 0 | N/A | N/A |
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| ZLO4631LGREENT(1) | Control Rod 46-31 GREEN INDICATION | 15 | 0 | N/A | N/A |
| | | | | | |
| | | | | | |

**Schedule File(s):**

Event File: NRC JPM C U2 -RBM APRM Fail Downscale.evt; <TRIGGER id="15" description="APRM Ch 2 Fail Downscale">ZLO4631LGREENT(1) == 0</TRIGGER>

Schedule File: NRC JPM C U2 -RBM APRM Fail Downscale.sch

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- The Reactor is at 30% power
- Startup Sequence Control Rod Movement Data Sheet 2-SR-3.1.3.5(A) completed through group 57.
- No Control Rods are Fast Notching

**INITIATING CUES:**

The US has directed you to raise Reactor Power to 40% IAW 2-OI-85 using the 2-SR-3.1.3.5(A) Attachment ~~2~~ 5 Data Sheet starting on Group 58; Control Rod 14-31.

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 1:<br><br>[1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40.<br><br>Standard:<br><br>**Selects Control Rod by depressing CRD ROD SELECT pushbutton.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN**<br><br>• THROTTLE OPEN 2-PCV-085-0023 CRD, CRD DRIVE WATER PRESS CONTROL VLV, to as low as 180 psid using 2-HS-85-23A. (Otherwise N/A)<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |
| Step 3:<br><br>[3] OBSERVE the following for the selected control rod:<br><br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED<br><br>Standard:<br><br>**VERIFIES**<br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 4:<br><br>[4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**.<br><br>[6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes.<br><br>Standard:<br><br>**PLACED CRD CONTROL SWITCH, 2-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:** **Step is repeated to get Control Rod to Position 04** | |
| Step 6:<br><br>[1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40.<br><br>Standard:<br><br>**Selects Control Rod by depressing CRD ROD SELECT pushbutton.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 7:<br><br>[2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN**<br><br>• THROTTLE OPEN 2-PCV-085-0023 CRD, CRD DRIVE WATER PRESS CONTROL VLV, to as low as 180 psid using 2-HS-85-23A. (Otherwise N/A)<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>[3] OBSERVE the following for the selected control rod:<br><br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED<br><br>Standard:<br><br>**VERIFIES**<br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED | SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 10:<br><br>[5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**.<br><br>[6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes.<br><br>Standard:<br><br>**PLACED CRD CONTROL SWITCH, 2-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:** **Step is repeated to get Control Rod to Position 04** | |
| Step 11:<br><br>[1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40.<br><br>Standard:<br><br>**Selects Control Rod by depressing CRD ROD SELECT pushbutton.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 12:<br><br>[2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN**<br><br>• THROTTLE OPEN 2-PCV-085-0023 CRD, CRD DRIVE WATER PRESS CONTROL VLV, to as low as 180 psid using 2-HS-85-23A. (Otherwise N/A)<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 13:<br><br>[3] OBSERVE the following for the selected control rod:<br><br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED<br><br>Standard:<br><br>**VERIFIES**<br>• CRD ROD SELECT pushbutton is brightly ILLUMINATED<br>• White light on the Full Core Display ILLUMINATED<br>• Rod Out Permit light ILLUMINATED | SAT<br><br>UNSAT<br><br>N/A |
| Step 14:<br><br>[4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing<br><br>Standard:<br><br>**Determines that step in N/A** | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br><br>[5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**.<br><br>[6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes.<br><br>Standard:<br><br>**PLACED CRD CONTROL SWITCH, 2-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner: Step is repeated to get Control Rod to Position 04** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** This begins the Alternate Path section of JPM<br><br>**Simulator Booth Operator:** Ensure Event Trigger #15 to fail APRM 2 Downscale is triggered. | |
| Step 16:<br><br>APRM DOWNSCALE/ OPRM INOP 4<br><br>Sensor/Trip Point:<br>APRM Downscale: <= 5%<br>OPRM Inop: Less than 23 operable cells<br><br>**Sensor Location:**<br>Control Room Panel 2-9-14.<br><br>**Probable Cause:**<br>A. Unbypassed APRM channel at or below sensor set point.<br>B. SI or SR in progress.<br>C. Unit shutdown (Mode 3 or 4).<br>D. Failed sensor.<br><br>**Automatic Action:**<br>A. Rod withdrawal block with Rx Mode Sw. in RUN.(APRM only)<br><br>**Operator Action:**<br>A. DETERMINE which APRM/OPRM channel is downscale/inop.<br><br>B. IF APRM failed downscale, THEN BYPASS channel. REFER TO 2-OI-92B. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 16(continued)<br><br>CONTROL ROD WITHDRAWAL BLOCK 7<br><br>Sensor/Trip Point:<br>Relays: 3A-K1 Nuclear Instrumentation<br>3A-K2 Refuel Equipment in Use High Level in Scram Discharge Volume<br>Scram Discharge Volume High Water Level Bypass<br>Rx Mode Switch in SHUTDOWN<br>PRNM (ANY APRM OPRM or RBM)<br><br>**Sensor Location:**<br>Panel 2-9-28<br>Elevation 593'<br>Aux Instr Room<br><br>**Probable Cause:**<br>A. One or more sensors at or above set point.<br>B. Malfunction of sensor.<br>C. Control rod drop accident<br><br>**Automatic Action:**<br>Rod withdrawal block<br><br>**Operator Action:**<br><br>A. **DETERMINE** initiating condition from corresponding rod withdrawal block alarm(s) and **REFER TO** operator action for alarm(s).<br><br>Standard:<br><br>**Reference 2-ARP-9-5A and identifies APRM Ch 2 is down scale and proceeds to bypass APRM Ch 2 per 2-OI-92B** | |
| **CUE: "Acknowledge applicant report and direct the applicant to perform recommended actions as specified by plant procedures."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 17:<br><br>**NOTES**<br>1) Only one APRM/OPRM in each trip system can be bypassed at a time.<br>2) All operations are performed on Panel 2-9-5 unless specifically stated otherwise.<br>3) In order to prevent inadvertent rod withdrawal block or Reactor scram while operating APRM BYPASS selector switch, Verify that the BLUE BYPASSED lights on Panel 9-14 Voters are extinguished prior to selecting any other channel to be bypassed. After bypassing a channel, the applicable BLUE BYPASSED status lights on Panel 9-14 Voters are required to be illuminated prior to testing, operating, or working on that channel.<br><br>**6.1 Bypassing APRM/OPRM Channel**<br><br>**CAUTION**<br>[QA/C] SPP-10.4 requires approval of the Plant Manager or his designee prior to any planned operation with APRMs bypassed unless bypassing is specifically allowed within approved procedures. [ISE-HPS-92-RO1]<br><br>[1] **REVIEW** all precautions and limitations. **REFER TO** Section 3.0.<br><br>Standard:<br><br>Demonstrates reviewing precautions and limitations section 3.0. | SAT<br><br>UNSAT<br><br>N/A |
| Step 18:<br><br>[2] **PLACE** APRM BYPASS, 2-HS-92-7B/S3, to desired channel to be bypassed.<br><br>Standard:<br><br>**PLACE APRM BYPASS, 2-HS-92-7B/S3, to APRM CH 2** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 19:<br><br>[3] **CHECK** BLUE BYPASSED lights illuminated on Panel 2-9-14 Voters.<br><br>Standard:<br><br>Observes BLUE BYPASS light illuminated on Panel 2-9-14 for APRM CH 2. | SAT<br><br>UNSAT<br><br>N/A |
| Step 20:<br><br>[4] **VERIFY** white bypass light on Panel 2-9-5 is illuminated.<br><br>Standard:<br><br>Observes WHITE BYPASS light illuminated on Panel 2-9-5. | SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **"Another operator will continue actions from here."** | |

**STOP TIME:** _____

**Provide to Applicant**

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- The Reactor is at 30% power
- Startup Sequence Control Rod Movement Data Sheet 2-SR-3.1.3.5(A) completed through group 57.
- No Control Rods are Fast Notching

**INITIATING CUES:**

The US has directed you to raise Reactor Power to 40% IAW 2-OI-85 using the 2-SR-3.1.3.5(A) Attachment ~~2~~ 5 Data Sheet starting on Group 58; Control Rod 14-31.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | 3-EOI APPENDIX-6E INJECTION SUBSYSTEM LINEUP CS SYSTEM II |
|---|---|---|---|
| JPM NUMBER: | 257A U3 | REVISION: | 1 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-000-EM-35/ Lineup Injection Subsystem-Core Spray Loop I(II) in Accordance with EOI Appendix 6D(E) | | | |
| K/A RATINGS: | RO: 3.9 SRO: 3.9 | | | |
| K/A No. &STATEMENT: | 209001 Low Pressure Core Spray System A4.08 Ability to manually operate and/or monitor in the control room: Reactor water level | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 2 | | | |

| EVALUATION LOCATION: | ☐In-Plant | ☒ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: _257A U3_

RO __ SRO _____ DATE: _____

TASK STANDARD: Perform operations necessary to identify and corrects Inboard and Outboard Injection Valve lineup in order to inject water into the RPV with Core Spray System II to recover level

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-5 Having a solid understanding of plant design, engineering principles, and sciences.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 3-EOI APPENDIX-6E

VALIDATIONTIME: 5 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 12/06/10 | All | Initial issue |
| 1 | 04/27/15 | All | General revision & re-format |
| | | | |
| | | | |
| | | | |

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 283 |

| | |
|---|---|
| **Console Operator Instructions** | **1. Open Schedule File**<br>**2. Open Event File**<br>**3. Reset to IC-28 and take out of freeze.**<br>**4. Man Scram Rx and place MS to SD.**<br>**5. Open 6 ADS Valves.**<br>**6. Wait until various alarms with Supp Pool Temp High come in to save IC.** |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| TH22 | COOLANT LEAK INSIDE DRYWELL | 15 | 75% | 5 | Yes |
| CS04A | CORE SPRAY LOGIC POWER FAILURE DIV I | 15 | N/A | N/A | Yes |
| CS04B | CORE SPRAY LOGIC POWER FAILURE DIV II | 15 | N/A | N/A | Yes |
| CS02B | CS INBOARD INJECTION VALVE AUTO OPENING FAILURE (FCV-75-53) | 15 | N/A | N/A | Yes |
| RH06A | RHR LOGIC POWER FAILURE DIV I | 15 | N/A | N/A | Yes |
| RH06B | RHR LOGIC POWER FAILURE DIV II | 15 | N/A | N/A | Yes |
| RC01 | RCIC TURBINE TRIP SYSTEM FAILURE | 15 | N/A | N/A | Yes |
| HP04 | HPCI STEAM SUPPLY VALVE AUTO OPENING FAILURE | 15 | N/A | N/A | Yes |
| FW01A | CONDENSATE PUMP TRIP 3A | 15 | N/A | 10 | Yes |
| FW01B | CONDENSATE PUMP TRIP 3B | 15 | N/A | 10 | Yes |

| | | | | | |
|---|---|---|---|---|---|
| FW01C | CONDENSATE PUMP TRIP 3C | 15 | N/A | 10 | Yes |
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | CS Loop I Injection Valve | N/A | N/A | N/A | CLOSED |
| | CS Loop II Injection Valve | N/A | N/A | N/A | CLOSED |
| | | | | | |

**Schedule File(s): JPM 257A U3 Core Spray Alt Inj.sch**

**Event File(s): JPM 257A U3 Core Spray Alt Inj.evt**

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is Shutdown
- RPV Water Level is lowering slowly.
- 3-EOI-1 has been entered and followed to RC-L6.

**INITIATING CUES**:

Core Spray injection is required per EOI-1 and the Unit Supervisor directs you to inject water into the RPV to restore RPV water level above (-)162 inches (TAF) using 3-EOI-APPENDIX-6D or 3-EOI-APPENDIX-6E, Injection Subsystems Lineup Core Spray System.

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Examiner Note:** **Student may use Loop I or II Core Spray System.**<br><br>**Note:** **The following is for Loop I Core Spray 3-EOI-APPEDIX-6D, Go to page 10 if student begins with CS Loop II.**<br><br>**DRIVER:** **REMOVE CORE SPRAY INJECTION VALVE OVERRIDE FOR CORE SPRAY LOOP THAT IS NOT SELECTED FIRST.** | |
| Step 1:<br><br>Location: Unit 3 Control Room<br>Attachments: 1. NPSH Monitoring<br><br>[1] **VERIFY OPEN** the following valves:<br><br>• 3-FCV-75-2, CORE SPRAY PUMP 3A SUPPR POOL SUCT VLV<br>• 3-FCV-75-11, CORE SPRAY PUMP 3C SUPPR POOL SUCT VLV<br>• 3-FCV-75-23, CORE SPRAY SYS I OUTBD INJECT VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-2, 3-FCV-11 and 3-FCV-75-23 are open.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY CLOSED 3**-FCV-75-22, CORE SPRAY SYS I TEST VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-22 closed** | SAT<br><br>UNSAT<br><br>N/A |
| Step 3:<br><br>[3] **VERIFY** CS Pump 3A and/or 3C running.<br><br>Standard:<br><br>**Starts Core Pumps 3A and/or 3C** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 4:<br><br>[4] **WHEN** RPV pressure is below 450 psig, **THEN**<br><br>**THROTTLE** 3-FCV-75-25, CORE SPRAY SYS I INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump.<br><br>Standard:<br><br>**Operator attempt to open 3-FCV-75-25 and observes valve does not open.** | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: If reported to US, acknowledge report and state "Proceed as directed in initial conditions."**<br><br>**Operator should proceed to Core Spray Loop II and proceed with 3-EOI-APPENDIX-6E** | |
| Step 5:<br><br>Location: Unit 3 Control Room<br>Attachments: 1. NPSH Monitoring<br><br>[1] **VERIFY OPEN** the following valves:<br><br>• 3-FCV-75-30, CORE SPRAY PUMP 3B SUPPR POOL SUCT VLV<br>• 3-FCV-75-39, CORE SPRAY PUMP 3D SUPPR POOL SUCT VLV<br>• 3-FCV-75-51, CORE SPRAY SYS II OUTBD INJECT VALVE.<br><br>Standard:<br>**Verifies3-FCV-75-30, 3-FCV-75-39 and 3-FCV-75-51 are open.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 7:<br><br>[2] **VERIFY CLOSED** 3-FCV-75-50, CORE SPRAY SYS II TEST VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-50 closed** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 8:<br><br>[3] **VERIFY** CS Pump 3B and/or 3D running.<br><br>Standard:<br><br>**Starts Core Pumps 3B and/or 3D (Only starting one pump is Critical, the second pump is optional).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4] **WHEN** RPV pressure is below 450 psig, **THEN**<br><br>**THROTTLE** 3-FCV-75-53, CORE SPRAY SYS II INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump.<br><br>Standard:<br><br>**Verifies pressure < 450 psig and opens 3-FCV-75-53 and commences injection. (And verify flow <4000 gpm for 1 pump or <8000 gpm for 2 pumps).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 10:<br><br>**CAUTION**<br>Continuous operation with inadequate NPSH may result in pump damage or pump inoperability.<br><br>[5] **MONITOR** Core Spray Pump NPSH using Attachment 1.<br><br>Standard:<br>**Operator compares Core Spray pump flow rate with Suppression Pool temperature and Suppression Pool pressure and Determined adequate NPSH.** | SAT<br><br>UNSAT<br><br>N/A |
| **Termination Criteria: Once rector Water Level is > TAF JPM may be terminated. IF student fails to recover reactor water level above TAF (-162 inches), it will be considered a failure.** | |

**STOP TIME: _____**

**END OF TASK**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Examiner Note:** **Student may use Loop I or II Core Spray System.**<br><br>**Note:** **The following is for Loop II Core Spray 3-EOI-APPEDIX-6E** | |
| Step 1:<br><br>Location: Unit 3 Control Room<br>Attachments: 1. NPSH Monitoring<br><br>[1] **VERIFY OPEN** the following valves:<br><br>• 3-FCV-75-30, CORE SPRAY PUMP 3B SUPPR POOL SUCT VLV<br>• 3-FCV-75-39, CORE SPRAY PUMP 3D SUPPR POOL SUCT VLV<br>• 3-FCV-75-51, CORE SPRAY SYS II OUTBD INJECT VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-30, 3-FCV-39 and 3-FCV-75-51 are open.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY CLOSED 3**-FCV-75-50, CORE SPRAY SYS II TEST VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-50 closed** | SAT<br><br>UNSAT<br><br>N/A |
| Step 3:<br><br>[3] **VERIFY** CS Pump 3B and/or 3D running.<br><br>Standard:<br><br>**Starts Core Pumps 3B and/or 3D** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 4:<br><br>[4] **WHEN** RPV pressure is below 450 psig, **THEN**<br><br>**THROTTLE** 3-FCV-75-53, CORE SPRAY SYS II INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump.<br><br>Standard:<br><br>**Operator attempt to open 3-FCV-75-53 and observes valve does not open.** | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: If reported to US, acknowledge report and state "Proceed as directed in initial conditions."**<br><br>**Operator should proceed to Core Spray Loop I and proceed with 3-EOI-APPENDIX-6D** | |
| Step 5:<br><br>Location: Unit 3 Control Room<br>Attachments: 1. NPSH Monitoring<br><br>[1] **VERIFY OPEN** the following valves:<br><br>• 3-FCV-75-2, CORE SPRAY PUMP 3A SUPPR POOL SUCT VLV<br>• 3-FCV-75-11, CORE SPRAY PUMP 3C SUPPR POOL SUCT VLV<br>• 3-FCV-75-23, CORE SPRAY SYS I OUTBD INJECT VALVE.<br><br>Standard:<br>**Verifies3-FCV-75-2, 3-FCV-75-11 and 3-FCV-75-23 are open.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 7:<br><br>[2] **VERIFY CLOSED** 3-FCV-75-22, CORE SPRAY SYS I TEST VALVE.<br><br>Standard:<br><br>**Verifies 3-FCV-75-22 closed** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 8:<br><br>[3] **VERIFY** CS Pump 3A and/or 3C running.<br><br>Standard:<br><br>**Starts Core Pumps 3A and/or 3C (Only starting one pump is Critical, the second pump is optional).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4] **WHEN** RPV pressure is below 450 psig, **THEN**<br><br>**THROTTLE** 3-FCV-75-25, CORE SPRAY SYS I INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump.<br><br>Standard:<br><br>**Verifies pressure < 450 psig and opens 3-FCV-75-25 and commences injection. (And verify flow <4000 gpm for 1 pump or <8000 gpm for 2 pumps).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 10:<br><br>**CAUTION**<br>Continuous operation with inadequate NPSH may result in pump damage or pump inoperability.<br><br>[5] **MONITOR** Core Spray Pump NPSH using Attachment 1.<br><br>Standard:<br>**Operator compares Core Spray pump flow rate with Suppression Pool temperature and Suppression Pool pressure and Determined adequate NPSH.** | SAT<br><br>UNSAT<br><br>N/A |
| **Termination Criteria: Once rector Water Level is > TAF JPM may be terminated. IF student fails to recover reactor water level above TAF (-162 inches), it will be considered a failure.** | |

**STOP TIME: _____**

**END OF TASK**

**Provide to Applicant**

**********

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**********

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is Shutdown
- RPV Water Level is lowering slowly.
- 3-EOI-1 has been entered and followed to RC-L6.

**INITIATING CUES**:

Core Spray injection is required per EOI-1 and the Unit Supervisor directs you to inject water into the RPV to restore RPV water level above (-)162 inches (TAF) using 3-EOI-APPENDIX-6D or 3-EOI-APPENDIX-6E, Injection Subsystems Lineup Core Spray System.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | 2-EOI Appendix-11F Alternate RPV Pressure Control Systems: RFPT On Minimum Flow |
|---|---|---|---|
| JPM NUMBER: | 670A U2 | REVISION: | 2 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-000-EM-58 Lineup Alternate RPV Pressure Control Systems- RFPT on Minimum Flow IAW EOI Appendix 11F | | | |
| K/A RATINGS: | RO: 3.6 SRO: 3.6 | | | |
| K/A No. &STATEMENT: | 239001 Main and Reheat Steam System A1.01 Ability to predict and/or monitor changes in parameters associated with operating the MAIN ANDREHEAT STEAM SYSTEM controls including: Main steam pressure | | | |
| RELATED PRA INFORMATION: | None | | | |
| SAFETY FUNCTION: | 3 | | | |

| EVALUATION LOCATION: | ☐ In-Plant | ☒Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 670A U2

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to necessary to place one RFPT in pressure control as directed by 2-EOI Appendix-11F.

Operator Fundamental evaluated: Monitoring plant conditions and indications closely and controlling plant evolutions precisely.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure: 2-EOI-APPENDIX-11F

VERIFICATION TIME: 15 min

PERFORMANCE TIME: _____

COMMENTS: _____

_____

_____

_____

_____

_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 284 |

| | |
|---|---|
| Sched File/ Event File | 1. NRC JPM E U2–Alt RPV Press Control RFP Min Flow.sch<br>2. NRC JPM E U2–Alt RPV Press Control RFP Min Flow RFPT Trip.evt |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| fw15a | SPURIOUS RFP BEARING LOW OIL PRESSURE | 15 | N/A | 0 | N/A |
| fw15b | SPURIOUS RFP BEARING LOW OIL PRESSURE | 15 | N/A | 0 | N/A |
| tc03a-j | Fail Bypass Valves closed | 1 | 0% | 0 | N/A |
| ad01e 20 | SRV 1-31 stuck open 20% | 1 | 20% | 0 | N/A |
| | | | | | |
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

Initial Setup:

1. Reset to IC 28
2. Manually Scram RX
3. Trip 2A and 2B RFPT
4. Run Schedule File: NRC JPM E U2–Alt RPV Press Control RFP Min Flow
5. Insert Manual Trigger #1
6. After 2A RFPT Speed is <350 RPM Open Event File: NRC JPM E U2–Alt RPV Press Control RFP Min Flow

7. Verify Auto Trigger #15 is ACTIVE
8. Freeze simulator and save IC.

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 09/01/15 | All | Initial issue |
| 1 | 11/02/15 | All | Incorporate NRC Prep week comments |
| 2 | 11/04/15 | 14 | Add note and driver instructions before step 1, to match Unit 3 JPM. |
| | | | |
| | | | |

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-4. Reactor water level control is in automatic on RFPT 2C.

**INITIATING CUES**:

The Unit Supervisor directs you to place a RFPT in alternate pressure control per 2-EOI-APPENDIX-11F, Alternate RPV Pressure Control Systems RFPT on Minimum Flow.

**START TIME**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** **The applicant may start on either RFPT A or B. If started on RFPT B 1st proceed to page 13**<br><br>**Driver Note:** **Remove malfunction for RFPT that is NOT being placed in service.** | |
| Step 1:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br><br>**AND**<br><br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER** EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 4:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction toRFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to bestarted.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 2A | SAT<br><br>UNSAT<br><br>N/A |
| Step 6:<br><br>[4.3] **VERIFY CLOSED** 2-FCV-3-19, RFP 2ADISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 2-FCV-3-19, RFP 2A DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 7:<br><br>[4.4] **DEPRESS** 2-HS-46-8A RFPT 2A SPEED CONT RAISE/LOWER, and **VERIFY** amber lightis illuminated.<br><br>Standard:<br><br>**Depresses 2-HS-46-8A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>[4.5] **DEPRESS** 2-HS-3-124A, RFPT 2A TRIP RESET.<br><br>Standard:<br><br>**Depresses 2-HS-3-124A and verifies the 2-Z1-1-123 LP Stop Valve and 2-Z1-127 HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4.6] **PLACE** 2-HS-46-112A RFPT 2A START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 2-HS-46-112A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:**<br>• **RFPT A will Trip due to Low Bearing Oil Pressure at > 350 RPM** | |
| Step 10:<br><br>[4.7] **CHECK** RFPT 2A speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Operator responds to RFPT A Trip and reports to US and begins to use B RFP for RPV Pressure Control per 2-EOI-APPENDIX-11F. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: "Acknowledge applicant report and direct applicant to perform actions as specified by plant procedures."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 11:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br>**AND**<br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER** EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 12:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 13:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 14:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction toRFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 2B | SAT<br><br>UNSAT<br><br>N/A |
| Step 16:<br><br>[4.3] **VERIFY CLOSED** 2-FCV-3-12, RFP 2B DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 2-FCV-3-12, RFP 2B DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 17:<br><br>[4.4] **DEPRESS** 2-HS-46-9A, RFPT 2BSPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 2-HS-46-9A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 18:<br><br>[4.5] **DEPRESS** 2-HS-3-150A, RFPT 2B TRIP RESET.<br><br>Standard:<br><br>**Depresses 2-HS-3-150A and verifies the LP Stop Valve and HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 19:<br><br>[4.6] **PLACE** 2-HS-46-138A, RFPT 2B START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 2-HS-46-138A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 20:<br><br>[4.7] **CHECK** RFPT 2B speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Verifies RFPT 2B speed increases to approximately 600 rpm | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 21:<br><br>[4.8] **VERIFY OPEN** 2-FCV-3-13, RFP 2B MIN FLOW VALVE.<br><br>Standard:<br><br>Verifies 2-FCV-3-13 OPEN | SAT<br><br>UNSAT<br><br>N/A |
| Step 21:<br><br>**CAUTION**<br>RFP discharge pressure is limited to below 1250 psig to avoid system damage.<br><br>[4.9] **PLACE** 2-HS-46-9A, RFPT 2B SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.<br><br>Standard:<br><br>**Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on pressure indicator for RFPT 2B.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **Prior to securing JPM, state "Lower Reactor Pressure an addition 20 psig."**<br><br>**Cue:** **When satisfied with pressure reduction state, "another operator will continue from here".** | |

**STOP TIME: _____**

**END OF TASK**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** The applicant may start on either RFPT A or B.<br><br>**Driver Note:** Remove malfunction for RFPT that is NOT being placed in service. | |
| Step 1:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br><br>**AND**<br><br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER** EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 4:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction to RFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 2B | SAT<br><br>UNSAT<br><br>N/A |
| Step 6:<br><br>[4.3] **VERIFY CLOSED** 2-FCV-3-12, RFP 2B DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 2-FCV-3-12, RFP 2B DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 7:<br><br>[4.4] **DEPRESS** 2-HS-46-9A RFPT 2B SPEED CONT RAISE/LOWER, and **VERIFY** amber lightis illuminated.<br><br>Standard:<br><br>**Depresses 2-HS-46-9A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>[4.5] **DEPRESS** 2-HS-3-150A, RFPT 2B TRIP RESET.<br><br>Standard:<br><br>**Depresses 2-HS-3-150A and verifies the LP Stop Valve and HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4.6] **PLACE** 2-HS-46-138A RFPT 2B START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 2-HS-46-138A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:**<br>• **RFPT A will Trip due to Low Bearing Oil Pressure at > 350 RPM** | |
| Step 10:<br><br>[4.7] **CHECK** RFPT 2B speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Operator responds to RFPT B Trip and reports to US and begins to use B RFP for RPV Pressure Control per 2-EOI-APPENDIX-11F. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: "Acknowledge applicant report and direct applicant to perform actions as specified by plant procedures."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 11:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br>**AND**<br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER**<br>EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 12:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 13:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 14:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction toRFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 2A | SAT<br><br>UNSAT<br><br>N/A |
| Step 16:<br><br>[4.3] **VERIFY CLOSED** 2-FCV-3-19, RFP 2A DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 2-FCV-3-19, RFP 2A DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 17:<br><br>[4.4] **DEPRESS** 2-HS-46-8A, RFPT 2A SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 2-HS-46-8A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 18:<br><br>[4.5] **DEPRESS** 2-HS-3-124A, RFPT 2B TRIP RESET.<br><br>Standard:<br><br>**Depresses 2-HS-3-124A and verifies the LP Stop Valve and HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 19:<br><br>[4.6] **PLACE** 2-HS-46-112A, RFPT 2A START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 2-HS-46-112A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 20:<br><br>[4.7] **CHECK** RFPT 2A speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Verifies RFPT 2A speed increases to approximately 600 rpm | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 21:<br><br>[4.8] **VERIFY OPEN** 2-FCV-3-20, RFP 2A MIN FLOW VALVE.<br><br>Standard:<br><br>Verifies 2-FCV-3-20 OPEN | SAT<br><br>UNSAT<br><br>N/A |
| Step 21:<br><br>**CAUTION**<br>RFP discharge pressure is limited to below 1250 psig to avoid system damage.<br><br>[4.9] **PLACE** 2-HS-46-8A, RFPT 2A SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.<br><br>Standard:<br><br>**Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on pressure indicator for RFPT 2A.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **Prior to securing JPM, state "Lower Reactor Pressure an addition 20 psig."**<br><br>**Cue:** **When satisfied with pressure reduction state, "another operator will continue from here".** | |

**STOP TIME: _____**

**END OF TASK**

**Provide to Applicant**

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-4. Reactor water level control is in automatic on RFPT 2C.

**INITIATING CUES**:

The Unit Supervisor directs you to place a RFPT in alternate pressure control per 2-EOI-APPENDIX-11F, Alternate RPV Pressure Control Systems RFPT on Minimum Flow.

# Job Performance Measure (JPM)

| | | | |
|---|---|---|---|
| SITE: BFN | | JPM TITLE: | 3-EOI Appendix-11F Alternate RPV Pressure Control Systems: RFPT On Minimum Flow |
| JPM NUMBER: | JPM 670A U3 | REVISION: | 0 |

| | | | | |
|---|---|---|---|---|
| TASK APPLICABILITY: | ☒ SRO | ☐ STA | ☒ UO | ☐ NAUO |
| TASK NUMBER / TASK TITLE(S): | U-000-EM-58 Lineup Alternate RPV Pressure Control Systems- RFPT on Minimum Flow IAW EOI Appendix 11F | | | |
| K/A RATINGS: | RO: 3.6 SRO: 3.6 | | | |
| K/A No. & STATEMENT: | 239001 Main and Reheat Steam System A1.01 Ability to predict and/or monitor changes in parameters associated with operating the MAIN AND REHEAT STEAM SYSTEM controls including: Main steam pressure | | | |
| RELATED PRA INFORMATION: | None | | | |
| SAFETY FUNCTION: | 3 | | | |

| | | | | |
|---|---|---|---|---|
| EVALUATION LOCATION: | ☐ In-Plant | ☒ Simulator | ☐ Control Room | ☐ Lab |
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 670A U3

RO ____ SRO ____ DATE: _____

TASK STANDARD: Perform operations necessary to necessary to place one RFPT in pressure control as directed by 3-EOI Appendix-11F.

Operator Fundamental evaluated: Monitoring plant conditions and indications closely and controlling plant evolutions precisely.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure: 3-EOI-APPENDIX-11F

VALIDATION TIME: 15 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 284 |

| | |
|---|---|
| Sched File/ Event File | 1. NRC JPM E U3–Alt RPV Press Control RFP Min Flow.sch<br>2. NRC JPM E U3–Alt RPV Press Control RFP Min Flow RFPT Trip.evt |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| fw15a | SPURIOUS RFP BEARING LOW OIL PRESSURE | 15 | N/A | 0 | N/A |
| fw15b | SPURIOUS RFP BEARING LOW OIL PRESSURE | 15 | N/A | 0 | N/A |
| tc03a-j | Fail Bypass Valves closed | 1 | 0% | 0 | N/A |
| ad01e | SRV 1-31 stuck open | 1 | 26% | 0 | N/A |
| | | | | | |
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |

Initial Setup:

1. Reset to IC 28
2. Manually Scram RX
3. Trip 2A and 2B RFPT
4. Run Schedule File: NRC JPM E U2–Alt RPV Press Control RFP Min Flow
5. Insert Manual Trigger #1
6. After 2A RFPT Speed is <350 RPM Open Event File: NRC JPM E U2–Alt RPV Press Control RFP Min Flow
7. Verify Auto Trigger #15 is ACTIVE

8. Freeze simulator and save IC.

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 09/01/15 | All | Initial issue |
| | | | |
| | | | |
| | | | |
| | | | |

**IN-SIMULATOR:** I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3. The Unit 3 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-4. Reactor water level control is in automatic on RFPT 3C.

**INITIATING CUES**:

The Unit Supervisor directs you to place a RFPT in alternate pressure control per 3-EOI-APPENDIX-11F, Alternate RPV Pressure Control Systems RFPT on Minimum Flow.

**START TIME**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** **The applicant may start on either RFPT A or B. If started on RFPT B 1st proceed to page 13**<br><br>**Driver Note:** **Remove malfunction for RFPT that is NOT being placed in service.** | |
| Step 1:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br><br>**AND**<br><br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER**<br>EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 4:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction to RFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 3A | SAT<br><br>UNSAT<br><br>N/A |
| Step 6:<br><br>[4.3] **VERIFY CLOSED** 3-FCV-3-19, RFP 3A DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 3-FCV-3-19, RFP 3A DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 7:<br><br>[4.4] **DEPRESS** 3-HS-46-8A, RFPT 3A SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 3-HS-46-8A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>[4.5] **DEPRESS** 3-HS-3-124A, RFPT 3A TRIP RESET.<br><br>Standard:<br><br>**Depresses 3-HS-3-124A and resets RFPT Trip and verifies the 3-ZI-1-123 LP Stop Valve and 3-ZI-127 HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4.6] **PLACE** 3-HS-46-112A RFPT 3A START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 3-HS-46-112A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:**<br>• **RFPT A will Trip due to Low Bearing Oil Pressure at > 350 RPM** | |
| Step 10:<br><br>[4.7] **CHECK** RFPT 3A speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Operator responds to RFPT A Trip and reports to US and begins to use B RFP for RPV Pressure Control per 3-EOI-APPENDIX-11F. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: "Acknowledge applicant report and direct applicant to perform actions as specified by plant procedures."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 11:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br>**AND**<br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER**<br>EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 12:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 13:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 14:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction to RFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 3B | SAT<br><br>UNSAT<br><br>N/A |
| Step 16:<br><br>[4.3] **VERIFY CLOSED** 3-FCV-3-12, RFP 3B DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 3-FCV-3-12, RFP 3B DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 17:<br><br>[4.4] **DEPRESS** 3-HS-46-9A, RFPT 3B SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 3-HS-46-9A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 18:<br><br>[4.5] **DEPRESS** 3-HS-3-150A, RFPT 3B TRIP RESET.<br><br>Standard:<br><br>**Depresses 3-HS-3-150A and verifies the 3-ZI-1-133 LP Stop Valve and 3-FCV-135 HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 19:<br><br>[4.6] **PLACE** 3-HS-46-138A, RFPT 3B START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 3-HS-46-138A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 20:<br><br>[4.7] **CHECK** RFPT 3B speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Verifies RFPT 3B speed increases to approximately 600 rpm | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 21:<br><br>[4.8] **VERIFY OPEN** 3-FCV-3-13, RFP 3B MIN FLOW VALVE.<br><br>Standard:<br><br>Verifies 3-FCV-3-13 OPEN | SAT<br><br>UNSAT<br><br>N/A |
| Step 21:<br><br>**CAUTION**<br>RFP discharge pressure is limited to below 1250 psig to avoid system damage.<br><br>[4.9] **PLACE** 3-HS-46-9A, RFPT 3B SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.<br><br>Standard:<br><br>**Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on pressure indicator for RFPT 3B.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: Prior to securing JPM, state "Lower Reactor Pressure an addition 20 psig."**<br><br>**Cue: When satisfied with pressure reduction state, "another operator will continue from here".** | |

**STOP TIME _____**

**END OF TASK**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** The applicant may start on either RFPT A or B.<br><br>**Driver Note:** Remove malfunction for RFPT that is NOT being placed in service. | |
| Step 1:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br><br>**AND**<br><br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER** EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 4:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction to RFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 5:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 3B | SAT<br><br>UNSAT<br><br>N/A |
| Step 6:<br><br>[4.3] **VERIFY CLOSED** 3-FCV-3-12, RFP 3B DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 3-FCV-3-12, RFP 3B DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 7:<br><br>[4.4] **DEPRESS** 3-HS-46-9A, RFPT 3B SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 3-HS-46-9A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>[4.5] **DEPRESS** 3-HS-3-150A, RFPT 3A TRIP RESET.<br><br>Standard:<br><br>**Depresses 3-HS-3-124A and resets RFPT Trip and verifies the LP Stop Valve and HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[4.6] **PLACE** 3-HS-46-138A RFPT 3B START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 3-HS-46-112A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner:**<br>• **RFPT B will Trip due to Low Bearing Oil Pressure at > 350 RPM** | |
| Step 10:<br><br>[4.7] **CHECK** RFPT 3B speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Operator responds to RFPT B Trip and reports to US and begins to use A RFP for RPV Pressure Control per 3-EOI-APPENDIX-11F. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: "Acknowledge applicant report and direct applicant to perform actions as specified by plant procedures."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 11:<br><br>[1] **IF** BOTH of the following exist:<br>• Emergency RPV Depressurization is required,<br>**AND**<br>• Group 1 Isolation Signal exists, **THEN**<br><br>**EXIT** this procedure and **ENTER**<br>EOI Appendix 11H.<br><br>Standard:<br><br>Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve. | SAT<br><br>UNSAT<br><br>N/A |
| Step 12:<br><br>[2] **VERIFY** MSIVs open.<br><br>Standard:<br><br>Verifies MSIVs OPEN | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 13:<br><br>[3] **VERIFY** Hotwell Pressure at or below -7 in. Hg.<br><br>Standard:<br><br>Verifies Hotwell Pressure at or below -7 in. Hg | SAT<br><br>UNSAT<br><br>N/A |
| Step 14:<br><br>[4] **PLACE** RFPTs in service as follows:<br><br>[4.1] **VERIFY** the following:<br>[4.1.1] At least one condensate pump running.<br>[4.1.2] At least one condensate booster pump running.<br>[4.1.3] Condensate System aligned to supply suction to RFPs.<br><br>Standard:<br><br>Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs. | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br><br>[4.2] **VERIFY** Main Oil Pump running for each RFPT to be started.<br><br>Standard:<br><br>Verifies main oil pump running for RFPT 3A | SAT<br><br>UNSAT<br><br>N/A |
| Step 16:<br><br>[4.3] **VERIFY CLOSED** 3-FCV-3-19, RFP 3A DISCHARGE VALVE.<br><br>Standard:<br><br>**Operator closes 3-FCV-3-19, RFP 3A DISCHARGE VALVE.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 17:<br><br>[4.4] **DEPRESS** 3-HS-46-8A, RFPT 3A SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.<br><br>Standard:<br><br>**Depresses 3-HS-46-8A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 18:<br><br>[4.5] **DEPRESS** 3-HS-3-124A, RFPT 3A TRIP RESET.<br><br>Standard:<br><br>**Depresses 3-HS-3-124A and verifies the LP Stop Valve and HP Stop Valve comes OPEN.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 19:<br><br>[4.6] **PLACE** 3-HS-46-112A, RFPT 3A START/LOCAL ENABLE, in START.<br><br>Standard:<br><br>**Places 3-HS-46-112A in START** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 20:<br><br>[4.7] **CHECK** RFPT 3A speed increases to approximately 600 rpm.<br><br>Standard:<br><br>Verifies RFPT 3A speed increases to approximately 600 rpm | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 21:<br><br>[4.8] **VERIFY OPEN** 3-FCV-3-20, RFP 3A MIN FLOW VALVE.<br><br>Standard:<br><br>Verifies 3-FCV-3-20 OPEN | SAT<br><br>UNSAT<br><br>N/A |
| Step 21:<br><br>**CAUTION**<br>RFP discharge pressure is limited to below 1250 psig to avoid system damage.<br><br>[4.9] **PLACE** 3-HS-46-8A, RFPT 3A SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.<br><br>Standard:<br><br>**Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on pressure indicator for RFPT 3A.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: Prior to securing JPM, state "Lower Reactor Pressure an addition 20 psig."**<br><br>**Cue: When satisfied with pressure reduction state, "another operator will continue from here".** | |

**STOP TIME: _____**

**END OF TASK**

**Provide to Applicant**

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**INITIAL CONDITIONS:**

You are an Operator on Unit 3. The Unit 3 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-4. Reactor water level control is in automatic on RFPT 3C.

**INITIATING CUES**:

The Unit Supervisor directs you to place a RFPT in alternate pressure control per 3-EOI-APPENDIX-11F, Alternate RPV Pressure Control Systems RFPT on Minimum Flow.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | N2 MAKEUP TO PRIMARY CONTAINMENT WITH 3-EOI-APPENDIX-14A |
|---|---|---|---|
| JPM NUMBER: | 669 U3 | REVISION: | 0 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-000-EM-77 Lineup nitrogen Makeup to primary Containment IAW EOI-APPENDIX-14A | | | |
| K/A RATINGS: | RO: 3.7SRO: 3.8 | | | |
| K/A No. &STATEMENT: | 223001 Primary Containment System and Auxiliaries A2.04**;** Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences ofthose abnormal conditions or operations: High containment/drywell hydrogen concentration | | | |
| RELATED PRA INFORMATION: | None | | | |
| SAFETY FUNCTION: | 5 | | | |

| EVALUATION LOCATION: | ☐ In-Plant | ☒Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ☒ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: _669 U3_

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to establish Nitrogen Makeup to Primary Containment and lower Primary Containment Hydrogen Concentration.

Operator Fundamental evaluated: Monitoring plant conditions and indications closely and controlling plant evolutions precisely.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure: 3-EOI-APPENDIX-14A

VERIFICATION TIME: 15 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 285 |
| Sched File/ Event Files | • JPM 669 U3 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.sch<br>• Appendix\App. 8E.sch<br>• JPM 669 U3 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.evt<br>• Align sample source to Suppression Chamber. |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| TH22 | COOLANT LEAK INSIDE DRYWELL | 2 | 100 | 0 | Yes |
| TH23 | FUEL CLADDING DAMAGE | 2 | 100% | 0 | N/A |
| RC08 | RCIC STEAM SUPPLY VALVE AUTO OPENING FAILURE | 1 | N/A | 0 | N/A |
| HP04 | HPCI STEAM SUPPLY VALVE AUTO OPENING FAILURE | 1 | N/A | 0 | N/A |
| CS04A | CORE SPRAY LOGIC POWER FAILURE DIV I | 1 | N/A | 0 | N/A |
| CS04B | CORE SPRAY LOGIC POWER FAILURE DIV II | 1 | N/A | 0 | N/A |
| RD01A | CRD PUMP TRIP 2A | 1 | N/A | 0 | N/A |
| RD01B | CRD PUMP TRIP 2B | 1 | N/A | 0 | N/A |
| FW01C | CONDENSATE PUMP TRIP 2C | 1 | N/A | 0 | N/A |
| PC08 | H2 IN DRYWELL_ | 2 | 29 | 0 | N/A |

| | | | | | |
|---|---|---|---|---|---|
| PC09 | OXYGEN IN DRYWELL_ | 2 | 2.8 | 0 | N/A |
| PC10 | H2 IN SUPPRESSION POOL_ | 2 | 18 | 0 | N/A |
| PC11 | OXYGEN IN SUPPRESSION POOL_ | 2 | 1.5 | 0 | N/A |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| ZLOXA554C9 | DW EQUIP DRAIN SUMP LEVEL ABNORMAL | 2 | N/A | N/A | ON |
| | | | | | |
| | | | | | |
| | | | | | |

**Control Board Setup:**

- Open Event File
- Reset to IC-28 and take out of freeze.
- Man Scram Rx and place MS to SD.
- Inhibit ADS & Open 6 ADS Valves.
- Fire Trigger 2
- Place H2/O2 Analyzer in service with H2/O2 ISOL BYP Keylock Switch in BYPASS per EOI APPDX 19
- Place DW Vent in Service per EOI APPX 12
- Wait for Group 6 schedule file to time out and alarms to settle
- Place HS for H2/O2 Monitor in Suppression Chamber.
- Freeze simulator and save IC.

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 10/09/15 | All | Initial issue |
| | | | |
| | | | |
| | | | |
| | | | |

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**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is shutdown.
- 3-EOI-APPENDIX-12 has been completed.
- 3-EOI-APPENDIX-19 has been completed.
- PCIS Group 6 has been overridden per 3-EOI-APPENDIX-8E.

**INITIATING CUES**:

The Unit Supervisor directs you to lower Hydrogen Concentration by performing 3-EOI-APPENDIX-14A beginning on step 2.

**START TIME**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 1:<br><br>2. **MONITOR** Drywell and Suppression Chamber $H_2$ and $O_2$ concentrations on one or more of the following displays(3-EOI Appendix 19):<br><br>• 3-MON-76-110, H2/O2 ANALYZER (Panel 3-9-55)<br>• 3-XR-76-110, H2/O2 CONCENTRATION (Panel 3-9-54)<br><br>Standard:<br><br>Verifies H2 and O2 concentrations | SAT<br><br>UNSAT<br><br>N/A |
| Step 2:<br><br>3. **IF** ..... Drywell/Suppression Chamber $H_2$ /$O_2$ analyzer is or becomes inoperable,<br><br>**THEN** .....**NOTIFY** Chemistry Lab to sample Drywell andSuppression Chamber for $H_2$ and $O_2$ using CI-644.<br><br>Standard:<br><br>Verifies Drywell/Suppression Chamber $H_2$ /$O_2$ analyzers are Operable | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>4. **WHEN** ..... Drywell or Suppression Chamber $H_2$ or $O_2$ concentration is increasing,**THEN** ..... **CONTINUE** in this procedure.<br><br>Standard:<br><br>Observes a rise in Drywell H2 Concentration and continues with procedure. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: If asked by applicant, state "perform the task in accordance with initiating cue."** | |
| Step 4:<br>**NOTE**<br>This procedure assumes that the normal makeup is from $N_2$ Storage Tank B.<br><br>5. **DISPATCH** personnel to $N_2$ Storage Tank B to **CHECK** 0-PI-76-331, N2 TANK B PRESSURE INDICATOR between 160 and 190 psig.<br><br>Standard:<br><br>Dispatches UO to verify$N_2$ Storage Tank B Pressure | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: $N_2$ Storage Tank B Pressure is reading 180 psig** | |
| Step 5:<br><br>6. **DETERMINE** area with highest $H_2$ and/or $O_2$ concentrations and **INFORM** SRO.<br><br>Standard:<br><br>**Correctly determines highest concentration is in the drywell and informs US** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: Time compression may be used for sample point stabilization following switch manipulation.** | |
| **DW H2:_____** **Supp Chamber H2:_____** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 6:<br><br>7. **VERIFY** PCIS RESET (Panel 3-9-4).<br><br>Standard:<br><br>**Operator resets PCIS RESET on Panel 2-9-4 using Div 1 and Div II PCIS Reset Switches.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 7:<br><br>8. **IF** ..... It is desired to makeup $N_2$ to the Suppression Chamber,**THEN** .....**CONTINUE** in this procedure at Step 10.<br><br>Standard:<br><br>**Correctly determine step is not applicable and proceeds to step 9.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 8:<br><br>9. **CONTROL** Drywell $H_2$ and $O_2$ as follows:<br><br>a. **OPEN** the following valves to admit $N_2$ to Drywell (Panel 3-9-3):<br><br>• 3-FCV-76-18, DRYWELL N2 MAKEUP INBDISOLATION VLV<br>• 3-FCV-76-17, PRI CTMT N2 MAKEUP OUTBDISOLATION VLV.<br><br>Standard:<br><br>**OPENS 3-FCV-76-18, DRYWELL N2 MAKEUP INBD ISOLATION VLV &3-FCV-76-17, PRI CTMT N2 MAKEUP OUTBD ISOLATION VLV** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>b. **SLOWLY ADJUST** 3-PC-76-14, DW/SUPPR CHBR N2 MUPRESS CONTROL (Panel 3-9-3), to maintain flow between 55 and60 scfm on 3-XR-76-14, DW/SUPPR CHBR N2 MAKEUPFLOW/PRESS (Panel 3-9-3), or as directed by SRO if SAMGexecution is in progress.<br><br>Standard:<br><br>**Operator establishes a high enough flowrate to establish a lowering trend on Drywell Hydrogen Concentration** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: SAMG Execution is NOT in progress.** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 10:<br><br>c. **CONTINUE** $N_2$ admission to the Drywell UNTIL Drywell $H_2$ and $O_2$ are below desired values.<br><br>Standard:<br><br>Monitors Drywell Hydrogen Concentration | SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner: Operator establishes a high enough flowrate to establish a lowering trend on Drywell Hydrogen Concentration; state "Another operator will continue from here.** | |

**STOP TIME: _____**

**END OF TASK**

**Provide to Applicant**

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**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is shutdown.
- 3-EOI-APPENDIX-12 has been completed.
- 3-EOI-APPENDIX-19 has been completed.
- PCIS Group 6 has been overridden per 3-EOI-APPENDIX-8E.

**INITIATING CUES**:

The Unit Supervisor directs you to lower Hydrogen Concentration by performing 3-EOI-APPENDIX-14A beginning on step 2.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | Restore Offsite Power to 4KV shutdown board at PNL 9-23 |
|---|---|---|---|
| JPM NUMBER: | 631 U2 | REVISION: | 0 |

| TASK APPLICABILITY: | ■ SRO | ☐ STA | ■ UO | ☐ NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-082-NO-09 / Restore Offsite Power to 4KV shutdown board at PNL 9-23 | | | |
| K/A RATINGS: | RO 3.4 SRO 3.4 | | | |
| K/A STATEMENT: | 262001 A.C. Electrical Distribution A4.02 Ability to manually operate and/or monitor in the control room: Synchroscope, including understanding of running andincoming voltages | | | |
| RELATED PRA INFORMATION: | N/A | | | |
| SAFETY FUNCTION: | 6 | | | |

| EVALUATION LOCATION: | ☐ In-Plant | ■ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ■ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____ _____
*Developer* *Date*
(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 631 U2

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to restore offsite power to 4KV SD BD A from 4KV SD BUS 1.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure 0-OI-82

VERIFICATION TIME: 15 Min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 286 |

| | |
|---|---|
| Console Operator Instructions | 1. Reset to IC 28 and take out of freeze<br>2. Start A EDG and parallel with offsite<br>3. Open 4-kV Shutdown Board A Breaker 1614 |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |

**********

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**********

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- No Inclement weather currently exists in the area
- 2 hours ago, 4 KV Shutdown Board A was separated from Offsite Power in accordance with 0-OI-82, Standby Diesel Generator System.

**INITIATING CUE:**

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board A using the normal feeder breaker and remove DG A from parallel operation in accordance with 0-OI-82, Section 8.3, Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23.

**START TIME**

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 1:<br><br>
0-OI-82 Standby Diesel Generator System<br><br>
Section 8.3 Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23<br><br>
NOTE<br>
The following list of 4-kV shutdown board normal and alternate feeder breakers may be useful when performing this section:<br><br>
<table>
<tr><th>Shutdown Board</th><th>A</th><th>B</th><th>C</th><th>D</th></tr>
<tr><td>Norm Feed Bkr</td><td>1614</td><td>1616</td><td>1718</td><td>1724</td></tr>
<tr><td>Alt Feed Bkr</td><td>1716</td><td>1714</td><td>1624</td><td>1618</td></tr>
</table>
<br>
[1] VERIFY 4-kV Shutdown Board A is being supplied power by its respective Diesel Generator as the only source of power.<br><br>
Standard:<br><br>
Verifies 4-kV Shutdown Board A is being supplied by DG A.
</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>
Step 2:<br><br>
[2] VERIFY the associated 4kV shutdown board auto transfer lockout relay is tripped to MANUAL.<br><br>
<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>A</td><td>4KV SD BD A AUTO/LOCKOUT RESET</td><td>0-211-3EA</td><td>0-9-23-7</td></tr>
</table>
<br>
Standard:<br><br>
Verifies 4KV SD BD A AUTO/LOCKOUT RESET, HS-0-211-A, is tripped to manual.
</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 3:<br><br>[3] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator in ON.<br><br>Standard:<br><br>Places Synchroscope switch for 4-kV Shutdown Board A normal feeder breaker 1614 to ON.</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>Step 4:<br><br>[4] VERIFY 4-kV Shutdown Bus 1(2) voltage is between 3950 Volts and 4400 Volts and NOT undergoing abnormal voltage transients.<br><br>Standard:<br><br>Verifies 4-kV Shutdown Bus 1 voltage is between 3950 Volts and 4400 Volts and NOT undergoing abnormal voltage transients.</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>Step 5:<br><br>[5] VERIFY associated incoming frequency is between 59 Hertz and 61 Hertz and NOT undergoing abnormal frequency transients.<br><br><table><tr><th>Shutdown Bd</th><th>Instrument Name</th><th>Instrument No.</th><th>Panel</th></tr><tr><td>A or B</td><td>GEN SYNC FREQUENCY</td><td>0-SI-82-0AB</td><td>0-9-23-7</td></tr><tr><td>C or D</td><td>GEN SYNC FREQUENCY</td><td>0-SI-82-0CD</td><td>0-9-23-8</td></tr></table><br>Standard:<br><br>Verifies incoming frequency is between 59 Hertz and 61 Hertz and NOT undergoing abnormal frequency transients using GEN SYNC FREQUENCY,0-SI-82-AB.</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 6:<br><br>CAUTION<br>DO NOT parallel the Diesel Generators with an unstable offsite source or during inclementweather (e.g., lightning, heavy winds).<br><br>[6] IF 4-kV Shutdown Bus 1 (2) is experiencing abnormal voltage or frequency conditions, THEN PERFORM the following:<br><br>Standard:<br><br>STEP N/A</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>Step 7:<br><br>CAUTION<br>Only one Unit 1 and 2 Diesel Generator at a time is allowed to be operated in parallel with system.<br><br>[7] PULL and PLACE the associated Diesel Generator mode selector switch in PARALLELED WITH SYSTEM.<br><br><table><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr><tr><td>A</td><td>DG A MODE SELECT</td><td>0-HS-82-A/5A</td><td>0-9-23-7</td></tr></table><br>Standard:<br><br>Pulls DG A MODE SELECT switch 0-HS-82-A/5A and places it in PARALLELED WITH SYSTEM.</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
</table>

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 8:<br><br>**CAUTION**<br>Failure of the PARALLELED WITH SYSTEM light to illuminate in the following step could indicate that the DG is still in SINGLE UNIT operation and result in overload when the DG output breaker is closed.<br><br>[8] **RELEASE** the Diesel Generator mode selector switch and **OBSERVE** PARALLELED WITH SYSTEM light illuminated.<br><br>Standard:<br><br>**Releases the Diesel Generator A mode selector switch, 0-HS-82-A/5A and observes PARALLELED WITH SYSTEM light is illuminated.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 9:<br><br>[9] **ADJUST** Diesel Generator frequency using the associated Diesel Generator governor control switch to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the SLOW direction.<br><br>**Diesel** \| **Handswitch Name** \| **Handswitch No.** \| **Panel**<br>A \| DG A GOVERNOR CONTROL \| 0-HS-82-A/3A \| 0-9-23-7<br><br>Standard:<br><br>**AdjustsDiesel Generator A frequency using Diesel Generator governor control switch, 3-HS-82-A/3A, (in lower direction) to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the SLOW direction.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 10:<br><br>
[10] USE the associated Diesel Generator voltage regulator control switch to match Diesel Generator and System voltages.
<table>
<tr><th>Diesel</th><th>Instrument Name</th><th>Inst No.</th><th>Panel</th></tr>
<tr><td rowspan="3">A</td><td>DG A VOLT REGULATOR CONT</td><td>0-HS-82-A/2A</td><td rowspan="3">0-9-23-7</td></tr>
<tr><td>GEN SYNC REF VOLTAGE</td><td>0-EI-82-AB</td></tr>
<tr><td>SYSTEM SYNC REF VOLTAGE</td><td>0-EI-211-0AB</td></tr>
</table>
Standard:<br><br>
Matches DG A voltage with system voltage using DG A VOLT REGULATOR CONT switch 0-HS-82-A/2A.
</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>
Step 11:<br><br>
[11] WHEN the synchroscope needle is approximately 2 minutes on the right hand side of the 12 o'clock position, THEN CLOSE the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator.<br><br>
Standard:<br><br>
Closes the 4-kV shutdown board feeder breaker 1614 when the synchroscope needle is approximately + or - 5 minutes from the 12 o'clock position.
</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>
Step 12:<br><br>
[12] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that was paralleled with the Diesel Generator in OFF.<br><br>
Standard:<br><br>
Places the synchroscope switch for BKR 1614 in OFF.
</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
</table>

| STEP / STANDARD | SAT / UNSAT |
|---|---|

Step 13:

**NOTE**
If diesel operates greater than 4 hours at less than 50% load, the diesel should be loaded to full load for at least 30 minutes prior to engine shutdown. This will allow the engine to clean out any oil accumulations from the exhaust manifolds.

[13] **IF** DG has been operating at a low-load condition (≤50%) for an extended period of time (≥4 hours) **THEN** **PERFORM** the following (Otherwise N/A):

[13.1] **USE** the associated Diesel Generator's governor controlswitch and voltage regulator control switch to**INCREASE** kW and kVAR load, in increments of 100kWevery 15 minutes.

SAT

UNSAT

N/A

| Diesel | Handswitch Name | Hands witch No. | Panel |
|---|---|---|---|
| A | DG A GOVERNOR CONTROL | 0-HS-82-A/3A | 0-9-23-7 |
| | DG A VOLT REGULATOR CONTROL | 0-HS-82-A/2A | |

[13.2] **OBSERVE** the exhaust stack smoke concentration from outside the DG room after each incremental increase.
[13.3] **STEP N/A**
[13.4] **WHEN** smoke becomes relatively clear, **CONTINUE** to load DG engine to 100% if possible.
[13.5] **MAINTAIN 100% load for a minimum of 30 minutes.**

Standard:

**Step is N/A**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 14:<br>**NOTE**<br>Lagging VARs should be maintained when adjusting kW load (rising or lowering). This may require kW load adjustment to be stopped periodically to allow for adjusting kVAR load. Once desired kW load is achieved, Illustration 1 should be referred to for determination of kVAR loading required to obtain a power factor (pf) of 0.8 lagging. Diesel generator kVAR load should then be adjusted to obtain a 0.8 pf lagging. **IF** system conditions will **NOT** permit the kVAR loading required to obtain a 0.8 pf lagging, kVAR load should be adjusted to the maximum kVAR lagging the system will allow.<br><br>[14] **USE** the associated Diesel Generator's governor control switch and voltage regulator control switch to obtain desired kW and kVAR load.<br><br>**Diesel** / **Handswitch Name** / **Handswitch No.** / **Panel**<br>A / DG A GOVERNOR CONTROL / 0-HS-82-A/3A / 0-9-23-7<br>A / DG A VOLT REGULATOR CONT / 0-HS-82-A/2A / 0-9-23-7<br><br>Standard:<br><br>**Obtains desired kW and kVAR load using DG A Governor Control switch, 0-HS-82-A/3A and DG Volt Regulator Cont switch, 0-HS-82-A/2A.** | SAT<br><br>UNSAT<br><br>N/A |
| Step 15:<br>[15] **MONITOR** the offsite source that is paralleled with the Diesel Generator.<br>[16] **IF** abnormal voltage or frequency transients are experienced, **THEN**<br>[16.1] **VERIFY OPEN** DG A(B,C,D) output Bkr 1818 (1822, 1812, 1816).<br>[16.2] **PULL OUT and RELEASE** the associated Diesel Generator control switch in NORMAL to initiate the shutdown sequence.<br>[16.3] REFER TO Section 7.1 and CONTINUE with Shutting down the Diesel Generator.<br>[16.4] REFER TO 0-OI-57A and TRANSFER the 4-kv shutdown bus to a stable offsite source as deemed appropriate by US.<br><br>Standard:<br><br>**Monitors offsite source and step [16] is N/A** | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 16:<br><br>[17] **WHEN** Parallel with System operation is no longer desired, **THEN UNLOAD** the Diesel Generator as follows:<br><br>**CAUTION**<br>When unloading the Diesel Generator, failure to slowly approach the 300 kW/250 kVARlimit may result in a reverse power trip of the Diesel Generator output breaker.<br><br>[17.1] **USE** the associated Diesel Generator's governor control switch and voltage regulator control switch to reduce generator load to approximately 300 kW and 250 kVAR: | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| Diesel | Instrument Name | Inst No. | Panel |
|---|---|---|---|
| A | DG A GOVERNOR CONTROL | 0-HS-82-A/3A | 0-9-23-7 |
| | DG A VOLTAGE REGULATOR CONTROL | 0-HS-82-A/2A | |
| | DG A KILOWATTS | 0-JI-82-A/A | |
| | DG A KILOVARS | 0-VAR-82-A/A | |

Standard:

**Unloads the DG to approximately 300 KW and 250 kVAR.**

Step 17

[17.2] **PLACE** the associated Diesel Generator breaker control switch in TRIP

| Diesel | Handswitch Name | Handswitch No. | Panel |
|---|---|---|---|
| A | DG A BKR 1818 | 0-HS-211-A/22A | 0-9-23-7 |

Standard:

**Trips Diesel Generator breaker 1818.**

**Critical Step**

SAT

UNSAT

N/A

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 18:<br><br>[17.3] PULL and PLACE the associated Diesel Generator mode selector switch in SINGLE UNIT.<br><br>
<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>A</td><td>DG A MODE SELECT</td><td>0-HS-211-A/5A</td><td>0-9-23-7</td></tr>
</table>
<br>Standard:<br><br>Pulls and places 0-HS-211-A/5A to Single Unit.</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td>Step 19:<br><br>[17.4] RELEASE the Diesel Generator mode selector switch and OBSERVE the SINGLE UNIT light illuminated.<br><br>Standard:<br><br>Verifies Single Unit light illuminated.</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td colspan="2">CUE: ANOTHER OPERATOR WILL CONTINUE FROM HERE</td></tr>
</table>

**STOP TIME _**

**END OF TASK**

**Provide to Applicant**

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- No Inclement weather currently exists in the area
- 2 hours ago, 4 KV Shutdown Board A was separated from Offsite Power in accordance with 0-OI-82, Standby Diesel Generator System.

**INITIATING CUE:**

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board A using the normal feeder breaker and remove DG A from parallel operation in accordance with 0-OI-82, Section 8.3, Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | Respond to Off-Gas Post Treatment Radiation HI-HI-HI |
|---|---|---|---|
| JPM NUMBER: | 190 U2 | REVISION: | 0 |

| TASK APPLICABILITY: | SRO ■ | STA ☐ | UO ■ | NAUO ☐ |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-066-AB-02 –Respond to Off-Gas Post Treatment Radiation Hi-Hi-Hi | | | |
| K/A RATINGS: | RO 2.9 SRO 3.2 | | | |
| K/A STATEMENT: | 271000 Offgas System: A2.16; Ability to (a) predict the impacts of the following on the OFFGAS SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of offgas system loop seals (2.9/3.2) | | | |
| RELATED PRA INFORMATION: | N/A | | | |
| SAFETY FUNCTION: | 9 | | | |

| EVALUATION LOCATION: | ☐ In-Plant | ■ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☐ Simulate/Walkthrough ■ Perform

TIME FOR COMPLETION: N/A TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: 190 U2

RO SRO DATE: _____

TASK STANDARD: Respond to Off-Gas Post Treatment Radiation HI-HI-HI per 2-AOI-66-2 and/or 2-ARP-9-4C/35

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-AOI-66-2, 2-ARP-9-4C/35

VALIDATION TIME: 15 Minutes

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____ (Retain entire JPM for records)

SIGNATURE: _____ DATE: _____
EXAMINER

## SIMULATOR SETUP

| | |
|---|---|
| IC | 28 |
| Exam IC | 287 |

| | |
|---|---|
| **Console Operator Instructions** | 1. Reset to IC 28<br>2. Fire Manual Trigger 2<br>3. Fire Manual Trigger 1<br>4. Station 2nd operator to respond to alarms<br>5. Insert a core flow runback. |

| Malfunctions | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| TH23 | FUEL CLADDING DAMAGE | 1 | 5 | N/A | YES |
| RM14C | OFFGAS RAD MONITOR FAILURERM-90-265A | 3 | 1E6 CPS | N/A | YES |
| RM14D | OFFGAS RAD MONITOR FAILURE RM-90-266A | 3 | 1E6 CPS | N/A | YES |

| Remotes | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| OG06 | Bypass FCV-66-28 Post Treatment Hi-Hi-Hi Rad Isol | 2 | N/A | N/A | BYP |
| | | | | | |

| Overrides | Description | Event | Severity | Delay | Initial set |
|---|---|---|---|---|---|
| ZAORI9014A | RX BLDG AREA RAD | 1 | 2.5 | N/A | YES |
| ZAORI9017A | RX BLDG AREA RAD | 1 | 2.6 | N/A | YES |
| ZAORM90265A | 90-265 METER UPSCALE | 3 | 6.0 | N/A | YES |
| ZAORM90266A | 90-266 METER UPSCALE | 3 | 6.0 | N/A | YES |
| ZAORR90135R1 | 90-135 RECORDER UPSCALE PEN 1 | 3 | 6.0 | N/A | YES |
| ZAORR90135R2 | 90-135 RECORDER UPSCALE PEN 2 | 3 | 6.0 | N/A | YES |

| | | | | | |
|---|---|---|---|---|---|
| ZLORM90265A_1 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90265A_2 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90265A_3 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90265A_4 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90266A_1 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90266A_2 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90266A_3 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| ZLORM90266A_4 | 90-265 DRAW LITE | 1 | N/A | N/A | YES |
| XA553A5 | OG PRETREAT RAD HI | 1 | N/A | N/A | YES |
| XA553A6 | STACK GAS RAD HI HI | 1 | N/A | N/A | YES |
| XA553A7 | MSL RAD HI | 1 | N/A | N/A | YES |
| XA553A13 | STACK GAS RAD HI | 1 | N/A | N/A | YES |
| XA554C26 | CARBON BED VAULT RAD HI | 1 | N/A | N/A | YES |
| XA554C27 | OG ANNUAL RELEASE LIMIT EXCEEDED | 1 | N/A | N/A | YES |
| XA554C33 | OG POST TREAT RAD HI | 1 | N/A | N/A | YES |
| XA554C34 | OG POST TREAT RAD HI HI | 1 | N/A | N/A | YES |
| XA554C35 | OG POST TREAT RAD HI HIHI | 1 | N/A | N/A | YES |
| ZDIHS6628 | 66-28 VALVE CLOSED | 1 | N/A | N/A | YES |
| ZAORR90265R1 | 90-265 RECORDER UPSCALE PEN 1 | 3 | 6.0 | N/A | YES |
| ZAORR90265R2 | 90-265 RECORDER UPSCALE PEN 2 | 3 | 6.0 | N/A | YES |
| ZAORR90160R1 | OG PRETREAT RECORDER UPSCALE | 1 | -2.0 | N/A | YES |
| XA554B2 | RWCU FILTER INLET CNDT HIGH | 1 | N/A | N/A | YES |

**Schedule File(s): JPM 190 U2 OG Post treat Rad HI HIHI**

**IN-SIMULATOR:**

I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are the Unit 2 Operator. Unit 2 is at 79% power.

**INITIATING CUE:**

Respond to plant conditions.

**START TIME_____**

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Performance Step 1:<br><br>When directed, identify/obtain copy of ARP-9-4C, window 35.<br><br>Standard:<br><br>**Obtains copy of 2-ARP-9-4C, window 35** | SAT<br><br>UNSAT<br><br>N/A |
| **Examiner Note: Candidate may recognize the annunciator as an entry condition and go directly to 2-AOI-66-2. In that event, continue at Performance Step 5.** | |
| Performance Step 2:<br><br>**2-ARP-9-4C window 35**<br>**Operator Action:**<br><br>A. **VERIFY** alarm condition on the following<br>• OFFGAS POST-TREATMENT RADIATION recorder, 2-RR-90-265 on Panel 2-9-2.<br>• OG POST-TREATMENT CHAN A RAD MON RTMR radiationmonitor, 2-RM-90-266A on Panel 2-9-10.<br>• OG POST-TREATMENT CHAN B RAD MON RTMR radiationmonitor, 2-RM-90-265A on Panel 2-9-10.<br><br>Standard:<br><br>**Verified alarm condition on 2-RR-90-265 and 2-RM-265/266.** | SAT<br><br>UNSAT<br><br>N/A |
| Performance Step 3:<br><br>B. **VERIFY** OFF-GAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 has the Mechanical Restraint **DISENGAGED** and 2-FCV-66-28 isCLOSED.<br><br>Standard:<br><br>**Takes handswitch 2-FCV-66-28 to close and observes green light illuminated and red light out.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue: When dispatched state "The AUO reports Offgas Isolation Valve, 2-FCV-66-28 is NOT mechanically restrained."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Performance Step 4:<br><br>C. **REFER** to 2-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi<br><br>Standard:<br><br>**Refers to 2-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi** | SAT<br><br>UNSAT<br><br>N/A |
| Performance Step 5:<br>**2-AOI-66-2**<br>**4.0 OPERATOR ACTIONS**<br>**4.1 Immediate Actions**<br><br>[1] **IF** scram has not occurred, **THEN**<br><br>PERFORM the following:<br><br>[1.1] **IF** core flow is above 60%, **THEN**<br><br>**REDUCE** core flow to between 50-60%.<br>Standard:<br><br>**Reduced core flow to between 50-60% with recirc system.** | SAT<br><br>UNSAT<br><br>N/A |
| Performance Step 6:<br><br>[1.2] **MANUALLY SCRAM** the Reactor. (Reference 2-AOI-100-1).<br>Standard:<br><br>• **Depresses both SCRAM Pushbuttons**<br>• **Places mode switch in shutdown**<br>• **Verifies All Rods in**<br>• **Performs a Scram Announcement**<br><br>**Examiner Note: The scram report and referring to 2-AOI-100-1 are not considered critical.** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: State, "Another operator will continue SCRAM actions."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Performance Step 7:<br><br>**4.2 Subsequent Actions**<br><br>[1] **IF** OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-066-0028has been mechanically restrained open due to plant conditions**THEN**<br><br>**DISENGAGE** 2-FCV-066-0028 mechanical restraint by rotating the restraining handwheel fully in the counterclockwisedirection, locally at the Stack. (Otherwise N/A)<br><br>Standard:<br><br>**Verifies that 2-FCV-066-0028 in NOT mechanically restrained.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: When dispatched state "The AUO reports Offgas Isolation Valve, 2-FCV-66-28 is NOT mechanically restrained."** | |
| Performance Step 8:<br><br>[2] VERIFY CLOSED OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 on Panel 2-9-53 or locally.<br><br>Standard:<br><br>**Verifies 2-FCV-66-28 is closed at panel 9-53 by Verifying RED light above handswitch extinguished and GREEN light above handswitch illuminated. (May have already verified valve closed from the ARP).** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Examiner Note: Step 8 is not critical if 2-FCV-66-28 is already verified valve closed from 2-ARP-9-4C window 35** | |
| Performance Step 9:<br><br>[3] **MONITOR** area radiation levels at Panel: 2-9-11.<br><br>Standard:<br><br>**Monitored radiation levels at Panel 9-11.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: Another operator will monitor and evaluate Area Radiation Levels.** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Performance Step 10:<br><br>[4] **REFER TO** EPIP-1 for emergency classification level and response.<br><br>Standard:<br><br>**Notifies SM to implement EPIP-1.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: The Shift Manager is implementing the EPIPs as needed.** | |
| Performance Step 11:<br><br>[5] **MONITOR** the following parameters:<br><br>A. MAIN STEAM LINE RADIATION, 2-RR-90-135, Panel 2-9-2.<br><br>B. OFFGAS PRETREATMENT RADIATION 2-RR-90-157, Pnl 2-9-2.<br><br>C. OFFGAS POST-TREATMENT RADIATION 2RR-90-265, Pnl 2-9-2<br><br>D. STACK GAS RADIATION, 0-RR-90-147, Unit 1 Panel 1-9-2.<br><br>Standard:<br><br>**Monitors 90-135, 157, and 265. Calls Unit 1 operator for a reading on 0-RR-90-147.** | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: As Unit 1 Operator, Stack Gas Radiation, 0-RR-90-147 is reading 5X10E6 cps.** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Performance Step 12:<br><br>[6] **IF** after five minutes from scram the Offgas Post Treatment activity is not less than 6 x 10E5 cps as indicated on OFFGASRADIATION recorder 2-RR-90-266 on panel 2-9-2, **THEN**<br><br>**CLOSE** all Main Steam Isolation Valves and Main Steam LineDrain Valves, 2-FCV-1-55 and 2-FCV-1-56.<br><br>Standard:<br><br>**Recognizes that the Off-Gas Post Treatment activity is >6 X 10E5 and closes all Main Steam Isolation Valves and Main Steam Line Drain Valves (2-FCV-1-55/56)** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **The Unit has been scrammed for 5 minutes.**<br>• **Acknowledge closing of MSIVs.** | |
| Performance Step 13:<br><br>**NOTE**<br>Placing additional Stack Dilution Air Fans in service should keep 0-RM-90-147and 0-RM-90-148 on scale.<br><br>[7] **PLACE** STACK DILUTION FAN SEL control switch, 2-XS-66-29, Panel 2-9-8, in OFF.<br><br>[8] **START** standby STACK DILUTION FAN 2B(2A) using controlswitch, 2-HS-66-31A(29A), Panel 2-9-8.<br><br>Standard:<br><br>**Places 2-XS-66-29 in OFF and Starts standby Stack Dilution fan 2B, using 2-HS-66-31A** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **Another operator will continue from here.** | |

**STOP TIME _____**

END OF TASK

**Provide to Applicant**

**IN-SIMULATOR:**

I will explain the initial conditions and state the task to be performed. I will provide initiating cues and reports on other actions when directed by you. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's Correct". (OR "That's Incorrect", if applicable). When you have completed your assigned task, you will say, "my task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are the Unit 2 Operator. Unit 2 is at 79% power.

**INITIATING CUE:**

Respond to plant conditions.

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | AUTOMATIC START FAILURE OF A & C FIRE PUMPS |
|---|---|---|---|
| JPM NUMBER: | 673 | REVISION: | 0 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-026-NO-01/ MONITOR AUTO START OF FIRE PUMP | | | |
| K/A RATINGS: | RO: 3.4 SRO: 3.4 | | | |
| K/A No. &STATEMENT: | 286000 Fire Protection System A2.08; Ability to (a) predict the impacts of the following on the FIRE PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to actuate when required | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 8 | | | |

| EVALUATION LOCATION: | ☒In-Plant | ☐ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☒ Simulate/Walkthrough ☐ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) Y

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: _673A___

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to manually start A, B and C Fire Pumps.

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-5 Having a solid understanding of plant design, engineering principles, and sciences.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 0-OI-26

VALIDATIONTIME:__15 min_____

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 04/28/15 | All | Initial issue |
| | | | |
| | | | |
| | | | |
| | | | |

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 1.

- The Reactor Power is at 70%
- A fire exists on B Reactor Feed Pump Lube Oil Reservoir.
- Fire OPS has been dispatched to the scene.
- Fire Pump B Tagged Out for Maintenance
- A and C Fire Pumps failed to Auto Start.

**INITIATING CUES**:

The US directs you to start A or C Electric Fire Pumps per 0-OI-26 section 5.4.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

**START TIME:**_____

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td colspan="2">Note to examiner: Applicant may proceed to either Fire Pump A or C breaker first.</td></tr>
<tr><td>Step 1:<br><br>[1] PLACE the FIRE PUMP A TRANSFER switch, 0-XS-26-1 in EMERGENCY position, at the respective switchgear.<br><br>
<table>
<tr><th>Pump</th><th>Board</th><th>Compt</th></tr>
<tr><td>A</td><td>4160V Shutdown Bd A</td><td>11</td></tr>
<tr><td>C</td><td>4160V Shutdown Bd C</td><td>10</td></tr>
</table>
<br>Standard:<br><br>Simulates placing FIRE PUMP A TRANSFER switch 0-XS-26-1 in EMERGENCY position at 4160 Shutdown Board A, Compartment 11</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td colspan="2">CUE: FIRE PUMP A TRANSFER switch 0-XS-26-1 is in the EMERGENCY position</td></tr>
<tr><td>Step 2:<br><br>[2] CLOSE the breaker by placing the FIRE PUMP A CONTROL switch, 0-HS-26-1C to CLOSE.<br><br>Standard:<br><br>Simulates placing FIRE PUMP A CONTROL switch, 0-HS-26-1C to CLOSE position.</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td colspan="2">CUE: Breaker Red indicating light is ON with Green and Amber lights are OFF. Breaker Flag indicates CLOSED with Charging Spring indicating CHARGED.</td></tr>
<tr><td>Step 3:<br><br>[3] CHECK pump ammeter at breaker indicates between 25 and 40 amps.<br><br>Standard<br><br>VERIFIES pump ammeter at breaker indicates between 25 and 40 amps.</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td colspan="2">Note to examiner: Applicant may proceed to either Fire Pump A or C breaker first.</td></tr>
<tr><td colspan="2">CUE: FIRE PUMP A ammeter at breaker indicates 30 amps.</td></tr>
<tr><td>Step 4:<br><br>[4] PLACE the NORM/EMERG Switch in NORMAL.<br><br>Standard<br><br>PLACES the NORM/EMERG Switch in NORMAL for FIRE PUMP A.</td><td>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td colspan="2">CUE: FIRE PUMP A NORM/EMERG Switch is in NORMAL</td></tr>
<tr><td colspan="2">Examiner note: Once step 4 is completed and applicant correctly identifies location of FIRE PUMP C breaker, state “Another operator will continue the procedure from here.”</td></tr>
<tr><td>Step 5:<br><br>[1] PLACE the FIRE PUMP C TRANSFER switch, 0-XS-26-3 in EMERGENCY position, at the respective switchgear.<br><br><table><tr><th>Pump</th><th>Board</th><th>Compt</th></tr><tr><td>A</td><td>4160V Shutdown Bd A</td><td>11</td></tr><tr><td>C</td><td>4160V Shutdown Bd C</td><td>10</td></tr></table><br>Standard:<br><br>Simulates placing FIRE PUMP C TRANSFER switch 0-XS-26-3 in EMERGENCY position at 4160 Shutdown Board C, Compartment 10</td><td>Critical Step<br><br>SAT<br><br>UNSAT<br><br>N/A</td></tr>
<tr><td colspan="2">CUE: FIRE PUMP C TRANSFER switch 0-XS-26-3 is in the EMERGENCY position</td></tr>
</table>

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to examiner: Applicant may proceed to either Fire Pump A or C breaker first.** | |
| Step 5:<br><br>[2] **CLOSE** the breaker by placing the FIRE PUMP C CONTROL switch, 0-HS-26-3C to CLOSE.<br><br>Standard:<br><br>Simulates placing FIRE PUMP C CONTROL switch, 0-HS-26-3C to CLOSE position. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: Breaker Red indicating light is ON with Green and Amber lights are OFF. Breaker Flag indicates CLOSED with Charging Spring indicating CHARGED.** | |
| Step 6:<br><br>[3] **CHECK** pump ammeter at breaker indicates between 25 and 40 amps.<br><br>Standard<br><br>**VERIFIES** pump ammeter at breaker indicates between 25 and 40 amps. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: FIRE PUMP C ammeter at breaker indicates 30 amps.** | |
| Step 7:<br><br>[4] **PLACE** the NORM/EMERG Switch in NORMAL.<br><br>Standard<br><br>**PLACES** the NORM/EMERG Switch in NORMAL for FIRE PUMP C. | SAT<br><br>UNSAT<br><br>N/A |
| **CUE: FIRE PUMP C NORM/EMERG Switch is in NORMAL and this completes the JPM.**<br><br>**Examiner note: Once step 7 is completed and applicant correctly identifies location of FIRE PUMP A breaker, state "Another operator will continue the procedure from here."** | |

**STOP TIME: _____**

**Provide to Applicant**

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 1.

- The Reactor Power is at 70%
- A fire exists on B Reactor Feed Pump Lube Oil Reservoir.
- Fire OPS has been dispatched to the scene.
- Fire Pump B Tagged Out for Maintenance
- A and C Fire Pumps failed to Auto Start.

**INITIATING CUES**:

The US directs you to start A or C Electric Fire Pumps per 0-OI-26 section 5.4.

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | ALIGNING EMERGENCY EECW MAKEUP TO SPENT FUEL POOL |
|---|---|---|---|
| JPM NUMBER: | 674 | REVISION: | 0 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | U-000-EM-95/ Make-Up To SFP By EECW With Fire Hose (Internal Make-Up) | | | |
| K/A RATINGS: | RO: 3.1 SRO: 3.3 | | | |
| K/A No. &STATEMENT: | 233000 Fuel Pool Cooling and Clean-up; A2.02; Ability to (a) predict the impacts of the following on the FUEL POOL COOLING AND CLEAN-UP ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low pool level | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 9 | | | |

| EVALUATION LOCATION: | ☒In-Plant | ☐ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☒ Simulate/Walkthrough ☐ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: __674__

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to align either North or South Headers of EECW to Unit 2 Spent Fuel Pool.

Operator Fundamental evaluated:
OF-2 Controlling plant evolutions and indications closely.
OF-5 Having a solid understanding of plant design, engineering principles, and sciences.

PRA: NA

REFERENCES/PROCEDURES NEEDED: 2-AOI-78-1

VALIDATION TIME: _____25 min_____

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 0 | 09/01/15 | All | Initial issue |
| | | | |
| | | | |
| | | | |
| | | | |

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- The Reactor is in cold shutdown
- The Unit 2 Spent Fuel Pool water level is lowering.
- Fire Protection is available to assist

**INITIATING CUES**:

The Unit Supervisor directs you to align EECW Makeup to Unit 2 Spent Fuel Pool per 2-AOI-78-1 Attachment 2 starting at step [3].

## CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 1:<br><br>**NOTES**<br>1) Hose straps are staged at the hoses at the following locations:<br>• Unit 1/Unit 2 Reactor Bldg Stairwell, El. 621', R6 U Line (placed on hose to carry weight of charged hose lines).<br>• Hose reel on the Refuel Floor, El. 664', R6 U Line (for use in securing hose ends as needed).<br>2) Additional hose is stored in a cabinet located in Unit 1/Unit 2 Elevator Room, Reactor Bldg, El 595'.<br><br>**CAUTION**<br>Performance of this attachment will degrade water chemistry in the Spent Fuel Pool.<br><br>[3] **UNLOCK** and **OPEN** the following valves:<br>• NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0792.<br>• SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0793.<br>Standard:<br><br>Simulates opening NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0792 and SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0793 by demonstrating opening each valve counter-clockwise and breaking seal. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0792 is OPEN and SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0793 is OPEN**<br><br>**Located in stairwell between elevation 565 ft and 593 ft. Hoses are already connected, no tools required.** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 3:<br><br>[4] **VERIFY** charged hoses in stairwell are not obstructing stairway access and/or kinked.<br><br>[4.1] **ADJUST** hose straps, as necessary.<br><br>Standard:<br><br>VERIFIES hoses in stairwell are not kinked | SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner: Hoses are already run along the stairwell. Applicant should verify hoses not kinked and connected.** | |
| Step 4:<br><br>[5] **VERIFY** hose connected from NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796 and route to Unit 2 Spent Fuel Pool (El 664', Refuel Floor, R6-U Line).<br><br>Standard:<br><br>**VERIFY** hose connected from NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796 and route to Unit 2 Spent Fuel Pool (El 664', Refuel Floor, R6-U Line). | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Note to Examiner: Hoses will be simulated routed to Unit 2 Spent Fuel Pool. Any route to the Unit 2 Spent Fuel Pool is acceptable. Hoses are already connected, no tools required.**<br><br>**Location: Refuel Floor Elevation 664 ft, R U Line.** | |
| Step 5:<br><br>[6] **VERIFY** hose connected from SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797 and route to Unit 2 Spent Fuel Pool (El 664', Refuel Floor, R6-U Line)<br><br>Standard:<br><br>**VERIFY** hose connected from SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797 and route to Unit 2 Spent Fuel Pool (El 664', Refuel Floor, R6-U Line) | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note to Examiner:** **Hoses will be simulated routed to Unit 2 Spent Fuel Pool. Any route to the Unit 2 Spent Fuel Pool is acceptable. Hoses are already connected, no tools required.**<br><br>**Location:** **Refuel Floor Elevation 664 ft, R U Line.** | |
| Step 6:<br><br>[7] **VERIFY OPEN** the following valves (El 664', Refuel Floor, R6 U Line):<br><br>• NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796.<br><br>• SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797.<br><br>Standard:<br><br>Simulates opening NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796 and SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797 by demonstrating opening each valve counter-clockwise. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE:** **NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796 is OPEN and SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797 is OPEN**<br><br>**Location:** **Refuel Floor Elevation 664 ft, R U Line.** | |
| Step 7:<br><br>[8] **VERIFY** charged hoses on the Refuel Floor are not kinked.<br><br>Standard:<br><br>**VERIFY** charged hoses on the Refuel Floor are not kinked | SAT<br><br>UNSAT<br><br>N/A |
| **Termination Criteria:** **NORTH and SOUTH Header are aligned then the JPM is complete. State another operator will perform the remaining steps.** | |

**STOP TIME: _____**

**Provide to Applicant**

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 2.

- The Reactor is in cold shutdown
- The Unit 2 Spent Fuel Pool water level is lowering.
- Fire Protection is available to assist

**INITIATING CUES**:

The Unit Supervisor directs you to align EECW Makeup to Unit 2 Spent Fuel Pool per 2-AOI-78-1 Attachment 2 starting at step [3].

**CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!**

# Job Performance Measure (JPM)

| SITE: | BFN | JPM TITLE: | START UP AND SYNCHRONIZE UNIT 3 PREFERRED MMG SET |
|---|---|---|---|
| JPM NUMBER: | 307 | REVISION: | 6 |

| TASK APPLICABILITY: | ☒SRO | ☐STA | ☒UO | ☐NAUO |
|---|---|---|---|---|
| TASK NUMBER / TASK TITLE(S): | S-57C-NO-04 | | | |
| K/A RATINGS: | RO: 2.5 SRO: 2.9 | | | |
| K/A No. &STATEMENT: | 262002 Uninterruptable Power Supply (A.C./D.C.) A1.02; Ability to predict and/or monitor changes in parameters associated with operating the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) controls including: Motor generator outputs | | | |
| RELATED PRA INFORMATION: | Risk Significant | | | |
| SAFETY FUNCTION: | 6 | | | |

| EVALUATION LOCATION: | ☒In-Plant | ☐ Simulator | ☐ Control Room | ☐ Lab |
|---|---|---|---|---|
| | ☐ Other - List | | | |

APPLICABLE METHOD OF TESTING: ☐ Discussion ☒ Simulate/Walkthrough ☐ Perform

TIME FOR COMPLETION: NA TIME CRITICAL (Y/N) N ALTERNATE PATH (Y/N) N

Developed by: _____ _____
*Developer* *Date*

(Ensure validator is briefed on exam security per NPG-SPP-17.8.1)
(See JPM Validation Checklist in NPG-SPP-17.8.2)

Validated by: _____ _____
*Validator* *Date*

Approved by: _____ _____
*Site Training Management* *Date*

Approved by: _____ _____
*Site Training Program Owner* *Date*

# Job Performance Measure (JPM)

OPERATOR: _____ JPM Number: _307___

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to Start-up and synchronize Unit Preferred MMG Set

Operator Fundamental evaluated:
OF-1 Monitoring plant indications and conditions closely.
OF-2 Controlling plant Evolutions Precisely

PRA: NA

REFERENCES/PROCEDURES NEEDED: 0-OI-57C

VALIDATIONTIME: 25 min

PERFORMANCE TIME: _____

COMMENTS: _____
_____
_____
_____
_____
_____
_____
_____
_____

Additional comment sheets attached? YES ___ NO ___

RESULTS: SATISFACTORY ____ UNSATISFACTORY ____

**IF** UNSAT results are obtained

**THEN** Retain entire JPM for records.(Otherwise just retain this page.)

SIGNATURE: _____ DATE: _____
EXAMINER

## Revision Summary

| Rev No. | Effective Date | Pages Affected | Description |
|---|---|---|---|
| 1 | 10/26/94 | ALL | GENERAL REVISION |
| 2 | 05/07/95 | ALL | GENERAL REVISION |
| 3 | 10/15/97 | ALL | FORMAT, PROCEDURE REVISION, ADDED PLANT WORK EXPECTATIONS TOUCH STAAR, SAFETY, AND 3-WAY COMM. |
| 4 | 11/10/99 | ALL | PROCEDURE REVISION, FORMAT DOCUMENT |
| 5 | 10/03/01 | ALL | PROCEDURE REVISION |
| 6 | 04/28/15 | ALL | UPDATE TO NEW FORMAT |

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is in cold shutdown
- The Unit 3 Unit Preferred Bus is being supplied from the Unit 3 Unit Preferred Transformer.
- Maintenance has been completed on the Unit 3 Unit Preferred MMG Set.
- Unit 3 Unit Preferred MMG Set was started last shift per 0-OI-57C section 5.5.

**INITIATING CUES**:

The SM directs you to synchronize the Unit 3 Unit Preferred MMG Set as directed by 0-OI-57C per section 5.5 step 5.5[16].

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

**START TIME:**_____

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Examiner Note:** **Examiner will have GGMKA KEY #99A, (located in Work Control Center), and present to student when asked or the SM will authorize the door to be unlocked during performance of JPMs.** | |
| Step 1:<br><br>**NOTE**<br>Steps 5.5[16] through 5.5[26] are performed from Battery Board Room 2 UNIT PFD Sync. & Speed Control Panel.<br><br>[16] **PLACE** UNIT 3 MMG OPERATING MODE, 3-HS-252-02AB in AUTO.<br><br>Standard:<br><br>**VERIFIED/SIMULATED PLACING** the Unit 3 MMG SET OPERATING MODE 3-HS-252-02AB in AUTO. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **The Unit 3 MMG SET OPERATING MODE 3-HS-252-02AB is in AUTO position.** | |
| Step 2:<br><br>[17] **PLACE** UNIT 3 MMG LOCAL-REMOTE CONTROL, 3-XS-252-02A in REMOTE.<br><br>Standard:<br><br>**SIMULATED PLACING** the Unit 3 MMG SET LOCAL-REMOTE CONTROL 3-XS-252-02A in the REMOTE position. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue:** **The Unit 3 MMG SET LOCAL-REMOTE CONTROL 3-HS-252-02A is in the REMOTE position.** | |
| Step 3:<br><br>[18] **PLACE** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH SS-7, 3-HS-252-03/SS-7 in ON.<br><br>Standard: | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **SIMULATED PLACING** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH, SS-7, 3-HS-252-03/SS-7, in the ON position. | |
| **Cue: The Unit 3 PFD SYSTEM GENERATOR SOURCE SYNC SS-7, SWITCH 3-HS-252-003/SS-7 is in the ON position.** | |
| Step 4:<br><br>**NOTE**<br>MMG voltage and hertz are read as INCOMING.<br><br>[19] **MATCH** Incoming to Running AC volts using UNIT 3 MMG VOLTAGE ADJUST, 3-HS-252-02CD.<br><br>Standard:<br><br>**SIMULATED MANIPULATING** UNIT 3 MMG VOLTAGE ADJUST, 3-HS 252-02CD until cued that incoming and running AC volts are matched. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue: INCOMING and RUNNING VOLTAGES are EQUAL at 122 Volts** | |
| Step 5:<br><br>[20] **ADJUST** MMG speed using UNIT 3 MMG FREQUENCY ADJUST, 3-HS-252-02CF to obtain a synchroscope slowly rotating in the SLOW (counter-clockwise) direction (10 to 15 second rotation) as indicated on SYNCHROSCOPE, 0-SCP-252-000A/B.<br><br>Standard:<br><br>**SIMULATED ADJUSTING** UNIT 3 MMG FREQUENCY ADJUST 3-HS-252-02CF speed control switch until cued that synchroscope indicator rotating in the counterclockwise direction at 10 to 15 seconds per revolution. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue: State: "The Initial Synchroscope indicator is standing still at the 5 o'clock position."**<br><br>**Note: If student raises frequency the state: "Synchroscope indicator is rotating in the CLOCKWISE direction at 12 seconds per revolution."** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| **Note: If student lowers frequency the state: "Synchroscope indicator is rotating in the COUNTERCLOCKWISE direction at 12 seconds per revolution."** | |
| Step 6:<br><br>**NOTES**<br>1) Section 5.5[21] should be performed expeditiously (within about 15 seconds) to minimize the time AC Systems are paralleled to prevent tripping the MMG set. Voltage and amps is expected to fluctuate while the AC systems are paralleled and the MMG set will trip if the AC systems are paralleled for approximately 30 seconds.<br><br>2) If breaker 1001 trips, it must be reset with reset push button on the respective Unit Battery Board, Panel 10.<br><br>**CAUTIONS**<br>1) Voltage Oscillations may occur during Bus Power Transfers. These oscillations are caused when two Power Supplies having separate Voltage Regulators try to maintain voltage control. Therefore, the time the Power Supplies are paralleled should be minimized as follows:[PER 64835]<br>• When transferring Bus power supplies from one MMG to another MMG.<br>• When transferring Bus power supplies from one MMG with the unit preferred transformer. (Unit 2 has a Voltage Regulator Transformer which makes voltage oscillations more susceptible.)<br><br>2) Minimize the number of Bus power supply transfers and only transfer Bus power supplies when absolutely necessary.<br><br>3) During the transfer of Bus power supplies the affiliated RPS circuit protectors 1(2)C1 and/or 1(2)C2 may trip.<br><br>Start of Critical Step(s)<br><br>[21] **WHEN** SYNCHROSCOPE, 0-SCP-252-000A/B is 5 minutes prior to 12 o'clock, in the SLOW counter-clockwise direction,<br>**THEN** | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| PERFORM the following expeditiously:<br><br>[21.1] **CLOSE** UNIT 3 BKR 1001, using 0-HS-280-003/1001.<br><br>[21.2] **ENSURE CLOSED** UNIT 3 BKR 1001.<br><br>Standard( step 6 continued):<br><br>When cued synchroscope indicator at 5 minutes prior to 12 o'clock, **SIMULATED PLACING** 3-BKR 1001, 0-HS-252-003/1001 in the CLOSE position. | |
| **NOTE: IT WOULD ASSIST THE EXAMINEE IF THE EVALUATOR WOULD USE HIS FINGER TO DEMONSTRATE INDICATOR POSITION ON THE SYNCHROSCOPE AS THE READINGS ARE ENUNCIATED.**<br><br>**CUE: THE SYNCHROSCOPE INDICATOR IS AT 30 MINUTES BEFORE THE 12 O'CLOCK POSITION. THE SYNCHROSCOPE INDICATOR IS AT 15 MINUTES BEFORE THE 12 O'CLOCK POSITION. THE SYNCHROSCOPE INDICATOR IS AT 5 MINUTES BEFORE THE 12 O'CLOCK POSITION.**<br><br>**CUE: [WHEN CLOSED] UNIT 3 BREAKER 1001 BREAKER POSITION INDICATING LAMP CHANGED FROM ILLUMINATED GREEN TO ILLUMINATED RED.**<br><br>**FAILURE CRITERIA: FIALURE TO OPEN BREAKER IN STEP 7, (UNIT 3 BKR 1002) WITHIN 30 SECONDS FROM PARALLEL OPERATION. (NOTE 1 ABOVE; MMG SET WILL TRIP IF AC SYSTEMS ARE PARALLELED FOR APPROXIMATELY 30 SECONDS)** | |
| Step 7:<br><br>[21.3] **OPEN** the UNIT 3)BKR 1002, using 0-HS-280-003/1002.<br><br>End of Critical Step(s)<br><br>Standard:<br><br>**SIMULATED** UNIT 3 BKR 1002, 0-HS-282-003/1002in the OPEN position. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **CUE: UNIT 3 BKR 1002, 0-HS-282-003/1002 IS IN THE OPEN POSITION WITH GREEN LIGHT ILLUMINATED.**<br><br>**NOTE: DO NOT ALLOW THE EXAMINEE TO OPERATE THE AMMETER SELECTOR SWITCH FOR THE FOLLOWING STEP.** | |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Step 8:<br><br>[22] **CHECK** generator is loaded by observing UNIT 3 MMG GENERATOR amps, 3-II-252-02C/1AMR L2 rise, "N" should be approximately the difference of L1& L2 (UNIT 3 MMG GENERATOR amps, 3-HS-252-02CH positions 1, 2, & 3 are respective to L1, L2 & N).<br><br>Standard:<br><br>**CHECKED** amp indicators L1 MINUS L2 approximately equals n. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |
| **Cue: State "L1 reads 41 amps, L2 reads 42 amps and N reads 1 amp."**<br><br>**Note: Selector Switch positions are labeled as follows: Position 1 is L1, position 2 is L2 and Position 3 is N.** | |
| Step 9:<br><br>[23] **ENSURE OPEN** UNIT 3 BKR 1003, 0-HS-280-003/1003<br><br>Standard:<br><br>**VERIFIED** ILLUMINATED GREEN position indicating light above 0-HS-282-003/1003. | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: Unit 3 Breaker 1003 0-HS-280-003/1003 Position Indicating Lamp changed from illuminated RED to illuminated GREEN.**<br><br>**Note to examiner: Key is needed for steps 10 & 11.** | |
| Step 10:<br><br>[24] On Unit 2 Unit Preferred MMG Set Local Control Panel, **ENSURE OPEN** the following fused disconnect switches:<br><br>• BACKUP SOURCE TO BAT BD 1 BKR 1003, 1-FUDS-280-001/1003<br><br>• BACKUP SOURCE TO BAT BD 3 BKR 1003, 3-FUDS-280-003/1003 | SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Standard:<br><br>At Unit 2 Unit Preferred MMG Set Local Control Panel **VERIFIED** 1-FUDS-280-001/1003 AND 3-FUDS-280-003/1003 in the OPEN POSITION. | |
| **Cue: 1-FUDS-280-001/1003 and 3-FUDS-280-003/1003 are in the OPEN position.** | |
| Step 11:<br><br>[25] On Unit 3 Unit Preferred MMG Set Local Control Panel, **ENSURE** the BACKUP SOURCE TO BAT BD 2 BKR 1003, 2-FUDS-280-002/1003 fused disconnect switch is open:<br><br>Standard:<br><br>On Unit 3 Unit Preferred MMG Set Local Control Panel, **VERIFIED** 2-FUDS-280-002/1003 in the OPEN position. | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: 2-FUDS-280-002/1003 is in the OPEN position.** | |
| Step 12:<br><br>[26] On Battery Board 2:<br><br>**PLACE** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH SS-7, 1-HS-252-03/SS-7 in OFF.<br><br>Standard:<br><br>**SIMULATED PLACING** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH, SS-7, 1-HS-252-03/SS-7 in the OFF position. | SAT<br><br>UNSAT<br><br>N/A |
| **Cue: UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH, SS-7, 1-HS-252-03/SS-7 is in the OFF position.** | |
| Step 13:<br><br>[27] On Battery Board 2:<br><br>**DEPRESS** UNIT 3 MMG AC MOTOR START, 3-HS-252-02AD to return to Normal AC power from DC drive. | **Critical Step**<br><br>SAT<br><br>UNSAT<br><br>N/A |

| STEP / STANDARD | SAT / UNSAT |
|---|---|
| Standard:<br><br>**SIMULATED DEPRESSING and RELEASING** UNIT 3 MMG AC MOTOR START , 3-HS-252-02AD pushbutton. | |
| **Cue: [The AC motor Breaker Position Indicating Lamp changed from illuminated GREEN to illuminated RED. State, "Another Operator will continue with procedure and this will end the task."** | |

**STOP TIME: _____**

**Provide to Applicant**

**IN-PLANT:** I will explain the initial conditions and state the task to be performed. ALL STEPS WILL BE SIMULATED. Do NOT operate any plant equipment. Touch STAAR may be carried out to the point of touching a label. If it becomes necessary to physically touch a control switch, use a non-conductive pointing device. I will provide initiating cues and indicate any steps to be discussed. When you complete the task successfully, the objective for this job performance measure will be satisfied. When your task is given, you will repeat the task and I will acknowledge "That's correct" (or That's incorrect", if applicable). When you have completed your assigned task, you will say, "My task is complete" and I will acknowledge that your task is complete.

**INITIAL CONDITIONS:**

You are an Operator on Unit 3.

- The Reactor is in cold shutdown
- The Unit 3 Unit Preferred Bus is being supplied from the Unit 3 Unit Preferred Transformer.
- Maintenance has been completed on the Unit 3 Unit Preferred MMG Set.
- Unit 3 Unit Preferred MMG Set was started last shift per 0-OI-57C section 5.5.

**INITIATING CUES**:

The SM directs you to synchronize the Unit 3 Unit Preferred MMG Set as directed by 0-OI-57C per section 5.5 step 5.5[16].

# CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

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