Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	RESPOND TO A CONTROL ROD DRIFT IN
JPM NUMBER:	80A U2	REVISION:	1

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 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__

RO SRO DATE: _____

TASK STANDARD: Perform operations necessary to respond to a Control Rod Drift In per 2-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: 2-AOI-85-5, 2-AOI-100-1

VALIDATIONTIME: 18 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	09/01/15	1	Incorrect task number; changed to U-085-AB-05: Incorrect malfunction numbers; rd07r0231, rd07r2223 & rd07r3031; Corrected

SIMULATOR SETUP

IC	28
Exam IC	280

Console Operator Instructions	• **Reset IC 28 or Exam IC if written in above** • **Run schedule file:NRC JPM A U2 –Control Rod Drift In** • **Verify all triggers and overrides are correct** • **Place the simulator in RUN to ensure stable conditions** • **Start Rod Display on RWM Screen** • **Provide Initial Rod Data Sheet -PRLOG** • **When prompted by the examiner, INSERT - Event 1 to Drift Control Rod 02-31 into the core** • **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	10 sec	NA
rd07r3031	Drifts rod 30-31 into core	2	NA	25 sec	NA
rd07r4635	Drifts rod 46-35 into core	2	NA	20 sec	NA
rd07r2619	Drifts rod 26-19 into core	2	NA	30 sec	NA
rd07r3027	Drifts rod 30-27 into core	2	NA	18 sec	NA
rd07r5423	Drifts rod 54-23 into core	2	NA	23 sec	NA
rd07r2255	Drifts rod 22-55 into core	2	NA	28 sec	NA

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Schedule File(s): NRC JPM A U2 –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 2.

- 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: **NOTE** 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. 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. **CAUTIONS** 1) Any mispositioned control rod events will be dispositioned by following the direction contained within 2-AOI-85-7. 2) 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. 3) At any time CTP is less than or equal to 10%, entry into LCO 3.1.6 may be required. **7.3 Exercising a Partially Withdrawn Control Rod** [1] **SELECT** desired control rod by **DEPRESSING** appropriate CRD ROD SELECT pushbutton 2-XS-85-40. [2] **OBSERVE** the following for selected control rod: • **CHECK** CRD ROD SELECT pushbutton is brightly ILLUMINATED. • **CHECK** white light on the Full Core Display is ILLUMINATED. • **CHECK** Rod Out Permit light is ILLUMINATED. Standard: Selects a withdrawn control rod	**Critical Step** SAT UNSAT N/A
Note to Examiner: May select any partially withdrawn control rod in any order	

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

STEP / STANDARD	SAT / UNSAT
Standard: Initials Attachment 1 for exercised control rod and continues to exercise rods.	
Note to Examiner: • **Perform above actions for @ least two control rods.** • **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: • **When directed by examiner insert trigger #1 for 02-31 Control Rod Drift In.**	
Step 5: Performer recognizes control rod 02-31 drift in and responds per 2-AOI-85-5. [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) [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) Standard: Responds per 2-AOI-85-5 and inserts control rod 02-31 to full in position as indicated by position 00 indication.	**Critical Step** SAT UNSAT N/A
CUE: When report to US, state "Respond per 2-AOI-85-5, Control Rod Drift In.	
Step 6: [4] **NOTIFY** the Reactor Engineer to Evaluate Core Thermal Limits and Preconditioning Limits for the current Control Rod pattern. Standard: Candidate notifies Reactor Engineer to Evaluate Core Thermal limits and Preconditioning Limits for the current Control Rod Pattern	SAT UNSAT N/A
Cue: Understand Reactor Engineering notified to evaluate Core Thermal andPreconditioning Limits	

STEP / STANDARD	SAT / UNSAT
Step 7: [5] **IF** another Control Rod Drift occurs before Reactor Engineering completes the evaluation, • **THEN MANUALLY SCRAM** Reactor and enter 2-AOI-100-1. [6] **CHECK** Thermal Limits on ICS (RUNMON). **Note to NRC Examiner: Step [6] performed by Reactor Engineer"ing.** Standard: Reviews step and asks for guidance from US or RE	SAT UNSAT N/A
CUE: As Shift Manager, state "RE has evaluated Core Thermal and Preconditioning Limits and has determined that the Control Rod Exercise may continue and that any other Control Rod Drift will be considered the first. **Student will continue with Control Rod Exercise.**	
Step 8: **7.3 Exercising a Partially Withdrawn Control Rod** [1] **SELECT** desired control rod by **DEPRESSING** appropriate CRD ROD SELECT pushbutton 2-XS-85-40. [2] **OBSERVE** the following for selected control rod: • **CHECK** CRD ROD SELECT pushbutton is brightly ILLUMINATED. • **CHECK** white light on the Full Core Display is ILLUMINATED. • **CHECK** Rod Out Permit light is ILLUMINATED. Standard: Selects a withdrawn control rod	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 9: [3] INSERT control rod one notch by performing the following: [3.1] PLACE CRD CONTROL SWITCH, 2-HS-85-48 in ROD IN andRELEASE. [3.2] OBSERVE control rod settles into the desired position andROD SETTLE light extinguishes. Standard: Inserts withdrawn control rod one notch	**Critical Step** SAT UNSAT N/A
Step 10: [4] WITHDRAW selected control rod one notch by performing the following: [4.1] PLACE CRD CONTROL SWITCH, 2-HS-85-48 in ROD OUT NOTCHand RELEASE. [4.2] OBSERVE control rod settles into the desired position and ROD SETTLE light extinguishes. Standard: Withdraws withdrawn control rod one notch	**Critical Step** SAT UNSAT N/A
Note to Examiner: **When satisfied with the number of rod manipulations direct Simulator Booth Operator to insert trigger #2 for Multiple Control Rods Drifting In**	
Step 11: Multiple Control Rods Drifting In Standard: Recognizes Multiple Control Rods Drift into the Core and Manually Scrams the Reactor per 2-AOI-85-5. • Depresses both SCRAM Pushbuttons • Places mode switch in shutdown • Verifies All Rods in	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 11 continued: • Performs a Scram Announcement o Rx Mode Switch Position: Shutdown o Rod Position: All Full In o Reactor Water Level ____ & Trend ___ o Reactor Pressure ____ & Trend ___ o MSIV Position: OPEN o Rx Power: <5%	**Critical Step** SAT UNSAT N/A
Termination Criteria: REPEAT BACK SCRAM REPORT THEN STATE, "THIS COMPLETES THE JPM. THAT WILL BE ALL FOR NOW, ANOTHER OPERATOR WILL CONTINUE IN 2-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.

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INITIAL CONDITIONS:

You are an Operator on Unit 2.

- The Reactor is at 100% power

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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.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	RESPOND TO A CONTROL ROD DRIFT IN
JPM NUMBER:	80A U3	REVISION:	1

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 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: _____

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: Incorrect malfunction numbers; rd07r0231, rd07r2223 & rd07r3031; Corrected

SIMULATOR SETUP

IC	28
Exam IC	280

Console Operator Instructions	• **Reset IC 28 or Exam IC if written in above** • **Run schedule file: NRC JPM A U3 –Control Rod Drift In** • **Verify all triggers and overrides are correct** • **Place the simulator in RUN to ensure stable conditions** • **Start Rod Display on RWM Screen** • **Provide Initial Rod Data Sheet -PRLOG** • **When prompted by the examiner, INSERT - Event 1 to Drift Control Rod 02-31 into the core** • **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	10 sec	NA
rd07r3031	Drifts rod 30-31 into core	2	NA	25 sec	NA
rd07r4635	Drifts rod 46-35 into core	2	NA	20 sec	NA
rd07r2619	Drifts rod 26-19 into core	2	NA	30 sec	NA
rd07r3027	Drifts rod 30-27 into core	2	NA	18 sec	NA
rd07r5423	Drifts rod 54-23 into core	2	NA	23 sec	NA
rd07r2255	Drifts rod 22-55 into core	2	NA	28 sec	NA

Remotes	Description	Event	Severity	Delay	Initial set

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: **NOTE** 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. 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. **CAUTIONS** 3) Any mispositioned control rod events will be dispositioned by following the direction contained within 3-AOI-85-7. 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. 5) At any time CTP is less than or equal to 10%, entry into LCO 3.1.6 may be required. **7.3 Exercising a Partially Withdrawn Control Rod** [1] **SELECT** desired control rod by **DEPRESSING** appropriate CRD ROD SELECT pushbutton 3-XS-85-40. [2] **OBSERVE** the following for selected control rod: • **CHECK** CRD ROD SELECT pushbutton is brightly ILLUMINATED. • **CHECK** white light on the Full Core Display is ILLUMINATED. • **CHECK** Rod Out Permit light is ILLUMINATED. Standard: Selects a withdrawn control rod	**Critical Step** SAT UNSAT N/A
Note to Examiner: May select any partially withdrawn control rod in any order	

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

STEP / STANDARD	SAT / UNSAT
Standard: Initials Attachment 1 for exercised control rod and continues to exercise rods.	
Note to Examiner: • **Perform above actions for @ least two control rods.** • **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: • **When directed by examiner insert trigger #1 for 02-31 Control Rod Drift In.**	
Step 5: Performer recognizes control rod 02-31 drift in and responds per 3-AOI-85-5. [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) [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) Standard: Responds per 3-AOI-85-5 and inserts control rod 02-31 to full in position as indicated by position 00 indication.	**Critical Step** SAT UNSAT N/A
CUE: When report to US, state "Respond per 3-AOI-85-5, Control Rod Drift In.	
Step 6: [4] **NOTIFY** the Reactor Engineer to Evaluate Core Thermal Limits and Preconditioning Limits for the current Control Rod pattern. Standard: Candidate notifies Reactor Engineer to Evaluate Core Thermal limits and Preconditioning Limits for the current Control Rod Pattern	SAT UNSAT N/A
Cue: Understand Reactor Engineering notified to evaluate Core Thermal andPreconditioning Limits	

STEP / STANDARD	SAT / UNSAT
Step 7: [5] **IF** another Control Rod Drift occurs before Reactor Engineering completes the evaluation, • **THEN MANUALLY SCRAM** Reactor and enter 2-AOI-100-1. [6] **CHECK** Thermal Limits on ICS (RUNMON). **Note to NRC Examiner: Step [6] performed by Reactor Engineer"ing.** Standard: Reviews step and asks for guidance from US or RE	SAT UNSAT N/A
CUE: As Shift Manager, state "RE has evaluated Core Thermal and Preconditioning Limits and has determined that the Control Rod Exercise may continue and that any other Control Rod Drift will be considered the first. **Student will continue with Control Rod Exercise.**	
Step 8: **7.3 Exercising a Partially Withdrawn Control Rod** [1] **SELECT** desired control rod by **DEPRESSING** appropriate CRD ROD SELECT pushbutton 2-XS-85-40. [2] **OBSERVE** the following for selected control rod: • **CHECK** CRD ROD SELECT pushbutton is brightly ILLUMINATED. • **CHECK** white light on the Full Core Display is ILLUMINATED. • **CHECK** Rod Out Permit light is ILLUMINATED. Standard: Selects a withdrawn control rod	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 9: [3] INSERT control rod one notch by performing the following: [3.1] PLACE CRD CONTROL SWITCH, 2-HS-85-48 in ROD IN andRELEASE. [3.2] OBSERVE control rod settles into the desired position andROD SETTLE light extinguishes. Standard: Inserts withdrawn control rod one notch	**Critical Step** SAT UNSAT N/A
Step 10: [4] WITHDRAW selected control rod one notch by performing the following: [4.1] PLACE CRD CONTROL SWITCH, 2-HS-85-48 in ROD OUT NOTCHand RELEASE. [4.2] OBSERVE control rod settles into the desired position and ROD SETTLE light extinguishes. Standard: Withdraws withdrawn control rod one notch	**Critical Step** SAT UNSAT N/A
Note to Examiner: **When satisfied with the number of rod manipulations direct Simulator BoothOperator to insert trigger #2 for Multiple Control Rods Drifting In**	
Step 11: Multiple Control Rods Drifting In Standard: Recognizes Multiple Control Rods Drift into the Core and Manually Scrams the Reactor per 3-AOI-85-5. • Depresses both SCRAM Pushbuttons • Places mode switch in shutdown • Verifies All Rods in	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 11 continued: • Performs a Scram Announcement o Rx Mode Switch Position: Shutdown o Rod Position: All Full In o Reactor Water Level ____ & Trend ___ o Reactor Pressure ____ & Trend ___ o MSIV Position: OPEN o Rx Power: <5%	**Critical Step** SAT UNSAT N/A
Termination Criteria: repeat back scram report then state, "this completes the JPM". That will be all for now, another operator will continue in 2-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.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	EHC Auto Cooldown
JPM NUMBER:	276 U2	REVISION:	1

TASK APPLICABILITY:	☒SRO	☐STA	☒UO	☐NAUO
TASK NUMBER / TASK TITLE(S):	U-000-NO-32 Perform Reactor Cooldown 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 U2

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: 2-OI-47

VALIDATIONTIME: 4 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	06/19/12	All	Initial issue
1	07/22/15	All	General revision & re-format

SIMULATOR SETUP

IC	40
Exam IC	281

Console Operator Instructions	• **Reset IC 40 or Exam IC if written in above** • **Ensure RFP is in Manual on PDS controller with plant parameters stable.**

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 2.

- 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 2-OI-47, Turbine-Generator System, Section 8.1.2, starting at step [6].

START TIME:_____

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

STEP / STANDARD	SAT / UNSAT
Step 4: [9] On the Auto Cooldown Screen **SET** the desired Final Pressure for cooldown as follows: [9.1] **SELECT** the block above the "FINAL PRESSURE TARGET". [9.2] **ENTER** the desired pressure using the Display Screen or Key Board. [9.3] **WHEN** desired Pressure is entered **SELECT** "OK" Standard: Candidate sets the desired final target pressure of 20psig (given in initial conditions).	**Critical Step** SAT UNSAT N/A
Step 5: [10] **WHEN** Cooldown is ready to commence, **THEN** [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) [10.2] **DEPRESS** the "START" button on the Auto Cooldown Display Screen. [11] **WHEN** Caution "Are You Sure You Want to Initiate Auto Cooldown?" appears **SELECT** "Yes" Screen Button to start the cooldown. Standard: Candidate depresses START and acknowledges "YES' to commence auto cooldown.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 6: [12] **CHECK** the following: • EHC PRESSURE SETPOINT, 2-PI-47-162, is lowering. • EHC AUTO COOLDOWN displays "IN PROGRESS" Standard: Candidate monitors EHC pressure and the auto cooldown is "IN PROGRESS".	SAT UNSAT N/A
Cue: The Unit Supervisor directs you to adjust the Final Pressure Target to 100 psig.	
Step 7: [13] **IF** it is desired to change the Final Pressure Target, **THEN** On the Auto Cooldown Screen. [13.1] **SELECT** the block above the "FINAL PRESSURE TARGET" [13.2] **ENTER** the desired pressure using the Display Screen or Key Board. [13.3] **WHEN** desired Pressure is entered **SELECT** "OK" Standard: Candidate adjusts "FINAL PRESSURE TARGET" to 100 psig and recommences the auto cooldown.	**Critical Step** SAT UNSAT N/A
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 2.

- 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 2-OI-47, Turbine-Generator System, Section 8.1.2, starting at step [6].

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	EHC Auto Cooldown
JPM NUMBER:	276 U3	REVISION:	1

TASK APPLICABILITY:	☒SRO	☐STA	☒UO	☐NAUO
TASK NUMBER / TASK TITLE(S):	U-000-NO-32 Perform Reactor Cooldown 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: _____

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	06/19/12	All	Initial issue
1	07/22/15	All	General revision & re-format

SIMULATOR SETUP

IC	40
Exam IC	281

Console Operator Instructions	• **Reset IC 40 or Exam IC if written in above** • **Ensure RFP is in Manual on PDS controller with plant parameters stable.**

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

Step 4: [9] On the Auto Cooldown Screen **SET** the desired Final Pressure for cooldown as follows: [9.1] **SELECT** the block above the "FINAL PRESSURE TARGET". [9.2] **ENTER** the desired pressure using the Display Screen or Key Board. [9.3] **WHEN** desired Pressure is entered **SELECT** "OK" Standard: Candidate sets the desired final target pressure of 20psig (given in initial conditions).	**Critical Step** SAT UNSAT N/A
Step 5: [10] **WHEN** Cooldown is ready to commence, **THEN** [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) [10.2] **DEPRESS** the "START" button on the Auto Cooldown Display Screen. [11] **WHEN** Caution "Are You Sure You Want to Initiate Auto Cooldown?" appears **SELECT** "Yes" Screen Button to start the cooldown. Standard: Candidate depresses START and acknowledges "YES' to commence auto cooldown.	**Critical Step** SAT UNSAT N/A

Step 6: [12] **CHECK** the following: • EHC PRESSURE SETPOINT, 3-PI-47-162, is lowering. • EHC AUTO COOLDOWN displays “IN PROGRESS” Standard: Candidate monitors EHC pressure and the auto cooldown is “IN PROGRESS”.	SAT UNSAT N/A
Cue: The Unit Supervisor directs you to adjust the Final Pressure Target to 100 psig.	
Step 7: [13] **IF** it is desired to change the Final Pressure Target, **THEN** On the Auto Cooldown Screen. [13.1] **SELECT** the block above the “FINAL PRESSURE TARGET” [13.2] **ENTER** the desired pressure using the Display Screen or Key Board. [13.3] **WHEN** desired Pressure is entered **SELECT** “OK” Standard: Candidate adjusts “FINAL PRESSURE TARGET” to 100 psig and recommences the auto cooldown.	**Critical Step** SAT UNSAT N/A
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: _____
_____
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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	09/01/15	All	Initial issue

SIMULATOR SETUP

IC	39
Exam IC	282

Console Operator Instructions	• **Reset to IC-39 to ~ 30% Reactor Power** • **Open Schedule File: NRC JPM C U2 –RBM APRM Fail Downscale.sch** • **Open Event File: NRC JPM C U2 –RBM APRM Fail Downscale.evt**

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 FAILURE 08-25-B	15	0	N/A	N/A

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	15	0	N/A	N/A

	FAILURE 48-09-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% per 2-SR-3.1.3.5(A) in preparation for placing Feedwater Heaters and Moisture Separator Drain System in service. Start on Group 58; Control Rod 14-31.

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A
Step 2: [2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN** • 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) Standard: **Determines that step in N/A**	SAT UNSAT **N/A**
Step 3: [3] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 4: [4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**
Step 5: [5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: 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** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04	
Step 6: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 7: [2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN** • 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) Standard: **Determines that step in N/A**	SAT UNSAT **N/A**
Step 8: [3] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 9: [4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**

STEP / STANDARD	SAT / UNSAT
Step 10: [5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: 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** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04	
Step 11: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A
Step 12: [2] **IF** selected control rod has been identified as a “fast notching” control rod by engineering, **THEN** • 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) Standard: **Determines that step in N/A**	SAT UNSAT **N/A**

STEP / STANDARD	SAT / UNSAT
Step 13: [3] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 14: [4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**
Step 15: [5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: 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** SAT UNSAT 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 **Simulator Booth Operator: Insert Event Trigger #1 to fail APRM 2 Downscale.**	
Step 16: APRM DOWNSCALE/ OPRM INOP 4 Sensor/Trip Point: APRM Downscale: <= 5% OPRM Inop: Less than 23 operable cells **Sensor Location:** Control Room Panel 2-9-14. **Probable Cause:** A. Unbypassed APRM channel at or below sensor set point. B. SI or SR in progress. C. Unit shutdown (Mode 3 or 4). D. Failed sensor. **Automatic Action:** A. Rod withdrawal block with Rx Mode Sw. in RUN.(APRM only) **Operator Action:** A. DETERMINE which APRM/OPRM channel is downscale/inop. B. IF APRM failed downscale, THEN BYPASS channel. REFER TO 2-OI-92B.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 16(continued) CONTROL ROD WITHDRAWAL BLOCK 7 Sensor/Trip Point: Relays: 3A-K1 Nuclear Instrumentation 3A-K2 Refuel Equipment in Use High Level in Scram Discharge Volume Scram Discharge Volume High Water Level Bypass Rx Mode Switch in SHUTDOWN PRNM (ANY APRM OPRM or RBM) **Sensor Location:** Panel 2-9-28 Elevation 593' Aux Instr Room **Probable Cause:** A. One or more sensors at or above set point. B. Malfunction of sensor. C. Control rod drop accident **Automatic Action:** Rod withdrawal block **Operator Action:** A. **DETERMINE** initiating condition from corresponding rod withdrawal block alarm(s) and **REFER TO** operator action for alarm(s). Standard: 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: Respond as stated in Alarm Response Instruction and Bypass APRM Ch 2 per 3-OI-92B.	

STEP / STANDARD	SAT / UNSAT
Step 17: **NOTES** 1) Only one APRM/OPRM in each trip system can be bypassed at a time. 2) All operations are performed on Panel 2-9-5 unless specifically stated otherwise. 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. **6.1 Bypassing APRM/OPRM Channel** **CAUTION** [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] [1] **REVIEW** all precautions and limitations. **REFER TO** Section 3.0. Standard: Demonstrates reviewing precautions and limitations section 3.0.	SAT UNSAT N/A
Step 18: [2] **PLACE** APRM BYPASS, 2-HS-92-7B/S3, to desired channel to be bypassed. Standard: **PLACE** APRM BYPASS, 2-HS-92-7B/S3, to APRM CH 2	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 19: [3] **CHECK** BLUE BYPASSED lights illuminated on Panel 2-9-14 Voters. Standard: Observes BLUE BYPASS light illuminated on Panel 2-9-14 for APRM CH 2.	SAT UNSAT N/A
Step 20: [4] **VERIFY** white bypass light on Panel 2-9-5 is illuminated. Standard: Observes WHITE BYPASS light illuminated on Panel 2-9-5.	SAT UNSAT N/A
Note to Examiner: If needed, cue student to proceed with actions required to continue rod movements. Student may continue at step 21 or 24.	
Step 21: **6.6.2 Actions Required During and Following Control Rod Withdrawal (continued)** [6] **IF** Control Rod movement was stopped to keep from exceeding a RBM setpoint or was caused by a RBM Rod Block, **THEN** **PERFORM** the following at the Unit Supervisor's discretion to "REINITIALIZE" the RBM: [6.1] **PLACE** CRD POWER, 2-HS-85-46 in the OFF position to deselect the Control Rod. Standard: CRD POWER, 2-HS-85-46 in the OFF position.	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 22: [6.2] **PLACE** CRD POWER, 2-HS-85-46, in the ON position. Standard: **PLACED** CRD POWER, 2-HS-85-46, in the ON position.	SAT UNSAT N/A
Step 23: [6.3] **IF** desired, **THEN CONTINUE** to withdrawal Control Rods and **PERFORM** applicable section for Control Rod withdrawal. Standard: Continues with Control Rod Movement	SAT UNSAT N/A
CUE: Proceed with Control Rod Movement.	
Step 24: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 2-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 25: [2] **IF** selected control rod has been identified as a "fast notching" control rod by engineering, **THEN** • 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) Standard: **Determines that step in N/A**	SAT UNSAT **N/A**
Step 26: [3] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 27: [4] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**

STEP / STANDARD	SAT / UNSAT
Step 28: [5] **PLACE** CRD CONTROL SWITCH, 2-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [6] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: 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** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04 **Termination Criteria: When Control Rod is at position 04, state "End of 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 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.

INITIATING CUES:

The US has directed you to raise Reactor Power to 40% per 2-SR-3.1.3.5(A) in preparation for placing Feedwater Heaters and Moisture Separator Drain System in service. Start on Group 58; Control Rod 14-31.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	LOSS OF REFERENCE APRM TO ROD BLOCK MONITOR
JPM NUMBER:	672A U3	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 U3_

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: 3-OI-85, 3-OI-92B, 3-ARP-9-5A, 3-SR-3.1.3.5(A)

VALIDATIONTIME: _____

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	04/30/15	All	Initial issue

SIMULATOR SETUP

IC	39
Exam IC	282

Console Operator Instructions	• **Reset IC-39to ~ 30% Reactor Power** • **Open Schedule File: NRC JPM C U3 –RBM APRM Fail Downscale.sch** • **Open Event File: NRC JPM C U3 –RBM APRM Fail Downscale.evt**

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 FAILURE 08-25-B	15	0	N/A	N/A

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	15	0	N/A	N/A

	FAILURE 48-09-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 U3 -RBM APRM Fail Downscale.evt; <TRIGGER id="15" description="APRM Ch 2 Fail Downscale">ZLO4631LGREENT(1) == 0</TRIGGER>

Schedule File: NRC JPM C U3 -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 3.

- The Reactor is at 30% power
- Startup Sequence Control Rod Movement Data Sheet 3-SR-3.1.3.5(A) completed through group 58.

INITIATING CUES:

The US has directed you to raise Reactor Power to 40% per 3-SR-3.1.3.5(A) in preparation for placing Feedwater Heaters and Moisture Separator Drain System in service. Start on Group 59; Control Rod 22-39.

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 3-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A
Step 2: [2] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 3: [3] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**

STEP / STANDARD	SAT / UNSAT
Step 4: [4] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [5] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: PLACED CRD CONTROL SWITCH, 3-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.	**Critical Step** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04	
Step 5: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 3-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A
Step 6: [2] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 7: [3] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**
Step 8: [4] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [5] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: PLACED CRD CONTROL SWITCH, 3-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.	**Critical Step** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04	
Step 9: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 3-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 10: [2] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 11: [3] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**
Step 12: [4] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [5] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: PLACED CRD CONTROL SWITCH, 3-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.	**Critical Step** SAT UNSAT 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 **Simulator Booth Operator: Insert Event Trigger #1 to fail APRM 2 Downscale.**	
Step 13: APRM DOWNSCALE/ OPRM INOP 4 APRM Downscale: <= 5% OPRM Inop: Less than 23 operable cells **Sensor Location:** Control Room Panel 3-9-14. **Probable Cause:** A. Unbypassed APRM channel at or below sensor set point. B. SI or SR in progress. C. Unit shutdown (Mode 3 or 4). D. Failed sensor. **Automatic Action:** A. Rod withdrawal block with Rx Mode Sw. in RUN.(APRM only) **Operator Action:** A. DETERMINE which APRM/OPRM channel is downscale/inop. B. IF APRM failed downscale, THEN BYPASS channel. REFER TO 3-OI-92B.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 13(continued) CONTROL ROD WITHDRAWAL BLOCK 7 Instrumentation 3A-K2 Refuel Equipment in Use High Level in Scram Discharge Volume Scram Discharge Volume High Water Level Bypass Rx Mode Switch in SHUTDOWN PRNM (ANY APRM OPRM or RBM) **Sensor Location:** Panel 3-9-28 Elevation 593' Aux Instr Room **Probable Cause:** A. One or more sensors at or above set point. B. Malfunction of sensor. C. Control rod drop accident **Automatic Action:** Rod withdrawal block **Operator Action:** A. **DETERMINE** initiating condition from corresponding rod withdrawalblock alarm(s) and **REFER TO** operator action for alarm(s). Standard: Reference 3-ARP-9-5A and identifies APRM Ch 2 is down scale and proceeds to bypass APRM Ch 2 per 3-OI-92B	
CUE:Respond as stated in Alarm Response Instruction and Bypass APRM Ch 2 per 3-OI-92B.	

STEP / STANDARD	SAT / UNSAT
Step 14: **NOTES** 1) Only one APRM/OPRM in each trip system can be bypassed at a time. 2) All operations are performed on Panel 3-9-5 unless specifically stated otherwise. 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. **6.1 Bypassing APRM/OPRM Channel** **CAUTION** [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] [1] **REVIEW** all precautions and limitations. **REFER TO** Section 3.0. Standard: Demonstrates reviewing precautions and limitations section 3.0.	SAT UNSAT N/A
CUE: If asked per note 2 above, "Panel 9-14 Voter BLUE LIGHTS are extinguished".	
Step 15: [2] **PLACE** APRM BYPASS, 3-HS-92-7B/S3, to desired channel to be bypassed. Standard: **PLACE** APRM BYPASS, 3-HS-92-7B/S3, to APRM CH 2	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 16: [3] **CHECK** BLUE BYPASSED lights illuminated on Panel 3-9-14 Voters. Standard: Simulates observing BLUE BYPASS light illuminated on Panel 3-9-14 for APRM CH 2.	SAT UNSAT N/A
Cue: Blue Light is illuminated on Panel 3-9-14 for APRM CH 2.	
Step 17: [4] **VERIFY** white bypass light on Panel 3-9-5 is illuminated. Standard: Observes WHITE BYPASS light illuminated on Panel 3-9-5.	SAT UNSAT N/A
Note to NRC Examiner: If needed, cue student to proceed with actions required to continue rod movements.Student may continue at step 18 or 21.	
Step 18: **6.6.2 Actions Required During and Following Control Rod Withdrawal (continued)** [6] **IF** Control Rod movement was stopped to keep from exceeding a RBM setpoint or was caused by a RBM Rod Block, **THEN** **PERFORM** the following at the Unit Supervisor's discretion to "REINITIALIZE" the RBM: [6.1] **PLACE** CRD POWER, 3-HS-85-46 in the OFF position to deselect the Control Rod. Standard: CRD POWER, 3-HS-85-46 in the OFF position.	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 19: [6.2] **PLACE** CRD POWER, 3-HS-85-46, in the ON position. Standard: **PLACED** CRD POWER, 3-HS-85-46, in the ON position.	SAT UNSAT N/A
Step 20: [6.3] **IF** desired, **THEN CONTINUE** to withdrawal Control Rods and **PERFORM** applicable section for Control Rod withdrawal. Standard: Continues with Control Rod Movement	SAT UNSAT N/A
Cue:If asked,Proceed with Control Rod Movement.	
Step 21: [1] **SELECT** the desired control rod by depressing the appropriate CRD ROD SELECT pushbutton, 3-XS-85-40. Standard: Selects Control Rod by depressing CRD ROD SELECT pushbutton.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 22: [2] OBSERVE the following for the selected control rod: • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED Standard: **VERIFIES** • CRD ROD SELECT pushbutton is brightly ILLUMINATED • White light on the Full Core Display ILLUMINATED • Rod Out Permit light ILLUMINATED	SAT UNSAT N/A
Step 23: [3] **VERIFY** Rod Worth Minimizer is operable and LATCHED into the correct ROD GROUP when the Rod Worth Minimizer is enforcing Standard: **STEP is N/A due to Rod Block Monitor is Enforcing**	SAT UNSAT **N/A**
Step 24: [4] **PLACE** CRD CONTROL SWITCH, 3-HS-85-48, in ROD OUT NOTCH, and **RELEASE**. [5] **OBSERVE** the control rod settles into the desired position and the ROD SETTLE light extinguishes. Standard: PLACED CRD CONTROL SWITCH, 3-85-48 in ROD OUT NOTCH position and RELEASED control switch to move Control Rod to Position 04 as indicated on Full Core Display.	**Critical Step** SAT UNSAT N/A
Note to Examiner: Step is repeated to get Control Rod to Position 04 **Termination Criteria: When Control Rod is at position 04, state "End of 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 Reactor is at 30% power
- Startup Sequence Control Rod Movement Data Sheet 3-SR-3.1.3.5(A) completed through group 58.

INITIATING CUES:

The US has directed you to raise Reactor Power to 40% per 3-SR-3.1.3.5(A) in preparation for placing Feedwater Heaters and Moisture Separator Drain System in service. Start on Group 59; Control Rod 22-39.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	2-EOI APPENDIX-6E INJECTION SUBSYSTEM LINEUP CS SYSTEM II
JPM NUMBER:	257A U2	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 SystemA4.08 Ability to manually operate and/or monitor in thecontrol 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 U2_

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: 2-EOI APPENDIX-6E

VALIDATIONTIME: 8 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	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** **2. Open Event File** **3. Reset to IC-28and take out of freeze.** **4. CLOSE 2-FCV-75-51** **5. OPEN 2-FCV-75-53** **6. Man Scram Rx and place MS to SD.** **7. Open 6 ADS Valves.** **8. 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 2A	15	N/A	10	Yes

FW01B	CONDENSATE PUMP TRIP 2B	15	N/A	10	Yes
FW01C	CONDENSATE PUMP TRIP 2C	15	N/A	10	Yes

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Schedule File(s): JPM 257A U2 Core Spray Alt Inj.sch

Event File(s): JPM 257A U2 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 2.

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

INITIATING CUES:

The Unit Supervisor directs you to inject water into the RPV to restore RPV water level above (-)162 inches (TAF) using Core Spray System II as directed by 2-EOI Appendix-6E, Injection Subsystems Lineup Core Spray System II.

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: Location: Unit 2 Control Room Attachments: 1. NPSH Monitoring [1] **VERIFY OPEN** the following valves: • 2-FCV-75-30, CORE SPRAY PUMP 2B SUPPR POOL SUCT VLV • 2-FCV-75-39, CORE SPRAY PUMP 2D SUPPR POOL SUCT VLV Standard: Verifies2-FCV-75-30 and 2-FCV-75-39 are open.	SAT UNSAT N/A
Step 2: [1] (continued)**VERIFY OPEN** the following valves: • 2-FCV-75-51, CORE SPRAY SYS II OUTBD INJECT VALVE. Standard: Recognizes 2-FCV-75-51 is closed and 2-FCV-75-53 is open, valve closes 2-FCV-75-53 and Opens 2-FCV-75-51.	**Critical Step** SAT UNSAT N/A
Note to Examiner: Student will realignper OPDP-8 Conduct of Ops or OI-75, Core Spray System line up.	

STEP / STANDARD	SAT / UNSAT
Step 3: [2] **VERIFY CLOSED** 2-FCV-75-50, CORE SPRAY SYS II TESTVALVE. Standard: Verifies 2-FCV-75-50 closed	SAT UNSAT N/A
Step 4: [3] **VERIFY** CS Pump 2B and/or 2D running. Standard: Starts Core Pumps 2B and/or 2D (Only starting one pump is Critical, the second pump is optional).	**Critical Step** SAT UNSAT N/A
Step 6: [4] **WHEN** RPV pressure is below 450 psig, **THEN** **THROTTLE**2-FCV-75-53, CORE SPRAY SYS II INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump. Standard: Verifies pressure < 450 psig and opens 2-FCV-75-53 and commences injection. (And verify flow <4000 gpm for 1 pump or <8000 gpm for 2 pumps).	**Critical Step** SAT UNSAT N/A
Step 7: **CAUTION** Continuous operation with inadequate NPSH may result in pump damage or pump inoperability. [5] **MONITOR** Core Spray Pump NPSH using Attachment 1. Standard: Operator comparesCore Spray Pump flow rate with Suppression Pool temperature and Suppression Pool pressure and Determined adequate NPSH.	SAT UNSAT 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: _____

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

INITIATING CUES:

The Unit Supervisor directs you to inject water into the RPV to restore RPV water level above 162 inches (TAF) using Core Spray System II as directed by 2-EOI Appendix-6E, Injection Subsystems Lineup Core Spray System II.

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: _____
_____
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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	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** **2. Open Event File** **3. Reset to IC-28 and take out of freeze.** **4. CLOSE 2-FCV-75-51** **5. OPEN 2-FCV-75-53** **6. Man Scram Rx and place MS to SD.** **7. Open 6 ADS Valves.** **8. 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

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.
- 1-EOI-1 has been entered and followed to RC-L6.

INITIATING CUES:

The Unit Supervisor directs you to inject water into the RPV to restore RPV water level above (-)162 inches (TAF) using Core Spray System II as directed by 3-EOI Appendix-6E, Injection Subsystems Lineup Core Spray System II.

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: Location: Unit 3 Control Room Attachments: 1. NPSH Monitoring [1] **VERIFY OPEN** the following valves: • 3-FCV-75-30, CORE SPRAY PUMP 3B SUPPR POOL SUCT VLV • 3-FCV-75-39, CORE SPRAY PUMP 3D SUPPR POOL SUCT VLV Standard: Verifies3-FCV-75-30 and 3-FCV-75-39 are open.	SAT UNSAT N/A
Step 2: [1] (continued) **VERIFY OPEN** the following valves: • 3-FCV-75-51, CORE SPRAY SYS II OUTBD INJECT VALVE. Standard: Recognizes 3-FCV-75-51 is closed and 3-FCV-75-53 is open, closes 3-FCV-75-53 and Opens 3-FCV-75-51.	**Critical Step** SAT UNSAT N/A
Note to Examiner: Student will realignper OPDP-8 Conduct of Ops or OI-75, Core Spray System line up.	

STEP / STANDARD	SAT / UNSAT
Step 3: [2] **VERIFY CLOSED** 3-FCV-75-50, CORE SPRAY SYS II TEST VALVE. Standard: Verifies 3-FCV-75-50 closed	SAT UNSAT N/A
Step 4: [3] **VERIFY** CS Pump 3B and/or 3D running. Standard: Starts Core Pumps 3B and/or 3D (Only starting one pump is Critical, the second pump is optional).	**Critical Step** SAT UNSAT N/A
Step 6: [4] **WHEN** RPV pressure is below 450 psig, **THEN** **THROTTLE** 3-FCV-75-53, CORE SPRAY SYS II INBDINJECT VALVE, as necessary to control injection at or below4000 gpm per pump. Standard: 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** SAT UNSAT N/A
Step 7: **CAUTION** Continuous operation with inadequate NPSH may result in pump damage or pump inoperability. [5] **MONITOR** Core Spray Pump NPSH using Attachment 1. Standard: Operator compares Core Spray pump flow rate with Suppression Pool temperature and Suppression Pool pressure and Determined adequate NPSH.	SAT UNSAT 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: _____

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.
- 1-EOI-1 has been entered and followed to RC-L6.

INITIATING CUES:

The Unit Supervisor directs you to inject water into the RPV to restore RPV water level using Core Spray System II as directed by 3-EOI Appendix-6E, Injection Subsystems Lineup Core Spray System II. Directed level band is +2 to +51 inches.

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: 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: 3.6SRO: 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: 12 min

PERFORMANCE TIME: _____

COMMENTS: _____

_____

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_____

Additional comment sheets attached? YES ___ NO ___

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

SIGNATURE: _____ DATE: _____
EXAMINER

SIMULATOR SETUP

IC	28
Exam IC	284

Malfunctions	Description	Event	Severity	Delay	Initial set
fw15a	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.

Schedule Files:

1. NRC JPM E U2–Alt RPV Press Control RFP Min Flow.sch
2. NRC JPM E U2–Alt RPV Press Control RFP Min Flow RFPT Trip.evt

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 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 2A RFPT in alternate pressure control, as directed by 2-EOI-APPENDIX-11F and lower Reactor Pressure to low in the pressure band of 800 to 1000 psig.

START TIME

STEP / STANDARD	SAT / UNSAT
Step 1: [1] **IF** BOTH of the following exist: • Emergency RPV Depressurization is required, **AND** • Group 1 Isolation Signal exists, **THEN** **EXIT** this procedure and **ENTER** EOI Appendix 11H. Standard: 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 UNSAT N/A
Step 2: [2] **VERIFY** MSIVs open. Standard: Verifies MSIVs OPEN	SAT UNSAT N/A

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

STEP / STANDARD	SAT / UNSAT
Step 7: [4.4] **DEPRESS** 2-HS-46-8A RFPT 2A SPEED CONT RAISE/LOWER, and **VERIFY** amber lightis illuminated. Standard: Depresses 2-HS-46-8A	**Critical Step** SAT UNSAT N/A
Step 8: [4.5] **DEPRESS** 2-HS-3-124A, RFPT 2A TRIP RESET. Standard: 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** SAT UNSAT N/A
Step 9: [4.6] **PLACE** 2-HS-46-112A RFPT 2A START/LOCAL ENABLE, in START. Standard: Places 2-HS-46-112A in START	**Critical Step** SAT UNSAT N/A
Note to Examiner: **RFPT A will Trip due to Low Bearing Oil Pressure at > 350 RPM**	
Step 10: [4.7] **CHECK** RFPT 2A speed increases to approximately 600 rpm. Standard: 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.	**Critical Step** SAT UNSAT N/A
CUE: **US: Proceed as directed per 2-EOI-APPENDIX-11F.** **AO: Reports an oil leak of ~5 gpm on RFPT A bearings.**	

STEP / STANDARD	SAT / UNSAT
Step 11: [1] **IF** BOTH of the following exist: • Emergency RPV Depressurization is required, **AND** • Group 1 Isolation Signal exists, **THEN** **EXIT** this procedure and **ENTER** EOI Appendix 11H. Standard: 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 UNSAT N/A
Step 12: [2] **VERIFY** MSIVs open. Standard: Verifies MSIVs OPEN	SAT UNSAT N/A

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

STEP / STANDARD	SAT / UNSAT
Step 17: [4.4] **DEPRESS** 2-HS-46-9A, RFPT 2BSPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated. Standard: Depresses 2-HS-46-9A	**Critical Step** SAT UNSAT N/A
Step 18: [4.5] **DEPRESS** 2-HS-3-150A, RFPT 2B TRIP RESET. Standard: Depresses 2-HS-3-150A and verifies the 2-ZI-1-133 LP Stop Valve and 2-FCV-135 HP Stop Valve comes OPEN.	**Critical Step** SAT UNSAT N/A
Step 19: [4.6] **PLACE** 2-HS-46-138A, RFPT 2B START/LOCAL ENABLE, in START. Standard: Places 2-HS-46-138A in START	**Critical Step** SAT UNSAT N/A
Step 20: [4.7] **CHECK** RFPT 2B speed increases to approximately 600 rpm. Standard: Verifies RFPT 2B speed increases to approximately 600 rpm	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 21: [4.8] **VERIFY OPEN** 2-FCV-3-13, RFP2B MIN FLOW VALVE. Standard: Verifies 2-FCV-3-13 OPEN	SAT UNSAT N/A
Step 21: **CAUTION** RFP discharge pressure is limited to below 1250 psig to avoid system damage. [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. Standard: Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on 2-PI-3-9A RFPT 2B (Only Critical if exceeds 1250 psig, any pressure <1250 psig is acceptable).	**Critical Step** SAT UNSAT N/A

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 2A RFPT in alternate pressure control, as directed by 2-EOI-APPENDIX-11F and lower Reactor Pressure to low in the pressure band of 800 to 1000 psig.

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*

OPERATOR: _____ JPM Number: _____

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

VERIFICATION TIME: _____

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

Malfunctions	Description	Event	Severity	Delay	Initial set
fw15a	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.

Schedule Files:

1. NRC JPM E U3–Alt RPV Press Control RFP Min Flow.sch
2. NRC JPM E U3–Alt RPV Press Control RFP Min Flow RFPT Trip.evt

Revision Summary

Rev No.	Effective Date	Pages Affected	Description
0	05/11/15	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 3A RFPT in alternate pressure control, as directed by 3-EOI-APPENDIX-11F and lower Reactor Pressure to low in the pressure band of 800 to 1000 psig.

START TIME

STEP / STANDARD	SAT / UNSAT
Step 1: [1] **IF** BOTH of the following exist: • Emergency RPV Depressurization is required, **AND** • Group 1 Isolation Signal exists, **THEN** **EXIT** this procedure and **ENTER** EOI Appendix 11H. Standard: 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 UNSAT N/A
Step 2: [2] **VERIFY** MSIVs open. Standard: Verifies MSIVs OPEN	SAT UNSAT N/A

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

STEP / STANDARD	SAT / UNSAT
Step 7: [4.4] **DEPRESS** 3-HS-46-8A, RFPT 3A SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated. Standard: Depresses 3-HS-46-8A	**Critical Step** SAT UNSAT N/A
Step 8: [4.5] **DEPRESS** 3-HS-3-124A, RFPT 3A TRIP RESET. Standard: 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** SAT UNSAT N/A
Step 9: [4.6] **PLACE** 3-HS-46-112A RFPT 3A START/LOCAL ENABLE, in START. Standard: Places 3-HS-46-112A in START	**Critical Step** SAT UNSAT N/A
Note to Examiner: **RFPT A will Trip due to Low Bearing Oil Pressure at > 350 RPM**	
Step 10: [4.7] **CHECK** RFPT 3A speed increases to approximately 600 rpm. Standard: 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 UNSAT N/A
CUE: **US: Proceed as directed per 3-EOI-APPENDIX-11F.** **AO: Reports an oil leak of ~5 gpm on RFPT A bearings.**	

STEP / STANDARD	SAT / UNSAT
Step 11: [1] **IF** BOTH of the following exist: • Emergency RPV Depressurization is required, **AND** • Group 1 Isolation Signal exists, **THEN** **EXIT** this procedure and **ENTER** EOI Appendix 11H. Standard: 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 UNSAT N/A
Step 12: [2] **VERIFY** MSIVs open. Standard: Verifies MSIVs OPEN	SAT UNSAT N/A

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

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

STEP / STANDARD	SAT / UNSAT
Step 21: [4.8] **VERIFY OPEN** 3-FCV-3-13, RFP 3B MIN FLOW VALVE. Standard: Verifies 3-FCV-3-13 OPEN	**Critical Step** SAT UNSAT N/A
Step 21: **CAUTION** RFP discharge pressure is limited to below 1250 psig to avoid system damage. [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. Standard: Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure <1250 psig as indicated on 3-PI-3-9A RFPT 3B (Only Critical if exceeds 1250 psig, any pressure <1250 psig is acceptable).	**Critical Step** SAT UNSAT N/A

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 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 3A RFPT in alternate pressure control, as directed by 3-EOI-APPENDIX-11F and lower Reactor Pressure to low in the pressure band of 800 to 1000 psig.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	N2 MAKEUP TO PRIMARY CONTAINMENT WITH 2-EOI-APPENDIX-14A
JPM NUMBER:	669 U2	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 U2__

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: 2-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
Console Operator Instructions	1. Open Schedule File 2. Open Event File 3. Reset to IC-28 and take out of freeze. 4. Man Scram Rx and place MS to SD. 5. Inhibit ADS & Open 6 ADS Valves. 6. Fire Trigger 2 7. Place H2/O2 Analyzer in service with H2/O2 ISOL BYP Keylock Switch in BYPASS per EOI APPDX 19 8. Place DW Vent in Service per EOI APPX 12 9. Wait for Group 6 schedule file to time out and alrms to settle 10. Freeze simulator and save IC.

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
FW01A	CONDENSATE PUMP TRIP 2A	1	N/A	0	N/A
FW01B	CONDENSATE	1	N/A	0	N/A

	PUMP TRIP 2B				
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

Remotes	Description	Event	Severity	Delay	Initial set

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

Schedule File(s):

- JPM 669 U2 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.sch
- Appendix\App. 8E.sch
- JPM 669 U2 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.evt

Revision Summary

Rev No.	Effective Date	Pages Affected	Description
0	05/27/15	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 2.

- The Reactor is shutdown.
- 2-EOI-APPENDIX-12has been completed
- 2-EOI-APPENDIX-19 has been completed.
- PCIS Group 6 has been overridden per 2-EOI-APPENDIX-8E.

INITIATING CUES:

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

START TIME

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

STEP / STANDARD	SAT / UNSAT
Step 3: 4.**WHEN** ..... Drywell or Suppression Chamber H_2 or O_2 concentration is increasing,**THEN** ..... **CONTINUE** in this procedure. Standard: Observes a rise in Drywell H2 Concentration and continues with procedure.	SAT UNSAT N/A
Step 4: **NOTE** This procedure assumes that the normal makeup is from N_2 Storage Tank B. 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. Standard: Dispatches UO to verifyN_2 Storage Tank B Pressure	SAT UNSAT N/A
CUE: N_2 Storage Tank B Pressure is reading 180 psig	
Step 5: 6. **DETERMINE** area with highest H_2 and/or O_2 concentrations and **INFORM** SRO. Standard: Correctly determines highest concentration is in the drywell and informs US	**Critical Step** SAT UNSAT N/A
CUE: If asked about 15 minute sample time, state "15 minutes have elapsed"	

STEP / STANDARD	SAT / UNSAT
Step 6: 7. **VERIFY** PCIS RESET (Panel 2-9-4). Standard: Verifies PCIS RESET on Panel 2-9-4	**Critical Step** SAT UNSAT N/A
Step 7: 8. **IF** ..... It is desired to makeup N_2 to the Suppression Chamber,**THEN** .....**CONTINUE** in this procedure at Step 10. Standard: Correctly determine step is not applicable and proceeds to step 9.	**Critical Step** SAT UNSAT N/A
Step 8: 9. **CONTROL** Drywell H_2 and O_2 as follows: a. **OPEN** the following valves to admit N_2 to Drywell (Panel 2-9-3): • 2-FCV-76-18, DRYWELL N2 MAKEUP INBDISOLATION VLV • 2-FCV-76-17, PRI CTMT N2 MAKEUP OUTBDISOLATION VLV. Standard: OPENS 2-FCV-76-18, DRYWELL N2 MAKEUP INBD ISOLATION VLV & 2-FCV-76-17, PRI CTMT N2 MAKEUP OUTBD ISOLATION VLV	**Critical Step** SAT UNSAT N/A
Step 9: b. **SLOWLY ADJUST** 2-PC-76-14, DW/SUPPR CHBR N2 MU PRESS CONTROL (Panel 2-9-3), to maintain flow > 55 and <60 scfm on 2-XR-76-14, DW/SUPPR CHBR N2 MAKEUP FLOW/PRESS (Panel 2-9-3), or as directed by SRO if SAMG execution is in progress. Standard: Achieves a flowrate between 55-60 scfm and monitors Drywell Hydrogen Concentration Lowering	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 10: c. **CONTINUE** N_2 admission to the Drywell UNTIL Drywell H_2 and O_2 are below desired values. Standard: Monitors Drywell Hydrogen Concentration	SAT UNSAT N/A
Note to Examiner: **Once satisfied with N2 Flow established between 55 – 60 scfm with a downward trend on H2 Concentration in the Drywell. End of task.** **Pass/ Fail Criteria:** **Establish N2 Flow> 55 scfm and H2 Concentration on a downward trend.**	

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 Reactor is shutdown.
- 2-EOI-APPENDIX-12 has been completed
- 2-EOI-APPENDIX-19 has been completed.
- PCIS Group 6 has been overridden per 2-EOI-APPENDIX-8E.

INITIATING CUES:

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

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	N2 MAKEUP TO PRIMARY CONTAINMENT WITH 3-EOI-APPENDIX-14A
JPM NUMBER:	670 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: _670 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:_____

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
Console Operator Instructions	1. Open Schedule File 2. Open Event File 3. Reset to IC-28 and take out of freeze. 4. Man Scram Rx and place MS to SD. 5. Inhibit ADS & Open 6 ADS Valves. 6. Fire Trigger 2 7. Place H2/O2 Analyzer in service with H2/O2 ISOL BYP Keylock Switch in BYPASS per EOI APPDX 19 8. Place DW Vent in Service per EOI APPX 12 9. Wait for Group 6 schedule file to time out and alrms to settle 10. Freeze simulator and save IC.

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

Schedule File(s):

- JPM 669 U3 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.sch
- Appendix\App. 8E.sch
- JPM 669 U3 N2 Makeup to Primary Containment 2-EOI-APPENDIX-14A.evt

Revision Summary

Rev No.	Effective Date	Pages Affected	Description
0	05/27/15	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 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: 3. **MONITOR** Drywell and Suppression Chamber H_2 and O_2 concentrations on one or more of the following displays(3-EOI Appendix 19): • 3-MON-76-110, H2/O2 ANALYZER (Panel 3-9-55) • 3-XR-76-110, H2/O2 CONCENTRATION (Panel 3-9-54) Standard: Verifies H2 and O2 concentrations	SAT UNSAT N/A
Step 2: 3. **IF** ..... Drywell/Suppression Chamber H_2 /O_2 analyzer is or becomes inoperable, **THEN** .....**NOTIFY** Chemistry Lab to sample Drywell andSuppression Chamber for H_2 and O_2 using CI-644. Standard: Verifies Drywell/Suppression Chamber H_2 /O_2 analyzers are Operable	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 3: 4. **WHEN** ..... Drywell or Suppression Chamber H_2 or O_2 concentration is increasing,**THEN** ..... **CONTINUE** in this procedure. Standard: Observes a rise in Drywell H2 Concentration and continues with procedure.	SAT UNSAT N/A
Step 4: **NOTE** This procedure assumes that the normal makeup is from N_2 Storage Tank B. 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. Standard: Dispatches UO to verifyN_2 Storage Tank B Pressure	SAT UNSAT N/A
CUE: N_2 Storage Tank B Pressure is reading 180 psig	
Step 5: 6. **DETERMINE** area with highest H_2 and/or O_2 concentrations and **INFORM** SRO. Standard: Correctly determines highest concentration is in the drywell and informs US	**Critical Step** SAT UNSAT N/A
CUE: If asked about 15 minute sample time, state "15 minutes have elapsed"	

STEP / STANDARD	SAT / UNSAT
Step 6: 7. **VERIFY** PCIS RESET (Panel 3-9-4). Standard: Verifies PCIS RESET on Panel 3-9-4	**Critical Step** SAT UNSAT N/A
Step 7: 8. **IF** ..... It is desired to makeup N_2 to the Suppression Chamber,**THEN** .....**CONTINUE** in this procedure at Step 10. Standard: Correctly determine step is not applicable and proceeds to step 9.	**Critical Step** SAT UNSAT N/A
Step 8: 9. **CONTROL** Drywell H_2 and O_2 as follows: a. **OPEN** the following valves to admit N_2 to Drywell (Panel 3-9-3): • 3-FCV-76-18, DRYWELL N2 MAKEUP INBDISOLATION VLV • 3-FCV-76-17, PRI CTMT N2 MAKEUP OUTBDISOLATION VLV. Standard: OPENS 3-FCV-76-18, DRYWELL N2 MAKEUP INBD ISOLATION VLV &3-FCV-76-17, PRI CTMT N2 MAKEUP OUTBD ISOLATION VLV	**Critical Step** SAT UNSAT N/A
Step 9: 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. Standard: Achieves a flowrate between 55-60 scfm and monitors Drywell Hydrogen Concentration Lowering	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Step 10: c. **CONTINUE** N_2 admission to the Drywell UNTIL Drywell H_2 and O_2 are below desired values. Standard: Monitors Drywell Hydrogen Concentration	SAT UNSAT N/A
Note to Examiner: Once satisfied with N2 Flow established between 55 – 60 scfm with a downward trend on H2 Concentration in the Drywell. End of task. **Pass/ Fail Criteria: Establish N2 Flow > 55 scfm and H2 Concentration on a downward trend.**	

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.
- 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 2. Start A EDG and parallel with offsite 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

****

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.

- No Inclement weather currently exists in the area
- 8 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:

0-OI-82 Standby Diesel Generator System

Section 8.3 Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23

NOTE
The following list of 4-kV shutdown board normal and alternate feeder breakers may be useful when performing this section:

Shutdown Board	**A**	**B**	**C**	**D**
Norm Feed Bkr	1614	1616	1718	1724
Alt Feed Bkr	1716	1714	1624	1618

[1] **VERIFY** 4-kV Shutdown Board A is being supplied power by its respective Diesel Generator as the only source of power.

Standard:

Verifies 4-kV Shutdown Board A is being supplied by DG A.

</td><td>SAT
___UNSAT
N/A</td></tr>
<tr><td>

Step 2:

[2] **VERIFY** the associated 4kV shutdown board auto transfer lockout relay is tripped to MANUAL.

Diesel	**Handswitch Name**	**Handswitch No.**	**Panel**
A	4KV SD BD A AUTO/LOCKOUT RESET	0-211-3EA	0-9-23-7

Standard:

Verifies 4KV SD BD A AUTO/LOCKOUT RESET, HS-0-211-A, is tripped to manual.

</td><td>SAT
UNSAT
N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 3:

[3] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator in ON.

Standard:

Places Synchroscope switch for 4-kV Shutdown Board A normal feeder breaker 1614 to ON.</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>Step 4:

[4] VERIFY 4-kV Shutdown Bus 1(2) voltage is between 3950 Volts and 4400 Volts and NOT undergoing abnormal voltage transients.

Standard:

Verifies 4-kV Shutdown Bus 1 voltage is between 3950 Volts and 4400 Volts and NOT undergoing abnormal voltage transients.</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>Step 5:

[5] VERIFY associated incoming frequency is between 59 Hertz and 61 Hertz and NOT undergoing abnormal frequency transients.

<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>
Standard:

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

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 6:

CAUTION
DO NOT parallel the Diesel Generators with an unstable offsite source or during inclementweather (e.g., lightning, heavy winds).

[6] IF 4-kV Shutdown Bus 1 (2) is experiencing abnormal voltage or frequency conditions, THEN PERFORM the following:

Standard:

STEP N/A</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>Step 7:

CAUTION
Only one Unit 1 and 2 Diesel Generator at a time is allowed to be operated in parallel with system.

[7] PULL and PLACE the associated Diesel Generator mode selector switch in PARALLELED WITH SYSTEM.

<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>
Standard:

Pulls DG A MODE SELECT switch 0-HS-82-A/5A and places it in PARALLELED WITH SYSTEM.</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 8:

CAUTION
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.

[8] RELEASE the Diesel Generator mode selector switch and OBSERVE PARALLELED WITH SYSTEM light illuminated.

Standard:

Releases the Diesel Generator A mode selector switch, 0-HS-82-A/5A and observesPARALLELED WITH SYSTEM light is illuminated.
</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 9:

[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.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>A</td><td>DG A GOVERNOR CONTROL</td><td>0-HS-82-A/3A</td><td>0-9-23-7</td></tr>
</table>

Standard:

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.
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 10:

[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:

Matches DG A voltage with system voltage using DG A VOLT REGULATOR CONT switch 0-HS-82-A/2A.
</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 11:

[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.

Standard:

Closesthe 4-kV shutdown board feeder breaker 1614 when the synchroscope needle is approximately 2 minutes on the right hand side of the 12 o'clock position.
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 12:

[12] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that was paralleled with the Diesel Generator in OFF.

Standard:

Places the synchroscope switch for BKR 1614 in OFF.
</td><td>SAT

UNSAT

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.

Critical Step

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:

Loads DG to 2600 kW and 1850 kVAR by using 0-HS-82-A/3A and 0-HS-82-A/2A handswitches.

CUE: After first 100 kW load adjustment state "15 minutes have elapsed and no observable black smoke from exhaust stack for time compression and continue to full load."

STEP / STANDARD	SAT / UNSAT
Step 14: **NOTE** 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. [14] **USE** the associated Diesel Generator's governor control switch and voltage regulator control switch to obtain desired kW and kVAR load. Standard: 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 UNSAT N/A
CUE: state "30 minutes have elapsed continue with procedure."	
Step 15: [15] **MONITOR** the offsite source that is paralleled with the Diesel Generator. [16] **IF** abnormal voltage or frequency transients are experienced, **THEN** Standard: **Step is N/A**	SAT UNSAT N/A

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

STEP / STANDARD	SAT / UNSAT
Step 16: [17] **WHEN** Parallel with System operation is no longer desired, **THEN UNLOAD** the Diesel Generator as follows: **CAUTION** 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. [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** SAT UNSAT 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	**Critical Step** SAT UNSAT N/A

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.	

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 18:

[17.3] PULL and PLACE the associated Diesel Generator mode selector switch in SINGLE UNIT.

<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>

Standard:

Pulls and places 0-HS-211-A/5A to Single Unit.</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>Step 19:

[17.4] RELEASE the Diesel Generator mode selector switch and OBSERVE the SINGLE UNIT light illuminated.

Standard:

Verifies Single Unit light illuminated.</td><td>SAT

UNSAT

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
- 8 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:	Restore Offsite Power to 4KV shutdown board at PNL 9-23 U-3
JPM NUMBER:	631	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 and incoming 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

RO ____ SRO ____ DATE: _____

TASK STANDARD: Perform operations necessary to restore offsite power to 4KV SD BD EC.

PRA: NA

REFERENCES/PROCEDURES NEEDED: Procedure 3-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 2. Start C EDG and parallel with offsite 3. Open 4-kV Shutdown Board 3EC Breaker 1338

Malfunctions	Description	Event	Severity	Delay	Initial set

Remotes	Description	Event	Severity	Delay	Initial set

Overrides	Description	Event	Severity	Delay	Initial set

Batch / Pref File(s):

****

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.

- No Inclement weather currently exists in the area
- 8 hours ago, 4 KV Shutdown Board 3EC was separated from Offsite Power in accordance with 3-OI-82, Standby Diesel Generator System.

INITIATING CUE:

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board 3EC using the normal feeder breaker and remove DG 3C from parallel operation in accordance with 3-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:

3-OI-82 Standby Diesel Generator System

Section 8.3 Restoring Offsite Power to 4-kV Shutdown Board at Panel 9-23

NOTE
The following list of 4-kV shutdown board normal and alternate feeder breakers may be useful when performing this section:

<table>
<tr><th>Shutdown Board</th><th>3EA</th><th>3EB</th><th>3EC</th><th>3ED</th></tr>
<tr><td>Norm Feed Bkr</td><td>1334</td><td>1336</td><td>1338</td><td>1342</td></tr>
<tr><td>Alt Feed Bkr</td><td>1726</td><td>1728</td><td>1626</td><td>1628</td></tr>
</table>

[1] VERIFY 4-kV Shutdown Board 3EC is being supplied power by its respective Diesel Generator as the only source of power.

Standard:

Verifies 4-kV Shutdown Board EC is being supplied by DG C
</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 2:

[2] VERIFY the associated 4kV shutdown board auto transfer lockout relay is tripped to MANUAL.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>3C</td><td>4KV SD BD 3EC AUTO/LOCKOUT RESET</td><td>3-43-211-3EC</td><td>3-9-23</td></tr>
</table>

Standard:

Verifies 4KV SD BD 3EC AUTO/LOCKOUT RESET, 3-43-211-3EC, is tripped to manual.
</td><td>SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 3:

[3] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that is to be paralleled with the Diesel Generator in ON.

Standard:

Places Synchroscope switch for 4-kV Shutdown Board EC normal feeder breaker 1338 to ON</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>Step 4:

[4] CHECK the applicable 4-kV unit board (4-kV bus tie board) voltage is between 3950 VOLTS and 4400 VOLTS and NOT undergoing abnormal voltage transients.

Standard:

Verifies 4-kV Unit Board voltage is between 3950 Volts and 4400 Volts and NOT undergoing abnormal voltage transients.</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>Step 5:

[5] VERIFY associated incoming frequency is between 59 HERTZ and 61 HERTZ and NOT undergoing abnormal frequency transients.

<table><tr><th>Shutdown Bd</th><th>Instrument Name</th><th>Instrument No.</th><th>Panel</th></tr><tr><td>3EA or 3EB</td><td>GEN SYNC FREQUENCY</td><td>3-SI-82-3AB</td><td>3-9-23</td></tr><tr><td>3EC or 3ED</td><td>GEN SYNC FREQUENCY</td><td>3-SI-82-3CD</td><td>3-9-23</td></tr></table>
Standard:

Verifies incoming frequency is between 59 Hertz and 61 Hertz and NOT undergoing abnormal frequency transients using GEN SYNC FREQUENCY, 3-SI-82-CD .</td><td>SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 6:

CAUTION
DO NOT parallel the Diesel Generators with an unstable offsite source or during inclement weather (e.g., lightning, heavy winds).

[6] IF 4-kV unit board (4-kV bus tie board) is experiencing abnormal voltage or frequency conditions, THEN PERFORM the following:

Standard:

N/A</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>Step 7:

CAUTION
Only one Unit 1 and 2 Diesel Generator at a time is allowed to be operated in parallel with system.

[7] PULL and PLACE the associated Diesel Generator mode selector switch in PARALLELED WITH SYSTEM.

<table><tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr><tr><td>3C</td><td>DG 3C MODE SELECT</td><td>3-HS-82-3C/5A</td><td>3-9-23</td></tr></table>
Standard:

Pulls DG 3C MODE SELECT switch 3-HS-82-3C/5A and places it in PARALLELED WITH SYSTEM</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 8:

CAUTION
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.

[8] RELEASE the Diesel Generator mode selector switch and OBSERVE PARALLELED WITH SYSTEM light illuminated.

Standard:

Releases the Diesel Generator 3C mode selector switch, 3-HS-82-3C/5C and observes PARALLELED WITH SYSTEM light is illuminated.
</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 9:

[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.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>3C</td><td>DG 3C GOVERNOR CONTROL</td><td>3-HS-82-3C/3A</td><td>3-9-23</td></tr>
</table>

Standard:

Adjusts Diesel Generator 3C frequency using Diesel Generator governor control switch, 3-HS-82-3C/3A (in lower direction) to obtain a synchroscope needle rotation of one revolution every 15 to 20 seconds in the SLOW direction.
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 10:

[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">3C</td><td>DG 3C VOLT REGULATOR CONT</td><td>3-HS-82-3C/2A</td><td rowspan="3">3-9-23</td></tr>
<tr><td>GEN SYNC REF VOLTAGE</td><td>3-EI-82-3CD</td></tr>
<tr><td>SYSTEM SYNC REF VOLTAGE</td><td>3-EI-211-3ECB/B</td></tr>
</table>
Standard:

Matches DG C voltage with system voltage using DG 3C VOLT REGULATOR CONT switch 3-HS-82-3C/2A
</td><td>SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 11:

[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.

Standard:

Closes the 4-kV shutdown board normal feeder breaker 1338 when the synchroscope needle is approximately 2 minutes on the right hand side of the 12 o'clock position.
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 12:

[12] PLACE the synchroscope switch for the 4-kV shutdown board feeder breaker that was paralleled with the Diesel Generator in OFF.

Standard:

Places the synchroscope switch for BKR 1338 in OFF
</td><td>SAT

UNSAT

N/A</td></tr>
</table>

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>
Step 13:

[13] IF the normal feeder breaker is supplying the 4-kV shutdown board, THEN
RESET the associated 4kV shutdown board auto transfer lockout relay.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>3C</td><td>4KV SD BD 3EC AUTO/LOCKOUT RESET</td><td>3-43-211-3EC</td><td>3-9-23</td></tr>
</table>
Standard:

Resets 4KV SD BD 3EC Auto Transfer Lockout Relay
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>
Step 14:
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.

[14] 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):

[14.1] USE the associated Diesel Generator’s governor control switch and voltage regulator control switch to INCREASE kW and kVAR load, in increments of 100kW every 15 minutes.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td rowspan="2">3C</td><td>DG 3C GOVERNOR CONTROL</td><td>3-HS-82-3C/3A</td><td rowspan="2">3-9-23</td></tr>
<tr><td>DG 3C VOLT REGULATOR CONTROL</td><td>3-HS-82-3C/2A</td></tr>
</table>
</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
</table>

STEP / STANDARD	SAT / UNSAT
Step 14 continued: [14.2] **OBSERVE** the exhaust stack smoke concentration from outside the DG room after each incremental increase. [14.3] **STEP N/A** [14.4] **WHEN** smoke becomes relatively clear, **CONTINUE** to load DG engine to 100% if possible. [14.5] **MAINTAIN** 100% load for a minimum of 30 minutes. Standard: Loads DG to 2600 kW and 1850 kVAR by using 0-HS-82-A/3A and 0-HS-82-A/2A handswitches.	
CUE: After first 100 kW load adjustment state "15 minutes have elapsed and no observable black smoke from exhaust stack for time compression and continue to full load."	
Step 15: **NOTE** VARs lagging 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. [15] **USE** the associated Diesel Generator's governor control switch and voltage regulator control switch to obtain desired kW and kVAR load.	SAT UNSAT N/A

Diesel	Handswitch Name	Handswitch No.	Panel
3C	DG 3C GOVERNOR CONTROL	3-HS-82-3C/3A	3-9-23
	DG 3C VOLT REGULATOR CONT	3-HS-82-3C/2A	

STEP / STANDARD	SAT / UNSAT
Standard: Obtains desired kW and kVAR load using DG 3C Governor Control switch, 3-HS-82-3C/3A and DG Volt Regulator Control switch, 3-HS-82-3C/2A	
CUE: state "30 minutes have elapsed continue with procedure."	
Step 16: [16] **MONITOR** the offsite source that is paralleled with the Diesel Generator. [17] **IF** abnormal voltage or frequency transients are experienced, **THEN** Standard: **Step is N/A**	SAT UNSAT N/A
Step 17: [18] **WHEN** Parallel with System operation is no longer desired, **THEN UNLOAD** the Diesel Generator as follows: **CAUTION** When unloading the Diesel Generator, failure to slowly approach the 300 kW/250 kVAR limit may result in a reverse power trip of the Diesel Generator output breaker. [18.1] **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** SAT UNSAT N/A

Diesel	Instrument Name	Inst No.	Panel
3C	DG 3C GOVERNOR CONTROL	3-HS-82-3C/3A	3-9-23
	DG 3C VOLT REGULATOR CONT	3-HS-82-3C/2A	
	DG 3C KILOWATTS	3-JI-82-3C/A	
	DG 3C KILOVARS	3-VAR-82-3C/A	

<table>
<tr><th>STEP / STANDARD</th><th>SAT / UNSAT</th></tr>
<tr><td>Step 17 continued:
Standard:
Unloads the DG to approximately 300 KW and 250 kVAR</td><td></td></tr>
<tr><td>Step 18:

[18.2] PLACE the associated Diesel Generator breaker control switch in TRIP.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>3C</td><td>DG 3C BKR 1832</td><td>3-HS-211-3EC/10A</td><td>3-9-23</td></tr>
</table>
Standard:

Trips breaker DG 3C BKR 1832</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>Step 19:

[18.3] PULL and PLACE the associated Diesel Generator mode selector switch in SINGLE UNIT.

<table>
<tr><th>Diesel</th><th>Handswitch Name</th><th>Handswitch No.</th><th>Panel</th></tr>
<tr><td>3C</td><td>DG 3C MODE SELECT</td><td>3-HS-82-3C/5A</td><td>0-9-23</td></tr>
</table>
Standard:

Pulls and places 3-HS-82-3C/5A to Single Unit</td><td>Critical Step

SAT

UNSAT

N/A</td></tr>
<tr><td>Step 20:

[18.4] RELEASE the Diesel Generator mode selector switch and OBSERVE the SINGLE UNIT light illuminated.

Standard:

Verifies Single Unit light illuminated</td><td>SAT

UNSAT

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 3.

- No Inclement weather currently exists in the area
- 8 hours ago, 4 KV Shutdown Board 3EC was separated from Offsite Power in accordance with 3-OI-82, Standby Diesel Generator System.

INITIATING CUE:

The Unit Supervisor has directed you to restore offsite power to 4KV Shutdown Board 3EC using the normal feeder breaker and remove DG 3C from parallel operation in accordance with 3-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*

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 2. Fire Manual Trigger 2 3. Fire Manual Trigger 1 4. Station 2nd operator to respond to alarms

Malfunctions	Description	Event	Severity	Delay	Initial set
TH23	FUEL CLADDING DAMAGE	1	50	N/A	YES
RM14C	OFFGAS RAD MONITOR FAILURERM-90-265A	1	1E6 CPS	N/A	YES
RM14D	OFFGAS RAD MONITOR FAILURE RM-90-266A	1	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	1	6.0	N/A	YES
ZAORM90266A	90-266 METER UPSCALE	1	6.0	N/A	YES
ZAORR90135R1	90-135 RECORDER UPSCALE PEN 1	1	6.0	N/A	YES
ZAORR90135R2	90-135 RECORDER UPSCALE PEN 2	1	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
XA553A27	MSL RAD HI 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	1	6.0	N/A	YES
ZAORR90265R2	90-265 RECORDER UPSCALE PEN 2	1	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 100% power.

INITIATING CUE:

The Unit Supervisor directs you to respond to an OFF-GAS POST TREATMENT RADIATION HI-HI-HI annunciator, 2-XA-55-4C, window 35.

START TIME_____

STEP / STANDARD	SAT / UNSAT
Performance Step 1: When directed, identify/obtain copy of ARP-9-4C, window 35. Standard: Obtains copy of 2-ARP-9-4C, window 35	SAT UNSAT 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: **2-ARP-9-4C window 35** **Operator Action:** A. **VERIFY** alarm condition on the following • OFFGAS POST-TREATMENT RADIATION recorder, 2-RR-90-265 on Panel 2-9-2. • OG POST-TREATMENT CHAN A RAD MON RTMR radiationmonitor, 2-RM-90-266A on Panel 2-9-10. • OG POST-TREATMENT CHAN B RAD MON RTMR radiationmonitor, 2-RM-90-265A on Panel 2-9-10. Standard: Verified alarm condition on 2-RR-90-265 and 2-RM-265/266.	SAT UNSAT N/A
Performance Step 3: B. **VERIFY** OFF-GAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 has the Mechanical Restraint **DISENGAGED** and 2-FCV-66-28 isCLOSED. Standard: Takes handswitch 2-FCV-66-28 to close and observes green light illuminated and red light out.	**Critical Step** SAT UNSAT N/A
Cue: If asked, the Offgas Isolation Valve, 2-FCV-66-28 is NOT mechanically restrained.	

STEP / STANDARD	SAT / UNSAT
Performance Step 4: C. **REFER** to 2-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi Standard: Refers to 2-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi	SAT UNSAT N/A
Performance Step 5: **2-AOI-66-2** **4.0 OPERATOR ACTIONS** **4.1 Immediate Actions** [1] **IF** scram has not occurred, **THEN** PERFORM the following: [1.1] **IF** core flow is above 60%, **THEN** **REDUCE** core flow to between 50-60%. Standard: Reduced core flow to between 50-60% with recirc system.	**Critical Step** SAT UNSAT N/A
Performance Step 6: [1.2] **MANUALLY SCRAM** the Reactor. (Reference 2-AOI-100-1). Standard: • Depresses both SCRAM Pushbuttons • Places mode switch in shutdown • Verifies All Rods in • Performs a Scram Announcement ○ Rx Mode Switch Position: Shutdown ○ Rod Position: All Full In ○ Reactor Water Level ____ & Trend ___ ○ Reactor Pressure ____ & Trend ___ ○ MSIV Position: OPEN ○ Rx Power: <5%	**Critical Step** SAT UNSAT N/A
Examiner Note: The scram report and referring to 2-AOI-100-1 are not considered critical.	

STEP / STANDARD	SAT / UNSAT
CUE: Proceed with subsequent actions of 2-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi	
Performance Step 7: **4.2 Subsequent Actions** [1] **IF** OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-066-0028has been mechanically restrained open due to plant conditions**THEN** **DISENGAGE** 2-FCV-066-0028 mechanical restraint by rotating the restraining handwheel fully in the counterclockwisedirection, locally at the Stack. (Otherwise N/A) Standard: Verifies that 2-FCV-066-0028 in NOT mechanically restrained.	SAT UNSAT N/A
Cue: 2-FCV-066 is NOT mechanically restrained.	
Performance Step 8: [2] VERIFY CLOSED OFFGAS SYSTEM ISOLATION VALVE, 2-FCV-66-28 on Panel 2-9-53 or locally. Standard: 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** SAT UNSAT N/A
Examiner Note: May have already verified valve closed from the ARP	
Performance Step 9: [3] **MONITOR** area radiation levels at Panel: 2-9-11. Standard: Monitored radiation levels at Panel 9-11.	SAT UNSAT N/A
Cue: Another operator will monitor and evaluate Area Radiation Levels.	

STEP / STANDARD	SAT / UNSAT
Performance Step 10: [4] **REFER TO** EPIP-1 for emergency classification level and response. Standard; Notifies SM to implement EPIP-1.	SAT UNSAT N/A
Cue: **The Shift Manager is implementing the EPIPs as needed.**	
Performance Step 11: [5] **MONITOR** the following parameters: A. MAIN STEAM LINE RADIATION, 2-RR-90-135, Panel 2-9-2. B. OFFGAS PRETREATMENT RADIATION 2-RR-90-157, Pnl 2-9-2. C. OFFGAS POST-TREATMENT RADIATION 2RR-90-265, Pnl 2-9-2 D. STACK GAS RADIATION, 0-RR-90-147, Unit 1 Panel 1-9-2. Standard; Monitors 90-135, 157, and 265. Calls Unit 1 operator for a reading on 0-RR-90-147.	SAT UNSAT 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: [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** **CLOSE** all Main Steam Isolation Valves and Main Steam LineDrain Valves, 2-FCV-1-55 and 2-FCV-1-56. Standard: 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** SAT UNSAT N/A
Cue: **The Unit has been scrammed for 5 minutes.** • **Acknowledge closing of MSIVs.**	
Examiner Note: **Closing 1-55 and 1-56 is not considered critical.**	
Performance Step 13: **NOTE** Placing additional Stack Dilution Air Fans in service should keep 0-RM-90-147and 0-RM-90-148 on scale. [7] **PLACE** STACK DILUTION FAN SEL control switch, 2-XS-66-29, Panel 2-9-8, in OFF. [8] **START** standby STACK DILUTION FAN 2B(2A) using controlswitch, 2-HS-66-31A(29A), Panel 2-9-8. Standard: Places 2-XS-66-29 in OFF and Starts standby Stack Dilution fan 2B, using 2-HS-66-31A	SAT UNSAT N/A
Cue: **That completes this task.**	

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 100% power.

INITIATING CUE:

The Unit Supervisor directs you to respond to an OFF-GAS POST TREATMENT RADIATION HI-HI-HI annunciator, 2-XA-55-4C, window 35.

Job Performance Measure (JPM)

SITE:	BFN	JPM TITLE:	Respond to Off-Gas Post Treatment Radiation HI-HI-HI
JPM NUMBER:	190 U3	REVISION:	0

TASK APPLICABILITY:	SR■	STA☐	UO■	NAL☐D
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*

OPERATOR: _____ JPM Number: 190

RO SRO DATE: _____

TASK STANDARD: Respond to Off-Gas Post Treatment Radiation HI-HI-HI per 3-AOI-66-2 and/or 3-ARP-9-4C/35

PRA: NA

REFERENCES/PROCEDURES NEEDED: 3-AOI-66-2, 3-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	288

Console Operator Instructions	1. Reset to IC 28 2. Fire Manual Trigger 2 3. Fire Manual Trigger 1 4. Station 2nd operator to respond to alarms

Malfunctions	Description	Event	Severity	Delay	Initial set
TH23	FUEL CLADDING DAMAGE	1	50	N/A	YES
RM14C	OFFGAS RAD MONITOR FAILURE RM-90-265A	1	1E6 CPS	N/A	YES
RM14D	OFFGAS RAD MONITOR FAILURE RM-90-266A	1	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	1	6.0	N/A	YES
ZAORM90266A	90-266 METER UPSCALE	1	6.0	N/A	YES
ZAORR90135R1	90-135 RECORDER UPSCALE PEN 1	1	6.0	N/A	YES
ZAORR90135R2	90-135 RECORDER UPSCALE PEN 2	1	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
XA553A27	MSL RAD HI 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	1	6.0	N/A	YES
ZAORR90265R2	90-265 RECORDER UPSCALE PEN 2	1	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 U3 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 3 Operator. Unit 3 is at 100% power.

INITIATING CUE:

The Unit Supervisor directs you to respond to an OFF-GAS POST TREATMENT RADIATION HI-HI-HI annunciator, 3-XA-55-4C, window 35.

START TIME_____

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

STEP / STANDARD	SAT / UNSAT
Performance Step 4: C. **REFER** to 3-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi Standard: Refers to 3-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi	SAT UNSAT N/A
Performance Step 5: **3-AOI-66-2** **4.0 OPERATOR ACTIONS** **4.1 Immediate Actions** [1] **IF** scram has not occurred, **THEN** PERFORM the following: [1.1] **IF** core flow is above 60%, **THEN** **REDUCE** core flow to between 50-60%. Standard: Reduced core flow to between 50-60% with recirc system.	**Critical Step** SAT UNSAT N/A
Performance Step 6: [1.2] **MANUALLY SCRAM** the Reactor. (Reference 3-AOI-100-1). Standard: • Depresses both SCRAM Pushbuttons • Places mode switch in shutdown • Verifies All Rods in • Performs a Scram Announcement ○ Rx Mode Switch Position: Shutdown ○ Rod Position: All Full In ○ Reactor Water Level ____ & Trend ___ ○ Reactor Pressure ____ & Trend ___ ○ MSIV Position: OPEN ○ Rx Power: <5%	**Critical Step** SAT UNSAT N/A
Examiner Note: The scram report and referring to 3-AOI-100-1 are not considered critical.	

STEP / STANDARD	SAT / UNSAT
CUE: Proceed with subsequent actions of 3-AOI-66-2, Off-gas Post-treatment Radiation Hi-Hi-Hi	
Performance Step 7: **4.2 Subsequent Actions** [1] **IF** OFFGAS SYSTEM ISOLATION VALVE, 3-FCV-066-0028has been mechanically restrained open due to plant conditions**THEN** **DISENGAGE**3-FCV-066-0028 mechanical restraint by rotating the restraining handwheel fully in the counterclockwisedirection, locally at the Stack. (Otherwise N/A) Standard: Verifies that 3-FCV-066-0028 in NOT mechanically restrained.	SAT UNSAT N/A
Cue: 3-FCV-066 is NOT mechanically restrained.	
Performance Step 8: [2] VERIFY CLOSED OFFGAS SYSTEM ISOLATION VALVE, 3-FCV-66-28 on Panel 3-9-53 or locally. Standard: Verifies 3-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** SAT UNSAT N/A
Examiner Note: May have already verified valve closed from the ARP	
Performance Step 9: [3] **MONITOR** area radiation levels at Panel: 3-9-11. Standard: Monitored radiation levels at Panel 9-11.	SAT UNSAT N/A
Cue: Another operator will monitor and evaluate Area Radiation Levels.	

STEP / STANDARD	SAT / UNSAT
Performance Step 10: [4] **REFER TO** EPIP-1 for emergency classification level and response. Standard: Notifies SM to implement EPIP-1.	SAT UNSAT N/A
Cue: **The Shift Manager is implementing the EPIPs as needed.**	
Performance Step 11: [5] **MONITOR** the following parameters: A. MAIN STEAM LINE RADIATION, 3-RR-90-135, Panel 3-9-2. B. OFFGAS PRETREATMENT RADIATION 3-RR-90-157, Pnl3-9-2. C. OFFGAS POST-TREATMENT RADIATION 3-RR-90-265, Pnl3-9-2 D. STACK GAS RADIATION, 0-RR-90-147, Unit 1 Panel 1-9-2. Standard: Monitors 90-135, 157, and 265. Calls Unit 1 operator for a reading on 0-RR-90-147.	SAT UNSAT 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: [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 3-RR-90-265 on panel 3-9-2, **THEN** **CLOSE** all Main Steam Isolation Valves and Main Steam LineDrain Valves, 3-FCV-1-55 and 3-FCV-1-56. Standard: 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 (3-FCV-1-55/56)	**Critical Step** SAT UNSAT N/A
Cue: **The Unit has been scrammed for 5 minutes.** • **Acknowledge closing of MSIVs.**	
Examiner Note: **Closing 1-55 and 1-56 is not considered critical.**	
Performance Step 13: **NOTE** Placing additional Stack Dilution Air Fans in service should keep 0-RM-90-147and 0-RM-90-148 on scale. [7] **PLACE** STACK DILUTION FAN SEL control switch, 3-XS-66-29, Panel 3-9-8, in OFF. [8] **START** standby STACK DILUTION FAN 3B(3A) using controlswitch, 3-HS-66-31A(29A), Panel 3-9-8. Standard: Places 3-XS-66-29 in OFF and Starts standby Stack Dilution fan 3B, using 3-HS-66-31A	SAT UNSAT N/A
Cue: **That completes this task.**	

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 3 Operator. Unit 3 is at 100% power.

INITIATING CUE:

The Unit Supervisor directs you to respond to an OFF-GAS POST TREATMENT RADIATION HI-HI-HI annunciator, 3-XA-55-4C, window 35.

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: _____
_____
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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	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 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 and C Electric Fire Pumps per 0-OI-26 section 5.4.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: [1] **PLACE** the FIRE PUMP A TRANSFER switch, 0-XS-26-1 in EMERGENCY position, at the respective switchgear. **Pump** / **Board** / **Compt** A / 4160V Shutdown Bd A / 11 C / 4160V Shutdown Bd C / 10 Standard: Simulates placing FIRE PUMP A TRANSFER switch 0-XS-26-3 in EMERGENCY position at 4160 Shutdown Board A, Compartment 11	**Critical Step** SAT UNSAT N/A
CUE: FIRE PUMP A TRANSFER switch 0-XS-26-1 is in the EMERGENCY position	
Step 2: [2] **CLOSE** the breaker by placing the FIRE PUMP A CONTROL switch, 0-HS-26-1C to CLOSE. Standard: Simulates placing FIRE PUMP A CONTROL switch, 0-HS-26-1C to CLOSE position.	**Critical Step** SAT UNSAT 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 3: [3] **CHECK** pump ammeter at breaker indicates between 25 and 40 amps. Standard **VERIFIES** pump ammeter at breaker indicates between 25 and 40 amps.	SAT UNSAT N/A
CUE: FIRE PUMP A ammeter at breaker indicates 30 amps.	

Step 4: [4] **PLACE** the NORM/EMERG Switch in NORMAL. Standard **PLACES** the NORM/EMERG Switch in NORMAL for FIRE PUMP A.	SAT UNSAT N/A
CUE: FIRE PUMP A NORM/EMERG Switch is in NORMAL	
Step 5: [1] **PLACE** the FIRE PUMP C TRANSFER switch, 0-XS-26-3 in EMERGENCY position, at the respective switchgear. **Critical Step** Standard: Simulates placing FIRE PUMP C TRANSFER switch 0-XS-26-3 in EMERGENCY position at 4160 Shutdown Board C, Compartment 10	SAT UNSAT N/A
CUE: FIRE PUMP C TRANSFER switch 0-XS-26-3 is in the EMERGENCY position	
Step 5: [2] **CLOSE** the breaker by placing the FIRE PUMP C CONTROL switch, 0-HS-26-3C to CLOSE. **Critical Step** Standard: Simulates placing FIRE PUMP C CONTROL switch, 0-HS-26-3C to CLOSE position.	SAT UNSAT 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.	

Pump	Board	Compt
A	4160V Shutdown Bd A	11
C	4160V Shutdown Bd C	10

Step 6: [3] **CHECK** pump ammeter at breaker indicates between 25 and 40 amps. Standard **VERIFIES** pump ammeter at breaker indicates between 25 and 40 amps.	SAT UNSAT N/A
CUE: FIRE PUMP C ammeter at breaker indicates 30 amps.	
Step 7: [4] **PLACE** the NORM/EMERG Switch in NORMAL. Standard **PLACES** the NORM/EMERG Switch in NORMAL for FIRE PUMP C.	SAT UNSAT N/A
CUE: FIRE PUMP C NORM/EMERG Switch is in NORMAL and this completes the JPM. **Termination Criteria: When two Fire Pumps are in service the JPM is complete.**	

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 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 and C Electric Fire Pumps per 0-OI-26 section 5.2.

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

STEP / STANDARD	SAT / UNSAT
Step 3: [4] **VERIFY** charged hoses in stairwell are not obstructing stairway access and/or kinked. [4.1] **ADJUST** hose straps, as necessary. Standard: VERIFIES hoses in stairwell are not kinked	SAT UNSAT N/A
Note to Examiner: **Hoses are already run along the stairwell. Applicant should verify hoses not kinked and connected.**	
Step 4: [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). Standard: **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** SAT UNSAT 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.** **Location:** **Refuel Floor Elevation 664 ft, R U Line.**	
Step 5: [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) Standard: **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** SAT UNSAT 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.** **Location:** **Refuel Floor Elevation 664 ft, R U Line.**	
Step 6: [7] **VERIFY OPEN** the following valves (El 664', Refuel Floor, R6 U Line): • NORTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0796. • SOUTH HDR SPLY TO EMER FUEL POOL MU, 1-SHV-067-0797. Standard: 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** SAT UNSAT 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** **Location:** **Refuel Floor Elevation 664 ft, R U Line.**	
Step 7: [8] **VERIFY** charged hoses on the Refuel Floor are not kinked. Standard: **VERIFY** charged hoses on the Refuel Floor are not kinked	SAT UNSAT 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

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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 in accordance with Section 8.1.
- Maintenance has been completed on the Unit 3 Unit Preferred MMG Set.

INITIATING CUES:

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

NOTE: PERFORMER WILL NEED GGMKA KEY.

CAUTION: DO NOT OPERATE ANY PLANT EQUIPMENT!

START TIME:_____

STEP / STANDARD	SAT / UNSAT
Step 1: **NOTE** Steps 5.5[16] through 5.5[26] are performed from Battery Board Room 2 UNIT PFD Sync. & Speed Control Panel. [16] **PLACE** UNIT 3 MMG OPERATING MODE, 3-HS-252-02AB in AUTO. Standard: **VERIFIED/SIMULATED PLACING** the Unit 3 MMG SET OPERATING MODE 3-HS-252-02AB in AUTO.	**Critical Step** SAT UNSAT N/A
Cue: The Unit 3 MMG SET OPERATING MODE 3-HS-252-02AB is in AUTO position.	
Step 2: [17] **PLACE** UNIT 3 MMG LOCAL-REMOTE CONTROL, 3-XS-252-02A in REMOTE. Standard: **SIMULATED PLACING** the Unit 3 MMG SET LOCAL-REMOTE CONTROL 3-XS-252-02A in the REMOTE position.	**Critical Step** SAT UNSAT N/A
Cue: The Unit 3 MMG SET LOCAL-REMOTE CONTROL 3-HS-252-02A is in the REMOTE position.	
Step 3: [18] **PLACE** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH SS-7, 3-HS-252-03/SS-7 in ON. Standard: **SIMULATED PLACING** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH, SS-7, 3-HS-252-03/SS-7, in the ON position.	**Critical Step** SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
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: **NOTE** MMG voltage and hertz are read as INCOMING. [19] **MATCH** Incoming to Running AC volts using UNIT 3 MMG VOLTAGE ADJUST, 3-HS-252-02CD. Standard: **SIMULATED MANIPULATING** UNIT 3 MMG VOLTAGE ADJUST, 3-HS 252-02CD until cued that incoming and running AC volts are matched.	**Critical Step** SAT UNSAT N/A
Cue: INCOMING and RUNNING VOLTAGES are EQUAL at 122 Volts	
Step 5: [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. Standard: **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** SAT UNSAT N/A
Cue: State: "The Initial Synchroscope indicator is standing still at the 5 o'clock position." **Note: If student raises frequency the state: "Synchroscope indicator is rotating in the CLOCKWISE direction at 12 seconds per revolution."** **Note: If student lowers frequency the state: "Synchroscope indicator is rotating in the COUNTERCLOCKWISE direction at 12 seconds per revolution."**	

STEP / STANDARD	SAT / UNSAT
Step 6:	
NOTES 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. 2) If breaker 1001 trips, it must be reset with reset push button on the respective Unit Battery Board, Panel 10.	
CAUTIONS 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] • When transferring Bus power supplies from one MMG to another MMG. • 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.) 2) Minimize the number of Bus power supply transfers and only transfer Bus power supplies when absolutely necessary. 3) During the transfer of Bus power supplies the affiliated RPS circuit protectors 1(2)C1 and/or 1(2)C2 may trip.	**Critical Step** SAT UNSAT N/A
Start of Critical Step(s)	
[21] **WHEN** SYNCHROSCOPE, 0-SCP-252-000A/B is 5 minutes prior to 12 o'clock, in the SLOW counter-clockwise direction, **THEN** PERFORM the following expeditiously: [21.1] **CLOSE** UNIT 3 BKR 1001, using 0-HS-280-003/1001. [21.2] **ENSURE CLOSED** UNIT 3 BKR 1001.	

STEP / STANDARD	SAT / UNSAT
Standard(step 6 continued): 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. **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.** **CUE: [WHEN CLOSED] UNIT 3 BREAKER 1001 BREAKER POSITION INDICATING LAMP CHANGED FROM ILLUMINATED GREEN TO ILLUMINATED RED.**	
Step 7: [21.3] **OPEN** the UNIT 3)BKR 1002, using 0-HS-280-003/1002. End of Critical Step(s) Standard: **SIMULATED** UNIT 3 BKR 1002, 0-HS-282-003/1002in the OPEN position.	**Critical Step** SAT UNSAT N/A
CUE: UNIT 3 BKR 1002, 0-HS-282-003/1002 IS IN THE OPEN POSITION WITH RED LIGHT ILLUMINATED. **NOTE: DO NOT ALLOW THE EXAMINEE TO OPERATE THE AMMETER SELECTOR SWITCH FOR THE FOLLOWING STEP.**	
Step 8: [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).	SAT UNSAT N/A

STEP / STANDARD	SAT / UNSAT
Standard: **CHECKED** amp indicators L1 MINUS L2 approximately equals n.	
Cue: L1, L2, N AMPS INDICATIONS HAVE RISEN and L1-L2 = N. **Note: Selector Switch positions are labeled as follows: Position 1 is L1, position 2 is L2 and Position 3 is N.**	
Step 9: [23] **ENSURE OPEN** UNIT 3 BKR 1003, 0-HS-280-003/1003 Standard: **VERIFIED** ILLUMINATED GREEN position indicating light above 0-HS-282-003/1003.	SAT UNSAT N/A
Cue: Unit 3 Breaker 1003 0-HS-280-003/1003 Position Indicating Lamp changed from illuminated RED to illuminated GREEN.	
Step 10: [24] On Unit 2 Unit Preferred MMG Set Local Control Panel, **ENSURE OPEN** the following fused disconnect switches: • BACKUP SOURCE TO BAT BD 1 BKR 1003, 1-FUDS-280-001/1003 • BACKUP SOURCE TO BAT BD 3 BKR 1003, 3-FUDS-280-003/1003 Standard: 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.	SAT UNSAT N/A
Cue: 1-FUDS-280-001/1003 and 3-FUDS-280-003/1003 are in the OPEN position.	

STEP / STANDARD	SAT / UNSAT
Step 11: [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: Standard: On Unit 3 Unit Preferred MMG Set Local Control Panel, **VERIFIED** 2-FUDS-280-002/1003 in the OPEN position.	SAT UNSAT N/A
Cue: 2-FUDS-280-002/1003 is in the OPEN position.	
Step 12: [26] On Battery Board 2: **PLACE** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH SS-7, 1-HS-252-03/SS-7 in OFF. Standard: **SIMULATED PLACING** UNIT 3 PFD SYSTEM GENERATOR SOURCE SYNC SWITCH, SS-7, 1-HS-252-03/SS-7 in the OFF position.	SAT UNSAT 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: [27] On Battery Board 2: **DEPRESS** UNIT 3 MMG AC MOTOR START, 3-HS-252-02AD to return to Normal AC power from DC drive. Standard: **SIMULATED DEPRESSING and RELEASING** UNIT 3 MMG AC MOTOR START , 3-HS-252-02AD pushbutton.	**Critical Step** SAT UNSAT N/A
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

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