

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: JPPF-013A

2013 NRC In-Plant i: START AND LOAD THE
DIESEL GENERATOR DURING CONTROL ROOM
EVACUATION

APPROVAL:

APPROVAL DATE:

REV NO: 3

CANDIDATE: _____

EXAMINER: _____

TASK:

000-068-05-01 PERFORM CONTROL ROOM EVACUATION

TASK STANDARD:

Diesel started, field flashed, power is supplied to 1DA.

TERMINATING CUE: CRS notified of 1DA status.

PREFERRED EVALUATION LOCATION

PLANT

PREFERRED EVALUATION METHOD

SIMULATE

REFERENCES:

TOOLS: AOP-600.1, CONTROL ROOM EVACUATION, Attachment 3,
LOCAL STARTING AND LOADING DIESEL GENERATOR A(B)

EVALUATION TIME 20 ***TIME CRITICAL*** NO ***10CFR55:*** 45.a.8

TIME START: TIME FINISH: PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: UNSAT: _____

CANDIDATE: _____

EXAMINER: _____ _____
SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

This JPM should only be run on a "A" train maintenance week and when the diesel rooms are not marked off as restricted areas due to EOOS. If it is a "B" train maintenance week use JPPF-013B.

INITIAL CONDITION:

A control room evacuation has occurred. You as the BOP just completed AOP-600.1 Attachment 2, DUTIES OF THE BOP OPERATOR. During performance of the Attachment you determined that power was not available to 1DA.

INITIATING CUES:

The CRS directs you to start the "A" Diesel Generator in accordance with AOP-600.1, Attachment 3, LOCAL STARTING AND LOADING DIESEL GENERATOR A(B)

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

***AT NO TIME ARE YOU TO OPERATE
ANY PLANT EQUIPMENT!***

***FOR ELECTRICAL MANIPULATIONS, AT
NO TIME ARE YOU TO BREAK THE
PLANE OF THE ELECTRICAL PANEL!***

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Ensure both of the following breakers are open (IB-463):
XSW1DA 01, BUS 1DA NORMAL INCOMING BKR.
XSW1DA 15, BUS 1DA EMERG INCOMING BKR.

STEP STANDARD:

Verifies green light lit and red light off for both incoming breakers.

CUES:

Evaluator Cue: Cue examinee that green light is lit and red light is off for XSW1DA 01, BUS 1DA NORMAL INCOMING BKR and XSW1DA 15, BUS 1DA EMERG INCOMING BKR.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Determine the cause of Diesel Generator start failure:
Check alarms and indications at the local DG Control Panel. REFER TO ARP-004-XCX-5201.
Verify problems found will NOT prevent starting the DG.

STEP STANDARD:

Determines that alarms do not indicate a problem that has to be fixed to start generator.

CUES:

Evaluator Cue: When asked which alarms are present on XCX-5201 report that no annunciators are in alarm.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Place REMOTE/LOCAL/MAINT Switch in LOCAL.

STEP STANDARD:

REMOTE/LOCAL/MAINT Switch in LOCAL.

CUES:

Evaluator Cue: When switch is taken to local indicate that XCX-5201 6-5, LOCAL CONTROL goes into alarm.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Ensure the VOLT REG is in AUTO.

STEP STANDARD:

Verifies VOLT REG switch is in AUTO.

CUES:

Examiner Cue: Cue examinee that VOLT REG switch is in AUTO.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Depress the following reset pushbuttons:
GEN RELAYS RESET.
EXCITER RESET.

STEP STANDARD:

Depresses GEN RELAYS RESET and EXCITER RESET.

CUES:

Evaluator Cue: Cue applicant that there are no changes to indications.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Attempt to start the Diesel Generator by depressing the ENGINE SHUT DOWN RESET Pushbutton.

STEP STANDARD:

ENGINE SHUT DOWN RESET is pushed. When cued that there is no response, goes to step 9 as an alternative action.

CUES:

Examiner Cue: When button is pushed indicate that there are no change in indications.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Attempt to start the Diesel Generator:
Momentarily depress the EMERG START Pushbutton.
Verify the Diesel starts and accelerates to 514 rpm.

STEP STANDARD:

Pushes EMERG START Pushbutton and notices that Diesel does not start. Goes to alternative action.

CUES:

Evaluator Cue: Cue applicant that there is no change in indications when button is pressed.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

b. Attempt to start the Diesel using the Main Air Start Valve:

1) Using the attached spanner wrench, depress and hold the pushbutton on one of the following for five seconds (located at either end of the Diesel):

XVM10996A-DG, DIESEL GEN A MAIN AIR START VALVE A.

OR

XVM10996B-DG, DIESEL GEN A MAIN AIR START VALVE B.

2) Verify the Diesel starts and accelerates to 514 rpm.

STEP STANDARD:

Uses spanner wrench to push on one of the air start valves. Verifies that diesel accelerates to 514 rpm.

CUES:

Evaluator Cue: Cue applicant that diesel is heard to start. Cue that RPM's indicate 514 rpm if meter is observed.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 9

Verify the Generator voltage indication increased to between 6800 Volts and 7600 Volts.

STEP STANDARD:

Determines that voltage has remained at 0 volts and goes to alternate action.

CUES:

Examiner Cue: Cue applicant that voltage remains at 0 volts.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 10

Perform a manual field flash:

- 1) Momentarily place FIELD FLASH Switch to FLASH.
- 2) Verify Generator voltage increases to between 6800 Volts and 7600 Volts.

STEP STANDARD:

Places FIELD FLASH Switch to FLASH. Verifies generator voltage increase to 7200 volts.

CUES:

Examiner Cue: Cue applicant that voltage has increased to 7200 volts.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 11

Depress the EMERG START RESET Pushbutton.

STEP STANDARD:

EMERG START RESET Pushbutton depressed.

CUES:

Evaluator Cue: Cue applicant that EMERG START light at top of board goes from lit to off.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 12

Reset all annunciators on XCX5201.

STEP STANDARD:

Presses reset on XCX5201.

CUES:

Evaluator Cue: Cue applicant that only alarm in is 6-5, LOCAL CONTROL, before and after reset is pressed.

Evaluator Note: Because there are no annunciators to reset the applicant may not press the reset pushbutton.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 13

Procedure Caution: If any DG annunciator will NOT reset, it should be evaluated by the Shift Supervisor prior to performing Step 12, since it may cause the DG or its output breaker to trip.

Depress the TEST START Pushbutton.

STEP STANDARD:

TEST START Pushbutton depressed.

CUES:

Evaluator Cue: Cue applicant that there is no change in indication after button is depressed.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 14

Ensure BUS 1DA DG FEED is closed.

STEP STANDARD:

Verifies BUS 1DA DG FEED indicates red light lit, green light off and voltage is indicated on 1DA.

CUES:

Evaluator Cue: Cue applicant that BUS 1DA DG FEED indicates red light lit, green light off and voltage is 7200 KV on 1DA.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 15

Adjust Generator voltage to 7200 Volts using the AUTO VOLT CNTRL Switch.

STEP STANDARD:

Generator Voltage is between 6840 and 7445 Volts.

CUES:

Evaluator Cue: Cue applicant that voltage is at 7200 volts. If AUTO VOLT CNTRL Switch is used indicate changing voltages.

Evaluator Note: This voltage band is that required for steady state operation in accordance with TSR 1068.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 16

Adjust Generator frequency to 60 Hertz using the GOVERNOR Switch.

STEP STANDARD:

Generator frequency is 60 +/-0.6 Hz.

CUES:

Evaluator Cue: Cue applicant that frequency is at 60 Hz. If the GOVERNOR Switch is used indicate changing frequency.

Evaluator Note: This frequency band is that required for steady state operation in accordance with TSR 1068.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 17

Notify the Control Room Supervisor at the CREP of DG status.

STEP STANDARD:

Notifies CRS.

CUES:

Evaluator Note: Cue applicant that CRS understands that the diesel is started and at normal operating voltage and frequency and that the BOP should report to the CREP and the intermediate building operator will take over operation of the diesel.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPPF-013A

DESCRIPTION: 2013 NRC In-Plant i: START AND LOAD THE DIESEL GENERATOR DURING
CONTROL ROOM EVACUATION

IC SET: N/A

INSTRUCTIONS:

COMMENTS:

This JPM should only be run on a "A" train maintenance week and when the diesel rooms are not marked off as restricted areas due to EOOS. If it is a "B" train maintenance week use JPPF-013B.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: A control room evacuation has occurred. You as the BOP just completed AOP-600.1 Attachment 2, DUTIES OF THE BOP OPERATOR. During performance of the Attachment you determined that power was not available to 1DA.

INITIATING CUES: The CRS directs you to start the "A" Diesel Generator in accordance with AOP-600.1, Attachment 3, LOCAL STARTING AND LOADING DIESEL GENERATOR A(B)

***AT NO TIME ARE YOU TO OPERATE ANY
PLANT EQUIPMENT!***

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
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ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: JPP-107A

2013 NRC In-Plant j: LOCALLY CLOSE AND DE-
ENERGIZE MS LOOP "B" AND "C" TO TDEFP

APPROVAL:

APPROVAL DATE:

REV NO: 2

CANDIDATE: _____

EXAMINER: _____

TASK:

000-169-05-04 Locally Isolate a Faulted Steam Generator per EOP-3.0.

TASK STANDARD:

Turbine driven emergency feed pump main steam loop "B" and "C" supply valve is manually closed and power removed from 2802A per EOP-3.0.

TERMINATING CUE: MVG-2802A and MVG-2802B are closed and deenergized per EOP-3.0.

PREFERRED EVALUATION LOCATION***PREFERRED EVALUATION METHOD***

PLANT

SIMULATE

REFERENCES:

EOP-3.0

FAULTED STEAM GENERATOR ISOLATION

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
035000A406	A4.06	S/G isolation on steam leak or tube rupture/leak	4.5	4.6
061000K103	K1.03	Main steam system	3.5	3.9
000040A104	AA1.04	Isolation of all steam lines from header	4.3	4.3
000040A110	AA1.10	AFW System	4.1	4.1

TOOLS: EOP-3.0, STEP 5.h. ALTERNATIVE ACTION

EVALUATION TIME 20 ***TIME CRITICAL*** No ***10CFR55:*** 45.a.8

TIME START: TIME FINISH: PERFORMANCE TIME:

PERFORMANCE RATING:

SAT: UNSAT:

CANDIDATE:

EXAMINER:

SIGNATURE

DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS: Burn Hazard

INITIAL CONDITION: The plant was at 100% power when a steamline break occurred inside containment. "B" and "C" SGs are faulted as indicated by steam pressure dropping in an uncontrolled manner. The CRS has implemented EOP-3.0, FAULTED STEAM GENERATOR ISOLATION, out of EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION, following a Automatic SI. Both motor driven emergency feedwater pumps started. MVG-2802A, MS LOOP B TO TD EFP and MVG-2802B, MS LOOP C TO TD EFP will not close from the MCB.

INITIATING CUES: RO directs you as the IB operator (Unit 7) to open breaker 05EH on XMC1DA2X and locally close valves XVG02802A-MS and XVG02802B-MS in accordance with EOP-3.0, Step 5.h, Alternative Action. The AB operator (Unit 6 upper) has already opened breaker 05EH on XMC1DB2Y. The shift supervisor has approved the waiving of ISP-027 requirements due to the emergency condition.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

***AT NO TIME ARE YOU TO OPERATE
ANY PLANT EQUIPMENT!***

***FOR ELECTRICAL MANIPULATIONS, AT
NO TIME ARE YOU TO BREAK THE
PLANE OF THE ELECTRICAL PANEL!***

STEPS

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Locally deenergize and close the appropriate valve. If SG B is faulted:
Open XMC1DA2X 05EH, EF PUMP MAIN STEAM BLOCK VLV XVG-2802A-MS (IB-463).

STEP STANDARD:

Operator locates the power supply (1DA2X, 05EH) for XVG-02802A and opens the breaker by pulling the breaker control lever down.

CUES:

Evaluator Note: The only sequence that is important is to open each breaker before closing each valve. If the examinee repositions a valve prior to opening the breaker the JPM is considered unsat.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Locally deenergize and close the appropriate valve. If SG C is faulted:
Open XMC1DB2Y 05EH, EMERG FEEDWATER PUMP MAIN STEAM BLOCK XVG2802B-MS (AB-463).

STEP STANDARD:

Determines that the AB operator has already opened XMC1DB2Y 05EH, EMERG FEEDWATER PUMP MAIN STEAM BLOCK XVG2802B-MS (AB-463).

CUES:

Evaluator Note: The only sequence that is important is to open each breaker before closing each valve. If the examinee repositions a valve prior to opening the breaker the JPM is considered unsat.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Close XVG02802A-MS, MS HEADER B EF PUMP TURBINE SUPPLY VLV (IB-436 East Pen).

STEP STANDARD:

Operator locates and closes XVG02802A-MS by pulling the manual engagement clutch lever down and turning the valve handwheel in the clockwise direction until the valve position arrow of the handwheel points to the right and the handwheel will no longer rotate.

CUES:

Evaluator Note: The only sequence that is important is to open each breaker before closing each valve. If the examinee repositions a valve prior to opening the breaker the JPM is considered unsat.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Close XVG02802B-MS, MS HEADER C EF PUMP TURBINE SUPPLY VLV (IB-436 East Pen).

STEP STANDARD:

Operator locates and closes XVG02802B-MS by pulling the manual engagement clutch lever down and turning the valve handwheel in the clockwise direction until the valve position arrow of the handwheel points to the right and the handwheel will no longer rotate.

CUES:

Evaluator Note: The only sequence that is important is to open each breaker before closing each valve. If the examinee repositions a valve prior to opening the breaker the JPM is considered unsat.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPP-107A

DESCRIPTION: 2013 NRC In-Plant j: LOCALLY CLOSE AND DE-ENERGIZE MS LOOP "B"
AND "C" TO TDEFP

IC SET:

INSTRUCTIONS:

COMMENTS:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: The plant was at 100% power when a steamline break occurred inside containment. "B" and "C" SGs are faulted as indicated by steam pressure dropping in an uncontrolled manner. The CRS has implemented EOP-3.0, FAULTED STEAM GENERATOR ISOLATION, out of EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION, following a Automatic SI. Both motor driven emergency feedwater pumps started. MVG-2802A, MS LOOP B TO TD EFP and MVG-2802B, MS LOOP C TO TD EFP will not close from the MCB.

INITIATING CUES: RO directs you as the IB operator (Unit 7) to open breaker 05EH on XMC1DA2X and locally close valves XVG02802A-MS and XVG02802B-MS in accordance with EOP-3.0, Step 5.h, Alternative Action. The AB operator (Unit 6 upper) has already opened breaker 05EH on XMC1DB2Y. The shift supervisor has approved the waiving of ISP-027 requirements due to the emergency condition.

***AT NO TIME ARE YOU TO OPERATE ANY
PLANT EQUIPMENT!***

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: JPPF-066A

2013 NRC In-Plant k: LOCALLY ISOLATE RCP
SEALS DURING A TOTAL LOSS OF ESF POWER

APPROVAL:

APPROVAL DATE:

REV NO: 3

CANDIDATE: _____

EXAMINER: _____

TASK:

000-175-05-04 Locally Isolate RCP Seals per EOP-6.0.

TASK STANDARD:

Seal injection and return valves for RCP seals have been manually isolated per EOP-6.0 Att 9.

TERMINATING CUE: RCP seals isolated per Att 9 of EOP-6.0.

PREFERRED EVALUATION LOCATION***PREFERRED EVALUATION METHOD***

PLANT

SIMULATE

REFERENCES:

EOP-6.0

LOSS OF ALL ESF AC POWER

INDEX NO.***K/A NO.******RO******SRO***

000055K302

EK3.02

Actions contained in EOP for loss of
offsite and onsite power

4.3

4.6

TOOLS:

EOP-6.0, Attachment 9, LOCALLY OPERATED ISOLATION
VALVES
FLASHLIGHT

EVALUATION TIME

15

TIME CRITICAL

No

10CFR55: 45.a.6

TIME START: _____

TIME FINISH: _____

PERFORMANCE TIME: _____

PERFORMANCE RATING:

SAT: _____

UNSAT: _____

CANDIDATE:

EXAMINER:

SIGNATURE

DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

MVT-8100 is in the north end of the 412' West Penetration area, which is a Radiation Area. At the discretion of the examiner, have the examinee describe the general location of the valve. Operation of the valve is identical to MVT-8105 and MVG-9606. Ensure to view radiation surveys and to monitor EDs if entering Radiation area.

INITIAL CONDITION: A total loss of offsite power has occurred and both DG's have failed to start. Alternate Seal injection also failed to start on the loss of power. The CRS has implemented EOP-6.0, LOSS OF ALL ESF AC POWER, and is directing actions for locally isolating RCP seals.

INITIATING CUES: The RO calls and directs you to isolate RCP seals in accordance with Step 1 of Attachment 9 of EOP-6.0, LOCALLY OPERATED ISOLATION VALVES.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

***AT NO TIME ARE YOU TO OPERATE
ANY PLANT EQUIPMENT!***

***FOR ELECTRICAL MANIPULATIONS, AT
NO TIME ARE YOU TO BREAK THE
PLANE OF THE ELECTRICAL PANEL!***

STEPS

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Locally isolate RCP Seals by closing the following (EOP-6.0 Step 13):
XVT08100-CS, RC PUMP SEAL RETURN HDR ISOL VLV(ORC) (AB-412 West Pen)

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVT08100-CS and turns handwheel fully clockwise.

CUES:

Evaluator Note: MVT-8100 is in the north end of the 412' West Penetration area, which is a Radiation Area. At the discretion of the examiner, have the examinee describe the general location of the valve. Operation of the valve is identical to MVT-8105 and MVG-9606. Ensure to view radiation surveys and to monitor EDs if entering Radiation area.

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Locally isolate RCP Seals by closing the following (EOP-6.0 Step 13):
XVG09606-CC, RB CC RETURN HEADER VALVE (AB-436 West Pen)

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVG09606-CC and turns handwheel fully clockwise.

CUES:

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Locally isolate RCP Seals by closing the following (EOP-6.0 Step 13):
XVT08105-CS, SEAL INJECTION HEADER ISOLATION VALVE (AB-436)

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVT08105-CS and turns handwheel fully clockwise.

CUES:

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Contact the Control Room to determine if the Alternate Seal Injection System has actuated.

STEP STANDARD:

Determines from initial cue or from calling the control room that Alternate Seal Injection has not actuated and that the alternate action is necessary.

CUES:

Evaluator Cue: If called as the control room reply that Alternate Seal Injection has not been actuated.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

If the Alternate Seal Injection System has not actuated, close all the following:
XVT08102A-CS, RC PUMP A SEAL SUPPLY ISOL VALVE (ORC) (AB-412 West Pen).

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVT08102A-CS and turns handwheel fully clockwise.

CUES:

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

If the Alternate Seal Injection System has not actuated, close all the following:
XVT08102B-CS, RC PUMP B SEAL SUPPLY ISOL VALVE (ORC) (IB-412 East Pen).

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVT08102B-CS and turns handwheel fully clockwise.

CUES:

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

Evaluator Note: When validated this valve did not have a CHAMPS tag, but did have a small metal OEM tag.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

If the Alternate Seal Injection System has not actuated, close all the following:
XVT08102C-CS, RC PUMP C SEAL SUPPLY ISOL VALVE (ORC) (IB-412 East Pen).

STEP STANDARD:

Engages manual handwheel by pressing down on the declutch lever on XVT08102C-CS and turns handwheel fully clockwise.

CUES:

Evaluator Cue: Cue applicant that valve moves in the clockwise direction and then stops.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: JPPF-066A

DESCRIPTION: 2013 NRC In-Plant k: LOCALLY ISOLATE RCP SEALS DURING A TOTAL LOSS OF ESF POWER

IC SET:

INSTRUCTIONS:

COMMENTS:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: A total loss of offsite power has occurred and both DG's have failed to start. Alternate Seal injection also failed to start on the loss of power. The CRS has implemented EOP-6.0, LOSS OF ALL ESF AC POWER, and is directing actions for locally isolating RCP seals.

INITIATING CUES: The RO calls and directs you to isolate RCP seals in accordance with Step 1 of Attachment 9 of EOP-6.0, LOCALLY OPERATED ISOLATION VALVES.

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ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPSF-141A

2013 NRC Sim a RO&SRO-I&SRO-U: CONTINUOUS
ROD WITHDRAWAL

APPROVAL:

APPROVAL DATE:

REV NO: 3

CANDIDATE: _____

EXAMINER: _____

TASK:

000-006-05-01 RESPOND TO CONTINUOUS ROD MOTION

TASK STANDARD:

The reactor is tripped per AOP-403.3, CONTINUOUS CONTROL ROD MOTION, to terminate the transient prior to exceeding Reactor trip setpoints. Immediate actions of EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION, are completed.

TERMINATING CUE: Immediate actions of EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION are complete.

PREFERRED EVALUATION LOCATION

SIMULATOR

PREFERRED EVALUATION METHOD

PERFORM

REFERENCES:

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
0000012413	2.4.13	Knowledge of crew roles and responsibilities during EOP usage.	4.0	4.6

TOOLS:

GOP-3, REACTOR STARTUP FROM HOT STANDBY TO STARTUP (MODE 3 TO MODE 2)
AOP-403.3, CONTINUOUS CONTROL ROD MOTION
EOP-1.0, REACTOR TRIP/SAFETY INJECTION ACTUATION
REP-109.002, Enclosure 9.2, Recommended Rod Positions for ICRR.

EVALUATION TIME 10 ***TIME CRITICAL*** No ***10CFR55:*** 45.a.3

TIME START: TIME FINISH: PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: UNSAT: _____

CANDIDATE: _____

EXAMINER: _____ _____
SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: GOP-3, REACTOR STARTUP FROM HOT STANDBY TO STARTUP (MODE 3 TO MODE 2), is in progress after a short mini-outage. The shutdown banks have been fully withdrawn. Step 3.11 of GOP-3 is complete. Estimated critical position is 100 steps on bank "D".

INITIATING CUES: Increase reactor power to 10-3% per GOP-3 starting at Step 3.12. The Examiner will play the role of CRS and Reactor Engineering for this JPM. Reactor engineering has started REP-109.002, INVERSE COUNT RATE RATIO PLOT, and has taken all necessary data and is ready to collect data at 53 steps on Control Bank A.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Review GOP Appendix A, Generic Operating Precautions, for Reactor Startup.

STEP STANDARD:

Reviews GOP Appendix A, Generic Operating Precautions, for Reactor Startup.

CUES:

Evaluator Note: This JPM can be briefed outside of the simulator and this step can occur outside of the simulator.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Procedure Caution: To prevent any inadvertent inward rod motion the ROD CNTRL BANK SEL Switch should not be placed in or pass through AUTO.

Place the ROD CNTRL BANK SEL Switch in MAN.

STEP STANDARD:

ROD CNTRL BANK SEL Switch taken counter clockwise to MAN.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Procedure Note: A stable Startup Rate of one decade per minute should NOT be exceeded.

Using ROD CONTROL ROD MOTION lever, commence Control Bank Rod withdrawal to ten steps on Bank A.

STEP STANDARD:

Steps indicate ten steps on Bank A.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Procedure Caution: 12 steps should NOT be exceeded until all Rod Bottom lights are off. If all Control Bank A Rod Bottom lights are NOT off at ten steps, AOP-403.5, Stuck Or Misaligned Control Rod, should be entered.

At ten steps on Control Bank A, stop and verify:

- 1) Bank A RB lights clear.
- 2) ONE ROD ON BOTTOM (XCP-621 3-1) annunciator clears.
- 3) RODS ON BOTTOM (XCP-621 3-2) annunciator clears.

STEP STANDARD:

- 1) Bank A RB lights clear.
- 2) ONE ROD ON BOTTOM (XCP-621 3-1) annunciator clears.
- 3) RODS ON BOTTOM (XCP-621 3-2) annunciator clears.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Recommence withdrawing rods while observing that the groups sequence properly.

STEP STANDARD:

Continues to pull rods.

CUES:

Evaluator Cue: The examinee should stop pulling rods at 53 steps to collect data for inverse count rate ratio plot. Once the examinee determines that count rates are stable then cue the examinee that the estimated critical condition (ECC) is at 230 steps on Bank "D".

Evaluator Note: When rods are >53 steps on Bank A then the continuous rod motion will occur.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Enters AOP-403.3, CONTINUOUS CONTROL ROD MOTION.

STEP STANDARD:

Enters AOP-403.3, CONTINUOUS CONTROL ROD MOTION.

CUES:

Evaluator Note: The applicant is not expected to pull out the procedure, but may perform the actions of this procedure from memory and trip the unit.

COMMENTS:

CRITICAL: No **SEQUENCED:** Yes

SAT ☐

UNSAT ☐

STEP: 7

Verify rod motion is NOT required:
Tavg is within 1.5 °F of Tref.
AND
No load rejection has occurred (C7A OR C7B).

STEP STANDARD:

Notes that rod motion is not required.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

CRITICAL: No **SEQUENCED:** Yes

SAT ☐

UNSAT ☐

STEP: 8

Verify rod motion is stopped.

STEP STANDARD:

Notes that rod motion has not stopped.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 9

Perform the following:

- a) Trip the Reactor.
- b) GO TO EOP-1.0. REACTOR TRIP/SAFETY INJECTION ACTUATION.

STEP STANDARD:

Turns reactor trip switch to trip.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 10

Procedure Note: Steps 1 through 5 are Immediate Operator Actions.
The EOP REFERENCE PAGE should be monitored throughout the use of this procedure.
Conditions for implementing Emergency Plan Procedures should be evaluated using EPP-001,
ACTIVATION AND IMPLEMENTATION OF EMERGENCY PLAN.

Verify Reactor Trip:

Trip the Reactor using either Reactor Trip Switch.

Verify all Reactor Trip and Bypass Breakers are open.

Verify all Rod Bottom Lights are lit.

Verify Reactor Power level is decreasing.

STEP STANDARD:

Reactor Trip and Bypass Breakers indicate green light lit red light off.

Rod Bottom Lights are lit.

Reactor Power level is decreasing.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 11

Verify Turbine/Generator Trip:

- a. Verify all Turbine STM STOP VLVs are closed.
- b. Ensure Generator Trip (after 30 second delay):
 - 1) Ensure the GEN BKR is open.
 - 2) Ensure the GEN FIELD BKR is open.
 - 3) Ensure the EXC FIELD CNTRL is tripped.

STEP STANDARD:

GEN BKR, GEN FIELD BKR, and EXC FIELD CNTRL indicate green light lit and red light off.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 12

Verify both ESF buses are energized.

STEP STANDARD:

Potential lights on 1DA and 1DB are lit for all three phases.

CUES:

Evaluator Note: This is an immediate operator action.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPSF-141A

DESCRIPTION: 2013 NRC Sim a RO&SRO-I&SRO-U: CONTINUOUS ROD WITHDRAWAL

IC SET: 330/15

INSTRUCTIONS:

IC 15

MAL-PCS009AB REACTOR TRIP BREAKER A FAILURE (FAIL TO OPEN) Delay=0, Ramp=0, Final=AUTO_(UV)

MAL-PCS009BB REACTOR TRIP BREAKER B FAILURE (FAIL TO OPEN) Delay=0, Ramp=0, Final=AUTO_(UV)

Event #1

Mcrfpa(5) >53

Trigger #1

MAL-CRF006B UNCONTROLLED MANUAL ROD MOTION Delay=0, Ramp=0, Final=Active

COMMENTS:

JPM is terminated after the reactor is tripped and immediate operator actions of EOP-1.0 are completed.

Ensure Audio Count Rate (step 3.4.e), HIGH FLUX AT SHUTDOWN is blocked (step 3.11.b), IPCS indicates MODE 2 (step 3.11.f), NR-45 is in HI speed (Audio count rate and NR-45 should be the two that are not saved with the snap). Reactivity is returned to service (see REP-109.002).

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: GOP-3, REACTOR STARTUP FROM HOT STANDBY TO STARTUP (MODE 3 TO MODE 2), is in progress after a short mini-outage. The shutdown banks have been fully withdrawn. Step 3.11 of GOP-3 is complete. Estimated critical position is 100 steps on bank "D".

INITIATING CUES: Increase reactor power to 10-3% per GOP-3 starting at Step 3.12. The Examiner will play the role of CRS and Reactor Engineering for this JPM. Reactor engineering has started REP-109.002, INVERSE COUNT RATE RATIO PLOT, and has taken all necessary data and is ready to collect data at 53 steps on Control Bank A.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: **NJPSF-159**

2013 NRC Sim b RO&SRO-I&SRO-U: SWAP
RUNNING RBCU'S

APPROVAL:

APPROVAL DATE:

REV NO: 4

CANDIDATE: _____

EXAMINER: _____

TASK:

022-003-01-01 START THE REACTOR BUILDING VENTILATION SYSTEM PER SOP 114.

TASK STANDARD:

XFN-64A, XFN-064B, and XFN-65A are running in fast/norm speed and RBCU TRAIN B EMERGENCY is selected to XFN-064B.

TERMINATING CUE: SOP-114 IV. D. SHIFTING REACTOR BUILDING COOLING UNITS FAN SPEED complete.

PREFERRED EVALUATION LOCATION***PREFERRED EVALUATION METHOD***

SIMULATOR

PERFORM

REFERENCES: SOP-114 REACTOR BUILDING VENTILATION SYSTEM

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
022000A401	A4.01	CCS fans	3.6	3.6

TOOLS: SOP-114 IV. D. SHIFTING REACTOR BUILDING COOLING UNITS FAN SPEED

EVALUATION TIME 5 ***TIME CRITICAL*** NO ***10CFR55:*** 45.a.4

TIME START: _____ TIME FINISH: _____ PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

CANDIDATE: _____

EXAMINER: _____

SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS: None.

INITIAL CONDITION: Mode 3.
The current lineup of the RBCU's is as follows: XFN-64A and XFN-64B are running in slow speed.

It is desired to run XFN-64A, XFN-64B, and XFN-65B in NORM speed in order to prepare for reactor startup.

INITIATING CUES: The CRS directs you as the RO to start XFN-64A, XFN-64B, and XFN-65B in NORM speed in accordance with SOP-114 Section IV. D. SHIFTING REACTOR BUILDING COOLING UNITS FAN SPEED, in order to align the plant for a normal preferred at power lineup.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Shift RBCU's as follows:

a. Shutdown RBCUs by placing appropriate switch(es) in STOP:

- 1) XFN 0064A-AH, 1A NORM.
- 2) XFN 0064A-AH, 1A SLOW.
- 3) XFN 0064B-AH, 1B NORM.
- 4) XFN 0064B-AH, 1B SLOW.
- 5) XFN 0065A-AH, 2A NORM.
- 6) XFN 0065A-AH, 2A SLOW.
- 7) XFN 0065B-AH, 2B NORM.
- 8) XFN 0065B-AH, 2B SLOW.

STEP STANDARD:

Takes XFN 0064A-AH, 1A SLOW and XFN 0064B-AH, 1B SLOW to stop. Verifies red light off and green light on.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Ensure the RBCU dampers are in BYP:

- 1) XDP-110A, RBCU 64A HEPA FLTR BYP DMPR.
- 2) XDP-111A, RBCU 65A HEPA FLTR BYP DMPR.
- 3) XDP-110B, RBCU 64B HEPA FLTR BYP DMPR
- 4) XDP-111B, RBCU 65B HEPA FLTR BYP DMPR.

STEP STANDARD:

Takes XDP-110A, RBCU 64A HEPA FLTR BYP DMPR and XDP-110B, RBCU 64B HEPA FLTR BYP DMPR to BYP. Verifies red light lit and green light off.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Procedure Note:

- a. Due to eddy current brakes, RBCU control switches must be held in START position until the red beaker closed light is lit and starting current is indicated on appropriate meter.
- B. Normal and preferred lineup is three RBCUs running in NORM (fast speed).
- C. To increase stay times for teams entering containment, four RBCUs may be placed in service in NORM (fast speed).

Place RBCUs in service by starting three or four RBCUs in SLOW or NORM as follows:

For XFN0064A-AH, REACTOR BLDG COOLING UNIT 1A EMERG FAN, start one of the following:

a) XFN 0064A-AH, 1A NORM.

For XFN0064B-AH, REACTOR BLDG COOLING UNIT 1B EMERG FAN, start one of the following:

a) XFN 0064B-AH, 1B NORM.

For XFN0065B-AH, REACTOR BLDG COOLING UNIT 2B EMERG FAN, start one of the following:

a) XFN 0065B-AH, 2B NORM.

STEP STANDARD:

Takes and holds XFN 0064A-AH, 1A NORM, 0064B-AH, 1B NORM, and 0065B, 2B NORM to START until red breaker closed light is lit and starting current is indicated.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Procedure Note: Contact PSE to evaluate, if RBCU fan motor amps exceed the values given.

Verify RBCU Fan motor amps return to normal operating range: 1) For fast speed operation, 275 amps to 300 amps. Remove RBCU fan from service due to above normal amps.

STEP STANDARD:

Determines normal amps for XFN0064A and XFN0064B

CUES:

COMMENTS:

CRITICAL: No **SEQUENCED:** Yes

SAT ☐ **UNSAT** ☐

STEP: 5

Determines that XFN0065B has tripped.

Enters XCP-607, 1-1, RBCU 1B/2B FAN TRIP

CORRECTIVE ACTIONS:

1. Determine which fan tripped and place the control switch in Normal After Stop.
2. Start the non-running Reactor Building Cooling Unit fan after ensuring cooling water is lined up.
3. Dispatch an operator to XPN7077 (CB-436, TSC Equipment Room) to select the RACK RESET and reset the alarm.

SUPPLEMENTAL ACTIONS:

1. Determine the cause of the fan trip, correct and return to service as soon as possible.
2. Continued normal operation is allowed when one fan per group in slow speed is operable per Technical Specification 3.6.2.3.
3. Notify PSE (Predictive Maintenance) for further assistance.

STEP STANDARD:

Takes XFN 0065B-AH, 2B NORM to stop.

CUES:

Evaluator Note: This is where the JPM becomes alternate path.

Booth Operator Cue: If called to go to XPN7077 (CB-436, TSC Equipment Room) and to select the RACK RESET and reset the alarm, report that it is complete after 5 minutes.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

From ARP:

2. Start the non-running Reactor Building Cooling Unit fan after ensuring cooling water is lined up.

From SOP:

Place RBCUs in service by starting three or four RBCUs in SLOW or NORM as follows:

For XFN0065A-AH, REACTOR BLDG COOLING UNIT 2A EMERG FAN, start one of the following:

a) XFN 0065A-AH, 2A NORM.

STEP STANDARD:

Takes and holds XFN 0065A, 2A NORM to START until red breaker closed light is lit and starting current is indicated.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Verify RBCU Fan motor amps return to normal operating range: 1) For fast speed operation, 275 amps to 300 amps

STEP STANDARD:

Verifies RBCU motor amps return to normal operating range.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

Procedure Note: The RBCU TRAIN A (B) EMERG switch must be selected to an operable RBCU.

Verify the following switches are in the desired position:

- 1) XFN-64A/XFN 65A - RBCU TRAIN A EMERG.
- 2) XFN-64B/XFN 65B - RBCU TRAIN B EMERG.

STEP STANDARD:

Takes XFN-64B/XFN 65B - RBCU TRAIN B EMERG to XFN-64B position.

CUES:

Evaluator Cue: If applicant reports that an inoperable RBCU is selected for start, ask for a recommendation and approve it.

Evaluator Note: The section of XFN-64B causes XCP-6103 5-6, RB RECRIC UNIT C 3108C/ 3109C MISALIGN and XCP-6103 5-7, RB RECRIC UNIT D 3108D/ 3109D to change condition (dim/bright).

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPSF-159

DESCRIPTION: 2013 NRC Sim b RO&SRO-I&SRO-U: SWAP RUNNING RBCU'S

IC SET: 331/4

INSTRUCTIONS:

IC 4.

Pre-Event Load

Select RBCU TRAIN A EMERG to XFN-65A and select RBCU TRAIN B EMERG to XFN-65B.

Stop all RBCUs

Start XFN-64A and XFN-64B in slow.

Take XDP-110A, RBCU 64A HEPA FLTR BYP DMPR and XDP-110B, RBCU 64B HEPA FLTR BYP DMPR to FILTER.

PMP-AH049B XFN0065BH RB CLG RAN HIGH BRG FAILURE Final=1.2

Event 1:

X02O104R==1 (red light lit for XFN-65B

Trigger 1:

PMP-AH049T Delay=2 seconds Trip of XFN-65B.

Saved to IC 331.

COMMENTS:

Need to provide copies of procedure since is not laminated in the simulator.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: Mode 3.

The current lineup of the RBCU's is as follows: XFN-64A and XFN-64B are running in slow speed.

It is desired to run XFN-64A, XFN-64B, and XFN-65B in NORM speed in order to prepare for reactor startup.

INITIATING CUES: The CRS directs you as the RO to start XFN-64A, XFN-64B, and XFN-65B in NORM speed in accordance with SOP-114 Section IV. D. SHIFTING REACTOR BUILDING COOLING UNITS FAN SPEED, in order to align the plant for a normal preferred at power lineup.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPS-034A

2013 NRC Sim JPM c RO&SRO-I: INCREASE
LETDOWN FLOW TO A MAXIMUM TO IMPROVE
CHEMISTRY

APPROVAL:

APPROVAL DATE:

REV NO: 4

CANDIDATE: _____

EXAMINER: _____

TASK:

044-031-01-01 Adjust Letdown Flowrate per SOP-102.

TASK STANDARD:

Letdown flow is increased to about 120 gpm without ever exceeding 120 gpm.
Letdown pressure controlled such that the letdown relief valve does not open.

TERMINATING CUE: Letdown flow at 120 gpm with PCV-145 returned to AUTO.

PREFERRED EVALUATION LOCATION***PREFERRED EVALUATION METHOD***

SIMULATOR

PERFORM

REFERENCES:

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
004000A419	A4.19	CVCS letdown orifice isolation valve and valve control switches	3.1	2.8

TOOLS: SOP-102 Section IV. R. SHIFTING LETDOWN ORIFICES WITH
NORMAL LETDOWN IN SERVICE

EVALUATION TIME 5 ***TIME CRITICAL*** No ***10CFR55:*** 45.a.6

TIME START: _____ TIME FINISH: _____ PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

CANDIDATE: _____

EXAMINER: _____

SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS: None.

INITIAL CONDITION: 100% power. Chemistry has called and wants to maximize letdown to improve primary chemistry.

INITIATING CUES: The CRS directs you as the RO to increase letdown flow to the maximum in accordance with SOP-102, Section IV.R. SHIFTING LETDOWN ORIFICES WITH NORMAL LETDOWN IN SERVICE.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Verify Initial Conditions:

1.1 Letdown is in service (Letdown flow rate of 60 gpm to 120 gpm).

1.2 Pressurizer level is greater than 18%.

Procedure Note: More than two Letdown Orifices may be placed in service when RCS pressure is less than or equal to 1000 psig as long as a Letdown flow rate of 120 gpm is not exceeded.

STEP STANDARD:

Verifies current letdown flow at 95 gpm.

Verifies current pressurizer level is 60%.

CUES:

Evaluator Cue: The applicant may request further direction about what it means to raise letdown to a maximum (which valves are desired to be open). Ask for a recommendation and approve the recommendation given. The desired line up will be PVT-8149B and PVT-8149C open and PVT8149A closed.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Place PCV-145, LO PRESS LTDN, in MAN and open to 70%.

STEP STANDARD:

PCV-145, LO PRESS LTDN, indicates MAN and open to 70%.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

If necessary, close the desired Orifice Isolation Valve:

- a. PVT-8149A, LTDN ORIFICE A ISOL (45 gpm).
- B. PVT-8149B, LTDN ORIFICE B ISOL (60 gpm).
- C. PVT-8149C, LTDN ORIFICE C ISOL (60 gpm).

STEP STANDARD:

Takes PVT-8149A, LTDN ORIFICE A ISOL (45 gpm) to CLOSE. Verifies green light lit and red light dim.

CUES:

Evaluator Note: PVT-8149A, LTDN ORIFICE A ISOL (45 gpm) must be closed before PVT-8149C, LTDN ORIFICE C ISOL (60 gpm) is opened to preclude damage to the demins. If flow is allowed to exceed 120 gpm it constitutes a failure.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Open the desired Orifice Isolation Valve:

- a. PVT-8149A, LTDN ORIFICE A ISOL (45 gpm).
- b. PVT-8149B, LTDN ORIFICE B ISOL (60 gpm).
- c. PVT-8149C, LTDN ORIFICE C ISOL (60 gpm).

STEP STANDARD:

Takes PVT-8149C, LTDN ORIFICE C ISOL (60 gpm), to OPEN. Verifies red light and green light dim.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Adjust PCV-145, LO PRESS LTDN, to maintain PI-145, LO PRESS LTDN PRESS PSIG, between 300 psig and 400 psig.

STEP STANDARD:

PCV-145, LO PRESS LTDN, adjusted to maintain 300-400 psig as indicated on PI-145.

CUES:

Evaluator Note: This step is critical in that the applicant must do it so that pressure does not exceed the letdown relief setpoint. This will be evidenced by annunciator XCP-613 2-2, LP LTDN RLF TEMP HI.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Ensure PCV-145 Setpoint Pot is set between 5.0 and 6.7.

STEP STANDARD:

PCV-145 Setpoint Pot is between 5.0 and 6.7.

CUES:

COMMENTS:

CRITICAL: No **SEQUENCED:** Yes

SAT ☐ **UNSAT** ☐

STEP: 7

Place PCV-145, LO PRESS LTDN, in AUTO.

STEP STANDARD:

PCV-145, LO PRESS LTDN, indicates AUTO.

CUES:

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPS-034A

DESCRIPTION: 2013 NRC Sim JPM c RO&SRO-I: INCREASE LETDOWN FLOW TO A
MAXIMUM TO IMPROVE CHEMISTRY

IC SET: 10

INSTRUCTIONS:

No special instructions, Just reset to IC-10.

COMMENTS:

Need to provide copies of procedure since it is not laminated in the simulator. Allow students to mark up procedure in books and then replace after JPM.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: 100% power. Chemistry has called and wants to maximize letdown to improve primary chemistry.

INITIATING CUES: The CRS directs you as the RO to increase letdown flow to the maximum in accordance with SOP-102, Section IV.R. SHIFTING LETDOWN ORIFICES WITH NORMAL LETDOWN IN SERVICE.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPSF-059B

2013 NRC Sim JPM d RO&SRO-I: ALTERNATE
ISOLATION OF RUPTURED SG ("C" MSIV FAILS
TO CLOSE)

APPROVAL:

APPROVAL DATE:

REV NO: 15

CANDIDATE: _____

EXAMINER: _____

TASK:

000-504-05-01 Perform Ruptured Steam Generator Isolation.

TASK STANDARD:

The "C" SG is completely isolated from the "A" and "B" SG's per EOP-4.0, steps 3.a - 3h, and step 3.i alternate actions.

TERMINATING CUE: EOP-4.0, step 3.i complete.

PREFERRED EVALUATION LOCATION***PREFERRED EVALUATION METHOD***

SIMULATOR

PERFORM

REFERENCES: EOP-4.0 STEAM GENERATOR TUBE RUPTURE

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
000038A132	EA1.32	Isolation of a ruptured S/G	4.6	4.7

TOOLS: EOP-4.0, STEAM GENERATOR TUBE RUPTURE

EVALUATION TIME 15 ***TIME CRITICAL*** NO ***10CFR55:*** 45.a.6

TIME START: TIME FINISH: PERFORMANCE TIME:

PERFORMANCE RATING: SAT: UNSAT:

CANDIDATE:

EXAMINER: /
SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE

SAFETY CONSIDERATIONS:

INITIAL CONDITION: The "C" Steam Generator has experienced a tube rupture. The crew has taken actions through step 2 of EOP-4.0, STEAM GENERATOR TUBE RUPTURE. The RO has been assigned to monitor RCP trip criteria of step 1.

INITIATING CUES: The CRS has directed you as the BOP to isolate the "C" SG in accordance with EOP-4.0, STEAM GENERATOR TUBE RUPTURE, step 3.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Procedure Caution: At least one SG must be maintained available for RCS cooldown.

Place the Steamline PWR RELIEF A(B)(C) SETPT Controller(s) in MAN and closed.

STEP STANDARD:

"C" Steamline PWR RELIEF SETPT controller MAN pushbutton is depressed and decrease pushbutton is depressed so that both MAN and decrease pushbuttons are illuminated. Controller output will also read 0.

CUES:

Evaluator Note: There is not a demand for the PORV to be open and so taking the controller to MAN and closed is not critical.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Adjust the PWR RELIEF A(B)(C) SETPT Controller(s) to 8.85 (1150 psig).

STEP STANDARD:

"C" Steamline PWR RELIEF SETPT controller turned so that it indicates 8.85 (1150 psig).

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Place the Steamline Power Relief A(B)(C) Mode Switch(s) in PWR RLF.

STEP STANDARD:

"C" Steamline Power Relief mode switch taken to PWR RLF.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Place the PWR RELIEF A(B)(C) SETPT Controller(s) in AUTO.

STEP STANDARD:

"C" Steamline PWR RELIEF SETPT controller AUTO pushbutton is pressed. AUTO pushbutton illuminates.

CUES:

Evaluator Note: It is only critical that the controller be left in AUTO at the end of the JPM. If the controller was never taken to Manual and Closed then this step is not critical.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

WHEN RCS Tav_g is LESS THAN P-12 (552°F), THEN place both STM DUMP INTERLOCK Switches to BYP INTLK.

STEP STANDARD:

Both STM DUMP INTERLOCK switches indicate BYP INTLK (red flag) when RCS Tav_g <552°F.

CUES:

Evaluator Note: If RCS Tav_g is >552°F then this step is not performed at this time.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Verify the Steamline PORV closed.

STEP STANDARD:

PCV-2020 indicates red light off, green light on. Demand on controller is zero.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Procedure Caution: If the TD EFW Pump is the only available source of feed flow, the steam supply to the TD EFW Pump must be maintained from at least one SG, to maintain a secondary heat sink.

Procedure Note: If the TD EFW Pump is tripped, it should be reset as time permits.

IF SG B OR SG C is RUPTURED, THEN perform the following:

1) IF at least one MD EFW Pump is running, THEN isolate the TD EFW Pump by placing PVG-2030, STM SPLY TO TD EFP TRN A(B), to CLOSE.

STEP STANDARD:

Both switches for PVG-2030 are taken to close. PVG-2030 STM SPLY TO TD EFP TRN A (B) indicates red light off and green light on.

CUES:

Evaluator Note: Both PVG-2030 switches must be taken to close before the valve closes.

Booth Operator Cue: When called to reset the TD EFW Pump use the LOA resets page or trigger #1 to reset TD EFW Pump after it comes to a stop.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

Notify local Operators to perform Alternate Action Step 3.g, while continuing with this procedure.

STEP STANDARD:

Calls local operator to perform Alternate Action Step 3.g

CUES:

Booth Operator Cue: When called to perform Alternate Action Step 3.g use trigger #2 and #3 to do so.

Booth Operator Note: If called for repeat back of Alternate Action Step 3.g it is as follows for SG C:

1) Open XMC1DB2Y 05EH, EMERG FEEDWATER PUMP MAIN STEAM BLOCK XVG2802B-MS (AB-463). Trigger #2 Unit 6U

2) Close XVG02802B-MS, MS HEADER C EF PUMP TURBINE SUPPLY VLV (IB-436 East Pen). Trigger #3 Unit 7.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 9

Close the following for each RUPTURED SG:

SG Blowdown, PVG-503A(B)(C).

STEP STANDARD:

PVG-503C indicates red light off, green light on.

CUES:

Evaluator Note: PVG-503C is already closed on EFW pump start and so there is no action here.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 10

Close the following for each RUPTURED SG:

MS Drain Isolation,
PVT-2843A(B)(C).

STEP STANDARD:

Takes PVT-2843C to close. PVT-2843C indicates red light OFF, green light ON.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 11

Close the following for each RUPTURED SG:

MS Drain Isolation,
PVT-2877A for SG A
PVT-2877B for SG C.

STEP STANDARD:

Takes PVT-2877B to close. PVT-2877B indicates red light OFF, green light ON.

CUES:

COMMENTS:

CRITICAL: No **SEQUENCED:** Yes

SAT ☐

UNSAT ☐

STEP: 12

Close the following for each RUPTURED SG:

- MS Isolation Valve, PVM-2801A(B)(C).
- MS Isolation Bypass Valve, PVM-2869A(B)(C).

STEP STANDARD:

Takes PVM-2801C to close.

Notes MS Isolation Valve, PVM-2801C still indicates red light on, green light off (MSIV failed to close).

MS Isolation Bypass Valve, PVM-2869C indicates red light off, green light on.

CUES:

Evaluator Note: Operator may send someone out to locally close the "C" MSIV while proceeding.

Evaluator Note: This is when the JPM becomes alternate path.

Booth Operator Cue: If called to locally close the "C" MSIV wait 5 minutes and report that you have bleed air off the "C" MSIV but it did not go closed.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 13

1) Close the following:

All remaining MS Isolation and MS Isolation Bypass Valves.

STEP STANDARD:

Takes individual MSIV switches PVM-2801A&B, A(B) ISOL VLV or common switch PVM-2801A,B,C, MS LINES ISOL VLVS to close. MS PVM-2801A&B, MS ISOLATION VALVE, PVM-2869A&B, MS ISOLATION BYPASS VALVE, indicate red light off and green light on.

CUES:

Evaluator Note: This step can be accomplished in two ways. The individual MSIVs can be closed or the common switch can be used. The bypass valves are already closed and so its not critical to close them.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 14

1) Close the following:

PCV-2058, MS TO AUX STM

STEP STANDARD:

PCV-2058, MS TO AUX STM, indicates red light off and green light on.

CUES:

Evaluator Note: PCV-2058, MS TO AUX STM is already closed and so this requires no action.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 15

1) Close the following:

MVG-1701, STEAM SEAL FEED VLV

STEP STANDARD:

MVG-1701 is taken to close. MVG-1701, STEAM SEAL FEED VLV, indicates red light off and green light on.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 16

1) Close the following:

MVG-2896A, SV-1 BSD.
MVG-2896B, SV-2 BSD.
MVG-2896C, SV-3 BSD.
MVG-2896D, SV-4 BSD.

STEP STANDARD:

Takes MVG-2896A-D, SV-1 (2,3,4) BSD to close. MVG-2896A-D, SV-1 (2,3,4) BSD, indicates red light off and green light on.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 17

1) Close the following:

IPV-2231, MS/PEGGING STM TO DEAERATOR.

STEP STANDARD:

Places IPV-2231, MS/PEGGING STM TO DEAERATOR, controller in MAN and output of 0%.

CUES:

Evaluator Note: IPV-2231 is already closed and so this step is not critical.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 18

2) At the Digital Control Station for the MSRs, ensure the following are closed:

MVG-2811.
XVG-2807.

STEP STANDARD:

At MSR DCS terminal, MVG-2811 and XVG-2807 indicate closed.

CUES:

Evaluator Note: These valves are in there required positions and so action is taken.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 19

3) Place the STM DUMP CNTRL Controller in MAN and closed.

STEP STANDARD:

Pushes STM DUMP CNTRL controller MAN pushbutton. Pushes decrease pushbutton as necessary to set controller to 0. MAN and decrease pushbuttons illuminated with 0% output on controller.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 20

4) Place the STM DUMP MODE SELECT Switch in STM PRESS.

STEP STANDARD:

STM DUMP MODE SELECT Switch in STM PRESS.

CUES:

Evaluator Note: This step is not critical if the steam dumps are already taken to manual and closed.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 21

5) Place the following in AUTO and ensure the valves are closed (REFER TO ATTACHMENT 1, ALTERNATE ISOLATION OF RUPTURED STEAM GENERATORS, if necessary to locally isolate valves):

PVT-2870, TO MSR A & B DRN.

PVT-2875, TO MSR A & B DRN.

PVT-2851A,B,C,D, MS LINES TO TURB DRN.

PVT-2713A,B,C,D, STM DUMP DRN BYP.

PVT-2838A,B, HDR DRNS.

6) Direct the Turbine Building Operator to complete ATTACHMENT 1, ALTERNATE ISOLATION OF RUPTURED STEAM GENERATORS.

STEP STANDARD:

Notes PVT-2870, To MSR A&B DRN indicates mid-position with red and green light on. Directs Turbine Building Operator to complete ATTACHMENT 1, ALTERNATE ISOLATION OF RUPTURED STEAM GENERATORS. Including alternate isolation for PVT-2870 by closing XVT02871A-MS, MSR A&B MS SUP HDR DRAIN POT OUTLET VLV at TB-412-G-02.

The following valve switches are in AUTO with red light OFF and green light ON:

- PVT-2875, TO MSR A&B DRN
- PVT-2851A-D, MS LINES TO TURB DRN
- PVT-2713A-D, STEAM DUMP DRN BYP
- PVT-2838A,B, HDR DRNS.

CUES:

Evaluator Note: Step one of Attachment 1 is always done and step two contains backup valves for any valves that fail to close. The TB operator will be called to close XVT02871A-MS, MSR A&B MS SUP HDR DRAIN POT OUTLET VLV at TB-412-G-02 as well as to perform step one of Attachment 1.

Evaluator Note: Due to the complexity of this task the applicant may call an auxiliary operator to the control room to effectively communicate the desired local actions.

Evaluator Note: The JPM can be stopped once the order to complete Attachment 1 is given. There are no observable actions here other than ordering the local operator to complete the necessary tasks.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPSF-059B

DESCRIPTION: 2013 NRC Sim JPM d RO&SRO-I: ALTERNATE ISOLATION OF RUPTURED SG ("C" MSIV FAILS TO CLOSE)

IC SET: 333/ 10

INSTRUCTIONS:

Start at IC 10: Saved to IC 333 for 2013 NRC exam.

MAL-RCS002C STEAM GENERATOR C TUBE LEAK Final=400 RAMP=00:00:30 (SGTR ON 'C' S/G)

MAL-MSS006C MAIN STEAM ISOLATION VALVE (S/G C) FAILURE Final= FAIL TO CLOSE (C MSIV FAIL TO CLOSE)

VLV-MS041P XVT02870-MS MS LINE TO MOSS SEP DEP DRN FAIL POSITION Final = 80 (2870 Failed 80% open)

Manual SI and perform actions of EOP-1.0 & EOP-4.0 up through step 2.

Throttle EFW flow to 'C' S/G when > 40% level.

Silence HVAC alarms.

This is where IC is saved.

RUN 5 seconds delay and acknowledge annunciators

When student is ready: RUN

Local Operator Actions when instructed:

Trigger #1: EOP-4.0, STEAM GENERATOR TUBE RUPTURE, 3.g

LOA-MSS026 EMERGENCY FW TDFP MN STM THROTTLE VLV 2865 RESET Final=RESET (Reset TDEFW pump once RPM's reach 0.0.

Trigger #2: EOP-4.0, STEAM GENERATOR TUBE RUPTURE, Alternate action 3.g

LOA-MSS033 TDEFP STM SUP VLV 2802B BRK Final=OPEN (Open XMC1DB2Y 05EH, EF PUMP MAIN STEAM BLOCK XVG2802B-MS (AB-463)

Trigger #3: EOP-4.0, STEAM GENERATOR TUBE RUPTURE, Alternate action 3.g

VLV-MS009P XVG02802B-MS MS LP C TO TD EF PMP FAIL POSITION Final=0, Ramp=00:00:30 (CLOSE XVG02802B-MS, MS HEADER C EF PUMP TURBINE SUPPLY VLV (IB-436 East Pen).

EOP-4.0, STEAM GENERATOR TUBE RUPTURE, Alternate Action 3.i.5) refer to Attachment 1, ALTERNATE ISOLATION OF RUPTURED STEAM GENERATORS PVT-2870, TO MSR A & B DRN. Currently there is no modeling of XVT02871A-MS MSR A&B MS SUP HDR DRAIN POT OUTLET VLV (TB-412) but report that it is closed .

COMMENTS:

Circle and slash up to step 3.0 of EOP-4.0, STEAM GENERATOR TUBE RUPTURE.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: The "C" Steam Generator has experienced a tube rupture. The crew has taken actions through step 2 of EOP-4.0, STEAM GENERATOR TUBE RUPTURE. The RO has been assigned to monitor RCP trip criteria of step 1.

INITIATING CUES: The CRS has directed you as the BOP to isolate the "C" SG in accordance with EOP-4.0, STEAM GENERATOR TUBE RUPTURE, step 3.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPS-151

2013 NRC Sim JPM e RO&SRO-I: SHIFT RHR
LOOPS WITH RHR IN SERVICE

APPROVAL:

APPROVAL DATE:

REV NO: 4

CANDIDATE: _____

EXAMINER: _____

TASK:

005-001-01-01 Perform Lineups of the Residual Heat Removal System

TASK STANDARD:

RHR train "A" is providing core cooling. RHR Train "B" is secured. RCS temperatures remain less than 200°F to preclude unplanned/allowed entry into MODE 4.

TERMINATING CUE: RHR Train "A" is in service with RHR Train "B" shut down.

PREFERRED EVALUATION LOCATION**PREFERRED EVALUATION METHOD**

SIMULATOR

PERFORM

REFERENCES:

SOP-115

RESIDUAL HEAT REMOVAL

INDEX NO.**K/A NO.****RO****SRO**

005000A401

A4.01

Controls and indication for RHR pumps

3.6

3.4

TOOLS:

SOP-115, RESIDUAL HEAT REMOVAL

EVALUATION TIME

20

TIME CRITICAL

NO

10CFR55: 45.a.7

TIME START: _____

TIME FINISH: _____

PERFORMANCE TIME: _____

PERFORMANCE RATING:

SAT: _____

UNSAT: _____

CANDIDATE:

EXAMINER:

SIGNATURE

DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: Plant heatup is in progress in accordance with GOP-2, PLANT STARTUP AND HEATUP (MODE 5 TO MODE 3).
The crew has performed all steps up to step 3.4 of GOP-2 and is currently drawing a bubble with pressurizer level on scale on wide range level.
The ABLL has reported that the "B" RHR Pump bearing is making loud unusual noises and is worried about damage to the pump since it is vibrating excessively.
The CRS and Shift Supervisor have determined that "A" RHR loop be placed in service and the plant maintained in Mode 5.

INITIATING CUES: The CRS directs you as the RO to shift from RHR Train "B" to RHR Train "A" running in accordance with SOP-115, RESIDUAL HEAT REMOVAL, section III.E, SHIFTING FROM RHR TRAIN B TO RHR TRAIN A RUNNING, starting with step 2.1.
"A" CCW will remain the active loop.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Procedure Caution:

- a. Performance of this procedure while RCS Hot Leg temperatures are greater than or equal to 200°F renders both RHR Loops incapable of being aligned to the RWST (reference Technical Specification 3.5.3.d) until the Hot Leg temperatures are reduced to less than 200°F.
- b. Unless Plant conditions absolutely require shifting trains of RHR, this procedure should not normally be utilized in Mode 4.
- c. PCV-145, LO PRESS LTDN, must be in MAN if starting or stopping an RHR Pump with the primary system solid with RHR letdown flow via HCV-142, LTDN FROM RHR.

Ensure the following valves are energized and open per GOP-6, Plant Shutdown From Hot Standby To Cold Shutdown (Mode 3 To Mode 5):

- a. MVG-8701A, RCS LP A TO PUMP A.
- B. MVG-8702A, RCS LP A TO PUMP A.

STEP STANDARD:

Verifies MVG-8701A and MVG-8702A are energized and open - Red lights ON, green lights OFF

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Ensure Train "A" Component Cooling is aligned to supply RHR Heat Exchanger "A" per SOP-118

STEP STANDARD:

Determines that "A" Component Cooling is aligned to supply the "A" RHR heat exchanger by verifying that MVB-9503A, CC TO RHR HX A, is open and that flow is indicated on FI-7034, HX A FLOW GPM.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Close HCV-603A, A Outlet

STEP STANDARD:

Rotates controller for HCV-603A fully counter-clockwise

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Place FCV-605A, A BYP, in MAN and adjust to 100%

STEP STANDARD:

Places controller for FCV-605A in MANUAL and adjusts output to 100%

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Readjust FCV-605A, A BYP, in MAN to 40%.

STEP STANDARD:

Adjusts output for FCV-605A to 40%

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Place PCV-145, LO PRESS LTDN, in MAN

STEP STANDARD:

Places controller for PCV-145 in MANUAL

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Procedure Note:

- a. RHR Pump run time on miniflow should not be permitted to exceed 30 minutes.
- b. After each RHR Pump start, IFI00602A (AB-374) indication should be evaluated to verify proper operation of IFV0602A.

Start XPP-0031A, Pump A

STEP STANDARD:

Places RHR Pump "A" control switch in START. Verifies amps and control switch indication turns red.

CUES:

Booth Operator Cue: If called to check out the RHR pump for start report that the pump is good for start. If called to investigate the pump after start, report that the pump looks good after start. When called to investigate IFI00602A report that flow is 1000 gpm.

Evaluator Note: Applicant will ask for a peer check as required by the procedure. Acknowledge that the applicant would ask for a peer check.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

Place PCV-145, LO PRESS LTDN, in AUTO

STEP STANDARD:

Places controller for PCV-145 in AUTOMATIC

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 9

Equalize flow between the two RHR loops by slowly opening FCV-605A, A BYP.

STEP STANDARD:

Observing flow, slowly increases the output of the controller for FCV-605A until flows are approximately equal.

CUES:

Evaluator Note: Flow will not totally equalize between the two loops. It is critical that "A" loop RHR flow is established not that flows are brought to be equal.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 10

Place FCV-605A, A BYP, in AUTO.

STEP STANDARD:

FCV-605A, A BYP, in AUTO

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 11

Procedure Caution: In Mode 6, RHR flow must be greater than 2800 gpm per Technical Specifications 3.9.7.1 and 3.9.7.2.

Procedure Note: If RCPs or two trains of RHR are running, RHR flow may be less than 3750 gpm. FCV-605A controller setpoint may need to be adjusted to less than the normal flow setpoint to improve temperature control while cooling down.

Ensure FCV-605A, A BYP, modulates to maintain between 2000 GPM and 3750 GPM as indicated on FI-605A, PUMP A FLOW GPM.

STEP STANDARD:

Verifies indicated flow on FI-605A is between 2000 and 3750 GPM.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 12

Shift Letdown from RHR Train B to RHR Train A as follows (AB-412):
Open XVT08720A-RH, LETDOWN HDR RH RETURN HDR A INLET VALVE
Close XVT08720B-RH, LETDOWN HDR RH RETURN HDR B INLET VALVE

STEP STANDARD:

Directs operator to perform valve alignment

CUES:

Booth Operator Cue: When called to Open XVT-8702A use Trigger 1 to open the valve.
When called to close XVT8702B use Trigger 2 to close the valve.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 13

Align RHR Loop B for Standby Operation as follows:
Shift all heat removal to Loop A by slowly opening HCV-603A, A OUTLET, while adjusting HCV-603B, B OUTLET, closed

STEP STANDARD:

Adjusts HCV-603A in the clockwise direction and HCV-603B in the counter clockwise direction while maintaining approximately the same total RHR flow.
Continues to throttle HCV-603A open and HCV-603B closed until all flow is on Train "A"

CUES:

Evaluator Note: It is critical that RCS temperature at the RHR inlet is not allowed to increase above 200°F because this would be an unplanned mode change into MODE 4.

COMMENTS:

CRITICAL: No

SEQUENCED: No

SAT ☐

UNSAT ☐

STEP: 14

Close HCV-603B, B OUTLET

STEP STANDARD:

Rotates controller for HCV-603B fully counter clockwise

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 15

Place FCV-605B, B BYP, in MAN and adjust to 40%

STEP STANDARD:

Places controller for FCV-605B in MANUAL and adjusts controller output to 40%

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 16

Secure the RHR Pump B as follows:

- 1) If the primary system is solid,
 - a) Place PCV-145, LO PRESS LTDN, in MAN.
 - b) Stop XPP-0031B, PUMP B.
 - c) Place PCV-145, LO PRESS LTDN, in AUTO.
- 2) If there is a steam bubble in the Pressurizer, stop XPP-0031B, PUMP B.

STEP STANDARD:

Places "B" RHR Pump Control Switch in STOP. Observes green light on, red light off. Amps go to zero.

CUES:

Evaluator Note: There is a bubble in the Pressurizer.

Evaluator Cue: Cue the applicant as the CRS to place the B RHR pump control switch in PTL for maintenance to look at the pump.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 17

Close FCV-605B, B BYP

STEP STANDARD:

Adjusts the controller for FCV-605B to 0%

CUES:

COMMENTS:

CRITICAL: No **SEQUENCED:** No

SAT ☐

UNSAT ☐

STEP: 18

Open HCV-603B, B OUTLET

STEP STANDARD:

Adjusts the controller for HCV-603B fully clockwise

CUES:

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPS-151

DESCRIPTION: 2013 NRC Sim JPM e RO&SRO-I: SHIFT RHR LOOPS WITH RHR IN SERVICE

IC SET: 334/2

INSTRUCTIONS:

Start with IC 2. IC set 2 is collapsing the bubble. Change parameters to slowly draw a bubble.
Stabilize RCS pressure 350-400 psig and RCS temperature at ~188°F (Open CCW "A" to RHR HX).
Saved to IC 334.
Trigger 1: 8720A (open) LOA-RHR001 Final=1
Trigger 2: 8702B (close) LOA-RHR002 Final =0

COMMENTS:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: Plant heatup is in progress in accordance with GOP-2, PLANT STARTUP AND HEATUP (MODE 5 TO MODE 3).
The crew has performed all steps up to step 3.4 of GOP-2 and is currently drawing a bubble with pressurizer level on scale on wide range level.
The ABL has reported that the "B" RHR Pump bearing is making loud unusual noises and is worried about damage to the pump since it is vibrating excessively.
The CRS and Shift Supervisor have determined that "A" RHR loop be placed in service and the plant maintained in Mode 5.

INITIATING CUES: The CRS directs you as the RO to shift from RHR Train "B" to RHR Train "A" running in accordance with SOP-115, RESIDUAL HEAT REMOVAL, section III.E, SHIFTING FROM RHR TRAIN B TO RHR TRAIN A RUNNING, starting with step 2.1.
"A" CCW will remain the active loop.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPSF-161

2013 NRC Sim JPM f RO&SRO-I: RESPOND TO A
FEED REGULATING VALVE CLOSURE AT LOW
POWER

APPROVAL:

APPROVAL DATE:

REV NO: 3

CANDIDATE: _____

EXAMINER: _____

TASK:

000-147-05-01 Respond to Feedwater Flow Control Valve Failure per AOP-201.1.

TASK STANDARD:

"A" steam generator level is controlled by the operator without causing an automatic reactor trip.

TERMINATING CUE: "A" S/G level is under control of the operator with the main feed reg
bypass valve.

PREFERRED EVALUATION LOCATION

PREFERRED EVALUATION METHOD

SIMULATOR

PERFORM

REFERENCES:

<u>INDEX NO.</u>	<u>K/A NO.</u>		<u>RO</u>	<u>SRO</u>
059000A212	A2.12	Failure of feedwater regulating valves	3.1	3.4

TOOLS: AOP-210.1, FEEDWATER FLOW CONTROL VALVE FAILURE

EVALUATION TIME 5 **TIME CRITICAL** NO **10CFR55:** 45.a.3

TIME START: _____ TIME FINISH: _____ PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____

CANDIDATE: _____

EXAMINER: _____

SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS: None.

INITIAL CONDITION: 15% power BOL.

INITIATING CUES: Respond to developing plant conditions as the BOP operator.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT

☐

UNSAT

☐

STEP: 1

Diagnose entry into AOP-210.1, FEEDWATER FLOW CONTROL VALVE FAILURE.

Procedure Note: Throughout this procedure, "AFFECTED" refers to any Feedwater Flow Control Valve that has failed open, closed, or does NOT respond to demand.

1. Abnormal indication on the associated Feedwater Flow Control Valve controller:

PVT-478, SG A FWF.

PVT-488, SG B FWF.

PVT-498, SG C FWF.

2. Any of the following Main Control Board annunciators in alarm:

SG A(B)(C) STF>FWF MISMATCH (XCP-624 4-3(5-3)(6-3)).

SG A(B)(C) FWF>STF MISMATCH (XCP-624 4-4(5-4)(6-4)).

SG A(B)(C) LVL DEV (XCP-624 1-5(2-5)(3-5)).

SG A(B)(C) LVL LO (XCP-624 1-3(2-3)(3-3)).

SG A(B)(C) LVL HI-HI (XCP-624 1-1(2-1)(3-1)).

SG A(B)(C) LVL LO-LO (XCP-624 1-2(2-2)(3-2)).

STEP STANDARD:

Diagnoses that PVT-478, SG A FWF is closing and enters AOP-210.1, FEEDWATER FLOW CONTROL VALVE FAILURE.

CUES:

Evaluator Note: The applicant may attempt to utilize the ARP actions to correct the level deviations but opening of the bypass valve is unique to the AOP.

Evaluator Note: Allow the applicant to pick the desired procedure from the list of AOPs and then provide AOP-210.1 from the drawer.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Manually adjust the AFFECTED Feedwater Flow Control Valve as necessary to maintain Narrow Range SG level between 60% and 65%:
PVT-478, SG A FWF.

STEP STANDARD:

Attempts to take manual control of PVT-478, SG A FWF, but determines that the valve will not open manually.

CUES:

Evaluator Note: This is an immediate operator action and applicant may do this step without aid of the procedure although that is not required as long as the plant is brought to a stable condition.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Adjust Feedwater Pump speed and Main Turbine load as necessary to maintain SG level. Do NOT exceed 1600 psig Feedwater Pump discharge pressure.

STEP STANDARD:

Raises MFP speed. Does not exceed 1600 psig Feedwater Pump discharge pressure.

CUES:

Evaluator Note: This is an immediate operator action and applicant may do this step without aid of the procedure although that is not required as long as the plant is brought to a stable condition.

Evaluator Note: Note if 1600 psig Feedwater Pump discharge pressure is exceeded the MFP's will trip.

Evaluator Note: With the malfunction that is present this action will not be effective and the applicant may skip this step and go directly to the bypass valve.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

If feed flow remains low, THEN perform the following:

Open the associated bypass valve as necessary to control SG level:

FCV-3321, LOOP A MAIN FW BYP.

FCV-3331, LOOP B MAIN FW BYP.

FCV-3341, LOOP C MAIN FW BYP.

STEP STANDARD:

FCV-3321, LOOP A MAIN FW BYP is in manual and open. S/G level is controlled between 60% and 65%.

CUES:

Evaluator Note: This is an immediate operator action and applicant may do this steps without aid of the procedure although that is not required as the plant is brought to a stable condition.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Procedure Note: If the Feedwater Flow Control Valve is closed, the maximum flow attainable with the bypass valve is 20% to 30%.

Reduce plant load as necessary to control SG level using the bypass valve. REFER TO GOP-4, POWER OPERATION (MODE 1).

STEP STANDARD:

Determines that "A" SG level can be maintained at current power level.

CUES:

Evaluator Note: This is an immediate operator action and applicant may do this steps without aid of the procedure although that is not required as the plant is brought to a stable condition.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPSF-161

DESCRIPTION: 2013 NRC Sim JPM f RO&SRO-I: RESPOND TO A FEED REGULATING VALVE CLOSURE AT LOW POWER

IC SET: 335/44

INSTRUCTIONS:

Saved to IC 335 from IC 44

When examiner is ready insert Trigger #1.

Trigger # 1

VLV-FW001P IFV00478-FW SG A FW CTRL VLV FAIL POSITION Delay=0, Ramp=00:01:00, Final=5.

COMMENTS:

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: 15% power BOL.

INITIATING CUES: Respond to developing plant conditions as the BOP operator.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: NJPS-162

2013 NRC Sim JPM g RO&SRO-I: START AND
LOAD THE MAIN GENERATOR

APPROVAL:

APPROVAL DATE:

REV NO: 3

CANDIDATE: _____

EXAMINER: _____

TASK:

045-005-01-01 Synchronize Turbine Generator with Grid at Minimum Load Per SOP-201/SOP-207/SOP-214/SOP-218/SOP-217

TASK STANDARD:

Main Generator is synchronized with the grid without causing damage to the main generator breaker (closing out of phase) and loaded to 50 MW.

TERMINATING CUE: Main Generator is synchronized with grid and is carrying at least 50 MW.

PREFERRED EVALUATION LOCATION**PREFERRED EVALUATION METHOD**

SIMULATOR

PERFORM

REFERENCES:

<u>INDEX NO.</u>	<u>K/A NO.</u>		<u>RO</u>	<u>SRO</u>
062000A401	A4.01	All breakers (including available switchyard)	3.3	3.1

TOOLS: SOP-301, MAIN GENERATOR SYSTEM.

EVALUATION TIME 15 **TIME CRITICAL** NO **10CFR55:** 45.a.6

TIME START: _____ TIME FINISH: _____ PERFORMANCE TIME: _____

PERFORMANCE RATING:

SAT: _____ UNSAT: _____

CANDIDATE: _____**EXAMINER:** _____

SIGNATURE

DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS: None.

INITIAL CONDITION: 15% power. The Main Generator is being synchronized in accordance with SOP-301 Section III. A. STARTUP. Step 2.2 has just been completed.

INITIATING CUES: The CRS directs you as the BOP to synchronize the Main Generator in accordance with SOP-301 Section III. A. STARTUP starting at step 2.3.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 1

Procedure Note: The System Controller should be notified as soon as practical, but within 30 minutes if Automatic Regulation is not achieved.

Place the GEN VOLT REG XFER Switch, in MAN.

STEP STANDARD:

GEN VOLT REG XFER Switch, in MAN.

CUES:

Evaluator Note: The GEN VOLT REG XFER will already be in MAN and so this step is not critical.

Booth Operator Cue: If called as the system controller respond that you understand they are putting the voltage adjust in Manual and to notify that condition exists for >30 minutes.

Booth Operator Cue: If asked for a switching order respond that your switching order is 1.

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Close the GEN FIELD BKR.

STEP STANDARD:

GEN FIELD BKR take to CLOSE. Red light lit. Green light off.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Using the EXC FIELD CNTRL Switch, energize the Exciter and Main Generator by placing the switch to CLOSE and verifying the red light illuminates.

STEP STANDARD:

EXC FIELD CNTRL taken to CLOSE Red light lit. Green light off.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Procedure Note: To prevent inadvertently over or under exciting the Main Generator, the controls for both the Manual and Automatic Regulators are only activated for an interval of 1.0 second per adjustment.

Using the EXC FIELD VOLT ADJ (MAN) Control Switch adjust Generator KILOVOLTS to 22 KV (normal band 20.9 to 23.1 KV).

STEP STANDARD:

EXC FIELD VOLT ADJ (MAN) used. KILOVOLTS are between 20.9 and 23.1 KV.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

Using the GEN VOLT SEL Switch, check phase voltages on KILOVOLTS Meter.

STEP STANDARD:

All positions of GEN VOLT SEL show voltage between 20.9 and 23.1 KV.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Procedure Note: Failure of one regulation mode to track with the other is indicative of a problem with the in-service Core. I&C should be contacted to investigate the problem.

Verify the Automatic Regulator tracks to match the Manual Regulator by observing the EXCITER VOLTS Meter trends to 0%.

STEP STANDARD:

EXCITER VOLTS meter is at 0%.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Transfer the GEN VOLT REG XFER Switch, to AUTO.

STEP STANDARD:

GEN VOLT REG XFER Switch in AUTO.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

Using the GEN FIELD VOLT ADJ (AUTO) Control Switch, cycle Main Generator voltage above and below 22 KV (normal band 20.9 to 23.1 KV) sufficiently to verify control while monitoring that the EXCITER VOLTS Meter trends toward 0% following each cycle.

STEP STANDARD:

Voltage raised and lowered. EXCITER VOLTS Meter trends toward 0%.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 9

Procedure Note: In order to get the light to change state on any of the active OC2000 Pushbuttons, the button itself must be depressed.

Ensure the PSS CNTRL ENABLE Pushbutton is lit (TB-436, OC2000).

STEP STANDARD:

Calls local operator to ensure PSS CNTRL ENABLE Pushbutton is lit (TB-436, OC2000).

CUES:

Booth Operator Cue: When called to ensure PSS CNTRL ENABLE Pushbutton is lit (TB-436, OC2000) respond that it is lit.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 10

Notify the System Controller that the unit is ready to be paralleled and obtain a Switching Order.

STEP STANDARD:

Calls System Controller for Switching Order.

CUES:

Booth Operator Cue: When called as System Controller for a Switching Order respond "Parallel to the Grid, Your Switching Order is 1."

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 11

Place the GEN SYNC NORM FEED Switch, to MAN.

STEP STANDARD:

GEN SYNC NORM FEED Switch, in MAN.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 12

Using the GEN FIELD VOLT ADJ (AUTO) Control Switch, adjust GEN VOLTS equal to or slightly higher than SYS VOLTS.

STEP STANDARD:

GEN VOLTS equal or slightly higher than SYS VOLTS.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 13

Using the Raise Lower Pushbuttons on the Main Control Board at the Turbine EHC HMI adjust Turbine speed until the SYNCHROSCOPE rotates slowly in the FAST (clockwise) direction.

STEP STANDARD:

SYNCHROSCOPE rotates slowly in the FAST (clockwise) direction.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 14

When the SYNCHROSCOPE indicator passes 11 o'clock and slowly approaches 12 o'clock, close the GEN BKR. (PEER check)

STEP STANDARD:

GEN BKR is closed in phase.

CUES:

Evaluator Note: This step requires a peer check. Respond that you understand that applicant desires a peer check.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 15

Verify the GEN BKR is closed.

STEP STANDARD:

GEN BKR is CLOSED. Red light lit. Green light off.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 16

On the EHC HMI, Control/Load screen, select Ramp Rate and enter desired rate of 1% or less.

G. Raise Turbine load to 50 MW by one of the following methods:

- 1) Using the EHC HMI, Control/Load screen, select Manual Adj, Raise.
- 2) Using the Raise Pushbutton on the Main Control Board at the Turbine EHC HMI.

STEP STANDARD:

MW indicate ~ 50 MW.

CUES:

Evaluator Note: The new EHC system now loads the generator to ~50 MW automatically.

Evaluator Cue: If asked as SS what the desired rate of load increase is respond 0.5 %/min.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 17

Place the GEN SYNCH NORM FEED Switch in OFF.

STEP STANDARD:

GEN SYNCH NORM FEED Switch in OFF.

CUES:

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPS-162

DESCRIPTION: 2013 NRC Sim JPM g RO&SRO-I: START AND LOAD THE MAIN GENERATOR

IC SET: 336/44

INSTRUCTIONS:

Saved to IC-336. Build from IC-44.

IC-44.

Ensure IR and PR low trip setpoints are blocked.

Roll Main Turbine to 1800 RPM, per SOP-214, Main Turbine And Controls.

Freeze.

When applicant is ready go to run.

COMMENTS:

Ensure that the GEN VOLT REG XFER Switch is at the 45° angle and not 90° where it points at nothing.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: 15% power. The Main Generator is being synchronized in accordance with SOP-301 Section III. A. STARTUP. Step 2.2 has just been completed.

INITIATING CUES: The CRS directs you as the BOP to synchronize the Main Generator in accordance with SOP-301 Section III. A. STARTUP starting at step 2.3.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**

V.C. SUMMER NUCLEAR STATION JOB PERFORMANCE MEASURE

JPM NO: **NJPS-152**

2013 NRC Sim JPM h RO: RESPOND TO HIGH
REACTOR BUILDING PRESSURE

APPROVAL:

APPROVAL DATE:

REV NO: 15

CANDIDATE: _____

EXAMINER: _____

TASK:

029-004-01-01 VENT THE REACTOR BUILDING

TASK STANDARD:

RB pressure is reduced $<+0.05$ and >-0.05 psig on PI-8254, RB NR PRESS PSI.
Containment isolation is restored by closing the purge exhaust valves.

TERMINATING CUE: RB purge is secured.***PREFERRED EVALUATION LOCATION******PREFERRED EVALUATION METHOD***

SIMULATOR

PERFORM

REFERENCES: SOP-114 REACTOR BUILDING VENTILATION SYSTEM

<i>INDEX NO.</i>	<i>K/A NO.</i>		<i>RO</i>	<i>SRO</i>
028000A401	A4.01	HRPS controls	4.0	4.0

TOOLS: SOP-114, REACTOR BUILDING VENTILATION SYSTEM
HPP-709, Attachment VI, REACTOR BUILDING PURGE RELEASE PERMIT.

EVALUATION TIME 15 ***TIME CRITICAL*** No ***10CFR55:*** 45.a.5

TIME START: _____ TIME FINISH: _____ PERFORMANCE TIME: _____

PERFORMANCE RATING: SAT: _____ UNSAT: _____***CANDIDATE:*** _____

EXAMINER: _____

SIGNATURE DATE

INSTRUCTIONS TO OPERATOR

READ TO OPERATOR:

WHEN I TELL YOU TO BEGIN, YOU ARE TO PERFORM THE ACTIONS AS DIRECTED IN THE INITIATING CUES. I WILL DESCRIBE THE GENERAL CONDITIONS UNDER WHICH THIS TASK IS TO BE PERFORMED AND PROVIDE THE NECESSARY TOOLS WITH WHICH TO PERFORM THIS TASK. BEFORE STARTING, I WILL EXPLAIN THE INITIAL CONDITIONS, WHICH STEPS TO SIMULATE OR DISCUSS, AND PROVIDE INITIATING CUES. WHEN YOU COMPLETE THE TASK SUCCESSFULLY, THIS JOB PERFORMANCE MEASURE WILL BE SATISFIED.

SAFETY CONSIDERATIONS:

INITIAL CONDITION: Plant is at 100% power.
Preparations are underway to conduct maintenance on the Personnel Access inner door.

SOP-114, REACTOR BUILDING VENTILATION SYSTEM, III.P.
LOWERING REACTOR BUILDING PRESSURE USING NORMAL PRESSURE CONTROL is being used to lower RB pressure.

All initial conditions have been met. A reactor building purge release permit has been issued in accordance with HPP-709. RM-A4 and RM-A2 are in service.

RM-A4's setpoint has been adjusted in accordance with the Release Permit and step 2.4 of SOP-114, III.P.

FI-8252, H2 PURGE FLOW CFM is out of service. The CRS has completed 702 Attachment VI.S-3, 6" RB PURGE OPERATING WITH IFT08252 AND/OR RMA-4 INOPERABLE, which requires that the release flowrate be estimated every 4 hours. The CRS has determined that the flow rate will be estimated at 600 cfm for the duration of the release.

INITIATING CUES: Lower RB pressure as required in accordance with SOP-114, REACTOR BUILDING VENTILATION SYSTEM, III.P. LOWERING REACTOR BUILDING PRESSURE USING NORMAL PRESSURE CONTROL starting at step 2.5.

HAND JPM BRIEFING SHEET TO OPERATOR AT THIS TIME!

STEPS

CRITICAL: Yes

SEQUENCED: Yes

SAT

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UNSAT

☐

STEP: 1

Procedure Caution: To prevent damage to Alternate Purge System ducting, Alternate Purge must not be placed in service if RB pressure is greater than 3 psi.

Open the following:

- 1) PVG-6066, CNTMT PUR EXH ISOL VLV.
- 2) PVG-6067, CNTMT PUR EXH ISOL VLV.

STEP STANDARD:

Places PVG-6066, CNTMT PUR EXH ISOL VLV and PVG-6067, CNTMT PUR EXH ISOL VLV. switch in the OPEN position. Verifies the valve opens by observing the red light lit and the green light off.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 2

Start XFN-96, ALT PUR EXH FAN.

STEP STANDARD:

Places switch for XFN-96 ALT PUR EXH FAN in START. Observes red light ON and green light OFF.

CUES:

Examiner Cue: Cue the applicant that "Time Compression" will be used to expedite the administration of the JPM.

Evaluator Note: The procedure requires a peer check at this step. Acknowledge that you understand that the applicant will obtain a peer check.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 3

Record time release was started and flow rate as indicated on FI-8252, H2 PURGE FLOW CFM, in the following places:

- 1) Reactor Building Purge Release Permit.
- 2) Station Log Book.

STEP STANDARD:

Records start time and flowrate estimate of 600 cfm in the Station Log Book and on the Continuous Waste Release Permit.

CUES:

Examiner Cue: Cue the applicant that the start time and flow rate will be transferred to the station log book.

Examiner Note: Initial conditions indicate that the flowrate of the release is estimated at 500 cfm.

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 4

Records release readings from RM-A2 and RM-A4.

STEP STANDARD:

Records release readings from RM-A2 and RM-A4.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 5

If RB pressure is being lowered to support door maintenance, simultaneous opening of both personnel hatch doors or opening of equipment hatch door, perform the following:

a. Monitor PI-8254, RB NR PRESS PSI.

b. When RB pressure is between negative 0.05 psi and positive 0.05 psi, stop XFN-96, ALT PUR EXH FAN.

STEP STANDARD:

Checks RB pressure $<+0.05$ and >-0.05 psig on PI-8254, RB NR PRESS PSI.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 6

Stop XFN-96, ALT PUR EXH FAN.

STEP STANDARD:

Stops XFN-96, ALT PUR EXH FAN.

CUES:

COMMENTS:

CRITICAL: Yes

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 7

Close the following:

- a. PVG-6066, CNTMT PUR EXH ISOL VLV.
- b. PVG-6067, CNTMT PUR EXH ISOL VLV.

STEP STANDARD:

Places PVG-6066 CNTMT PUR EXH ISOL VLV and PVG-6067 CNTMT PUR EXH ISOL VLV switches in the CLOSE position and verifies the valves go close by verifying green light lit and red light off.

CUES:

COMMENTS:

CRITICAL: No

SEQUENCED: Yes

SAT ☐

UNSAT ☐

STEP: 8

Record time release was stopped in the following places:

- a. Reactor Building Purge Release Permit.
- b. Station Log Book.

STEP STANDARD:

Records time in the Station Log Book and on the Continuous Waste Release Permit.

CUES:

Examiner Cue: Cue the applicant that the release time will be recorded in the station log book and the continuous waste release permit.

COMMENTS:

Examiner ends JPM at this point.

JPM SETUP SHEET

JPM NO: NJPS-152

DESCRIPTION: 2013 NRC Sim JPM h RO: RESPOND TO HIGH REACTOR BUILDING PRESSURE

IC SET: 363/10

INSTRUCTIONS:

Run when applicant is ready.

If IC-363 is not available:

Reset to IC 10

Event #1 x15i355t>0

Enter MALF RMS004C, CONT BREACH FHB436; Set = 2 SCFT, when examinee starts XFN-96.

Event #2 x15i355s>0&&jmlrms4c>0 (Deletes Malf RMS004C when the examinee secures XFN-96)

COMMENTS:

Hang an Orange R&R tag on FI-8252, H2 PURGE FLOW CFM.

Provide an operator to silence alarms and have operator silence alarms from the MCB while the applicant is conducting the release from the HVAC panel.

JPM BRIEFING SHEET

OPERATOR INSTRUCTIONS:

INITIAL CONDITION: Plant is at 100% power.
Preparations are underway to conduct maintenance on the Personnel Access inner door.

SOP-114, REACTOR BUILDING VENTILATION SYSTEM, III.P.
LOWERING REACTOR BUILDING PRESSURE USING NORMAL PRESSURE CONTROL is being used to lower RB pressure.

All initial conditions have been met. A reactor building purge release permit has been issued in accordance with HPP-709. RM-A4 and RM-A2 are in service.

RM-A4's setpoint has been adjusted in accordance with the Release Permit and step 2.4 of SOP-114, III.P.

FI-8252, H2 PURGE FLOW CFM is out of service. The CRS has completed 702 Attachment VI.S-3, 6" RB PURGE OPERATING WITH IFT08252 AND/OR RMA-4 INOPERABLE, which requires that the release flowrate be estimated every 4 hours. The CRS has determined that the flow rate will be estimated at 600 cfm for the duration of the release.

INITIATING CUES: Lower RB pressure as required in accordance with SOP-114, REACTOR BUILDING VENTILATION SYSTEM, III.P. LOWERING REACTOR BUILDING PRESSURE USING NORMAL PRESSURE CONTROL starting at step 2.5.

**HAND THIS PAPER BACK TO YOUR
EVALUATOR WHEN YOU FEEL THAT YOU
HAVE SATISFACTORILY COMPLETED THE
ASSIGNED TASK.**