Facility:	Turkey Point	Task No:	01028016300
Task Title:	JPM: Recover Misaligned Control Rod	JPM No:	01028016303
K/A Reference:	001 A2.03 RO 3.5 SRO 4.2		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X

Classroom _____ Simulator X _____ Plant _____

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- While raising power to 100%, a rod misalignment is discovered.
- Reactor Power is 50% and stable
- There has been no rod motion within the last 20 minutes.
- RCC Control Bank D is at 165 steps withdrawn, with the RPI for Control Rod M8 indicating 145 steps.
- The movable gripper fuse for Control Rod M8 has blown.

Initiating Cue:

- The moveable gripper fuse has been replaced.
- The US direct you to align Control Rod M8 using 3-ONOP-028.1, starting at Step 5.9.1.

Rec'd 10/5/11

Task Standard:

- The operator will recover Control Rod M8 and return to required bank alignment.

Required Materials:

- 3-ONOP-028.1, *RCC Misalignment*
- Key to Rod Disconnect Switch Cabinet

General References:

- Technical Specifications

Time Critical Task: No

Validation Time: 20 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 191 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Place Rod Selector in Manual.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. Provide a copy of 3-ONOP-028.1, *RCC Misalignment*, marked-up through Step 5.8.3.

_____ 7. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain 3-ONOP-028.1, *RCC Misalignment.*	SAT _____ UNSAT _____
STANDARD	Applicant obtains 3-ONOP-028.1, *RCC Misalignment.*	
CUE	Provide Applicant with a copy of 3-ONOP-028.1, *RCC Misalignment.*	
COMMENT		

STEP 2	Obtain permission from the Reactor Engineering Supervisor or designee. (3-ONOP-028.1 Step 5.9.1)	SAT _____ UNSAT _____
STANDARD	Applicant obtains permission from Reactor Engineering and the Shift Manager to align the RCC to its associated bank.	
CUE	Inform the applicant that the Reactor Engineering Supervisor and the Shift Manager have granted permission to realign Control Rod M8.	
COMMENT		

STEP 3	**IF** reactor power has been reduced as per Technical Specification 3.1.3.6, **THEN** do not increase power until the RCCs has been realigned. (3-ONOP-028.1 Step 5.9.2)	SAT _____ UNSAT _____
STANDARD	Applicant determines that Reactor Power has not been reduced per T.S. 3.1.3.6.	
CUE		
COMMENT		

STEP 4 √	Position the Rod Motion Control Selector switch to the RCC bank which has the misaligned RCC. (3-ONOP-028.1 Step 5.9.3)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the Rod Motion Control Selector switch in the clockwise direction to the CBD position.	
CUE		
COMMENT		

STEP 5 √	Place all the lift coil disconnect switches for the misaligned rod bank to the disconnect position (toggle switch down) **EXCEPT** the misaligned RCC switch which is left in the connect position (toggle switch up). (3-ONOP-028.1 Step 5.9.4)	SAT _____ UNSAT _____
STANDARD	Applicant obtains the key to the Lift Coil Disconnect Box from the SM/US/FS. Applicant then places the lift disconnect switches for Bank D to the disconnect position (down), EXCEPT for RCC M8.	
CUE		
COMMENT		

STEP 6	Record the step position for the misaligned RCC group demand step counter in the Unit Narrative Log as follows: 1. Bank _____ 2. Group _____ 3. Position _____ steps (3-ONOP-028.1 Step 5.9.5)	SAT _____ UNSAT _____
STANDARD	Applicant records the information as follows: 1. Bank D 2. Group 1 3. Position steps 165	
CUE	**EVALUATOR CUE:** US records supplied information in the Unit Narrative Log.	
COMMENT		

STEP 7 √	Manually set the associated group demand step counter to the position the misaligned RCC is determined to be in. (3-ONOP-028.1 Step 5.9.6)	SAT _____ UNSAT _____
STANDARD	Applicant depresses the middle pushbutton on BANK D, GROUP 1 step counter to set the counter to 145 steps.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** There are three pushbuttons on the Group Step Demand Counters. UPPER: Raises indication MIDDLE: Lowers indication LOWER: Resets indication to ZERO (0)	

STEP 8 √	**IF** the misaligned RCC is in a control bank, **THEN** reset the bank demand step counters from the DCS as follows: 1. Navigate to the RPI BANK DEMAND ALIGNMENT screen. 2. Select INITIATE ALIGNMENT for the affected control bank. 3. Select NEW VALUE in the overlay. 4. Type in the desired bank demand step value, using the keyboard. 5. Press ENTER. 6. Select INITIATE RE ALIGNMENT in the overlay. 7. Select YES in the save changes overlay. 8. Select CLOSE OVERLAY. (3-ONOP-028.1 Step 5.9.7)	SAT _____ UNSAT _____
STANDARD	Applicant determines that RCC M8 is in a control bank and proceeds as follows: 1. Navigates to the RPI BANK DEMAND ALIGNMENT screen. 2. Selects INITIATE ALIGNMENT for the affected control bank. 3. Selects NEW VALUE in the overlay. 4. Type in 145 steps, using the keyboard. 5. Presses Enter. 6. Selects INITIATE RE ALIGNMENT in the overlay. 7. Selects YES in the save changes overlay. 8. Selects CLOSE	
CUE		
COMMENT		

NOTE	**CAUTION** ***Failure to follow instructions provided by the Reactor Engineering Supervisor could affect fuel integrity caused by power peaking.*** **NOTE** *Annunciator B9/4, ROD CONTROL URGENT FAILURE, and the RCC power cabinet URGENT FAILURE will alarm for the group with the lift coils disconnected.*	
STEP 9 √	Place the Rod Motion Lever to the IN/OUT position, as applicable. (3-ONOP-028.1 Step 5.9.8.1)	SAT _____ UNSAT _____
STANDARD	Applicant places the Rod Motion Lever in the OUT position, withdraws Control Rod M8 to match the rest of Control Bank D (165 Steps).	
CUE	**BOOTH OPERATOR CUE:** Tell the operator the Reactor Engineering Supervisor's directions are to borate as required to maintain Tavg within 1°F of Tref. **BOOTH OPERATOR CUE:** If asked, as Rx Engineering, tell operator that rod withdrawal rate should be 10 —15 steps per minute (per Step 5.9.8.3). **TERMINATING CUE:** **Evaluator informs Applicant that another operator will complete the remaining steps of this procedure. This completes the JPM.**	
COMMENT		
NOTE	**EVALUATOR NOTE:** Annunciator SHUTDOWN ROD OFF TOP DEVIATION (B 9/3) may actuate and Applicant may explain that this is due to CAUSE #2.	

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01028016303

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result : Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- While raising power to 100%, a rod misalignment is discovered.
- Reactor Power is 50% and stable
- There has been no rod motion within the last 20 minutes.
- RCC Control Bank D is at 165 steps withdrawn, with the RPI for Control Rod M8 indicating 145 steps.
- The movable gripper fuse for Control Rod M8 has blown.

Initiating Cue:

- The moveable gripper fuse has been replaced.
- The US direct you to align Control Rod M8 using 3-ONOP-028.1, starting at Step 5.9.1.

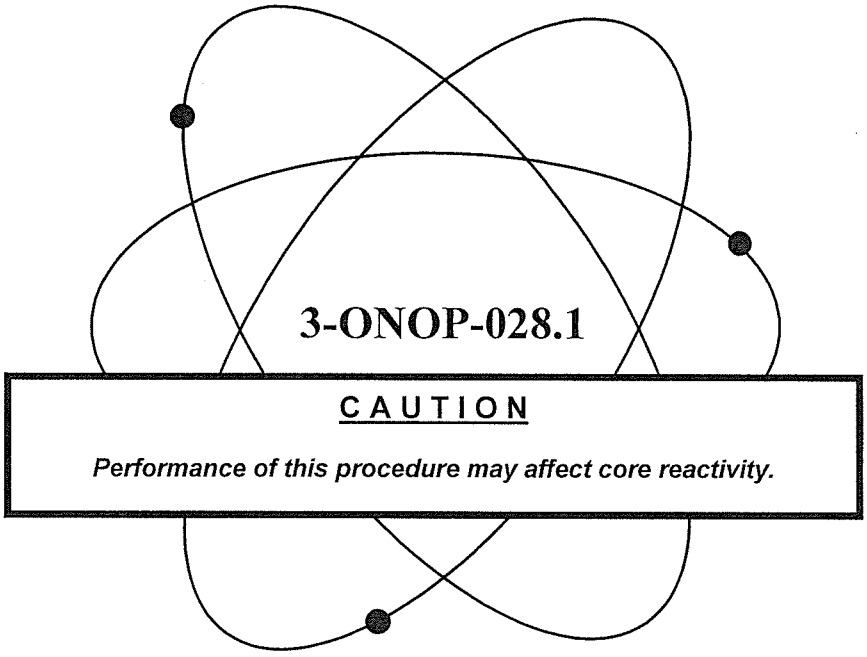
Acknowledge to the examiner when you are ready to begin.

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

Florida Power & Light Company

Turkey Point Nuclear Plant

Unit 3



Title:

RCC Misalignment

(Continuous Use)

Safety Related Procedure

Responsible Department:	Operations
Revision Number:	1
Issue Date:	10/27/10
Revision Approval Date:	8/2/10

***PCRs** 08-1972, 09-0987, 10-0929*
***PC/Ms** 92-031, 93-005, 01-0796P, 09-006*

W97/JWB/emc/cls/nw

Rec'd 10/5/11

LIST OF EFFECTIVE PAGES
(Rev. 1)

Page	Revision Date
1	08/02/10
2	08/02/10
3	04/07/09
4	04/07/09
5	04/07/09
6	04/07/09
7	04/07/09
8	04/07/09
9	08/02/10
10	04/07/09
11	04/07/09
12	08/02/10
13	04/07/09

TABLE OF CONTENTS

1.0 PURPOSE

1.1 This procedure provides instructions to be followed in the event one or more RCC is misaligned with the associated bank. This procedure is also initially used for an RCC position indication malfunction to verify the RCCs are aligned with the associated bank.

2.0 SYMPTOMS

2.1 Power range nuclear instrumentation variation of greater than 3 percent difference between any two detectors at the same elevation.

2.2 Axial flux difference indicators difference of 3 percent between any two channels.

2.3 Significant axial power shape difference from symmetric assemblies, as determined by the Reactor Engineering Supervisor.

NOTE

After RCC motion, one hour is provided to allow time for thermal soak, so that proper RCC indication is obtained.

2.4 With no RCC motion within the last hour, an individual RPI indicates greater than the Allowed Rod Misalignment of Technical Specification 3.1.3.1.

2.5 Difference of greater than 2 steps between group step counters in the same bank.

2.6 Core exit thermocouple difference of 10°F relative to symmetric thermocouples.

2.7 Nuclear Instrumentation Detector Current Comparator Drawer UPPER SECTION DEVIATION or LOWER SECTION DEVIATION light on above 50 percent power.

2.8 Nuclear Instrumentation Comparator and Rate Drawer CHANNEL DEVIATION Light on.

2.9 Annunciators

2.9.1 B 2/2, POWER RANGE UPPER DET HI FLUX DEV/AUTO DEFEAT (Normally lit less than 50 percent power)

2.9.2 B 2/3, POWER RANGE LOWER DET HI FLUX DEV/AUTO DEFEAT (Normally lit less than 50 percent power)

2.9.3 B 6/4, POWER RANGE CHANNEL DEVIATION

2.9.4 B 9/2, AXIAL FLUX TILT

2.9.5 B 9/3, SHUTDOWN ROD OFF TOP/DEVIATION

3.0 AUTOMATIC ACTIONS

3.1 **IF** the axial flux difference exceeds +2 percent, **THEN** the OTΔT trip setpoint will be lowered.

4.0 IMMEDIATE ACTIONS

4.1 None

5.0 **SUBSEQUENT ACTIONS**

5.1 Place the Rod Motion Control Selector to the MAN position.

5.2 Proceed as follows:

5.2.1 **IF** reactor power is greater than 75 percent **OR** more than one RCC is misaligned, **THEN**:

1. Borate/dilute AND/OR change Turbine load to maintain Tavg within 3°F of Tref.

2. Use RCC motion only to control axial flux within the target band.

NOTE

If increasing Reactor power to approximately 3 percent (stay in Mode 2) for a flux map, rod motion may be used.

3. Do **NOT** withdraw control rods to increase power until the affected RCCs have been aligned, except as noted above.

5.2.2 **IF** reactor power is less than 75 percent **AND** one RCC is misaligned, **THEN** at the discretion of the Reactor Engineering Supervisor, use rod motion **OR** boration/dilution to limit reactor power to less than 75 percent.

5.3 Notify the Reactor Engineering Supervisor or designee **AND** provide the following information:

5.3.1 Amount of time the RCCs has (have) been misaligned.

5.3.2 Degree of misalignment.

5.3.3 Current reactor status (i.e., rods in manual, reactor power, and RCC position).

NOTE

RPI gain adjustments should be delayed until 0-OSP-059.14 Rod Position Indication (RPI) verification is performed.

5.4 Notify the I&C Supervisor to verify RPI indication **AND** to investigate CRDM System for possible failure.

CAUTION

When more than one RCCA in the same bank is suspected of being misaligned from its step demand counter, flux traces are required to be performed separately for each RCCA. Upon declaring the RCCA not misaligned, the associated RPI must be declared operable prior to performing the next flux trace to prevent an unnecessary entry into Tech Spec action 3.0.3.

5.5 Have the Reactor Engineering Supervisor perform one or more of the following, at the discretion of the Reactor Engineering Supervisor, to confirm RCC misalignment or RCC position indication malfunction:

5.5.1 Perform 3-OSP-059.10, Determination of Quadrant Power Tilt Ratio.

5.5.2 Check Δ Flux meters.

5.5.3 Check core exit thermocouples.

5.5.4 Two Thimble Flux Map for symmetry check **OR** to estimate RCC position

1. Visual
2. Computer check of digital data

5.5.5 Full Core Flux Map for verification of core power distribution.

5.5.6 Stepping of RCCs that are nearly or fully withdrawn.

5.5.7 Rod Deviation/Axial Flux Panel

5.6 **IF** the RCC is determined to be aligned with the associated bank **AND** an RCC position indicator is failed, **THEN** go to 3-ONOP-028.2, RCC Position Indication Malfunction.

5.7 **IF** more than one RCC is inoperable or misaligned from the group demand step counter position by more than the Allowed Rod Misalignment of Technical Specification 3.1.3.1, **THEN** comply with the actions of Technical Specification 3.1.3.1.

5.8 **IF** one RCC is misaligned from the associated group demand step counter height by more than the Allowed Rod Misalignment of Specification 3.1.3.1, **THEN** power operation may continue provided within 1 hour:

5.8.1 The RCC is restored to operable status within the Allowed Rod Misalignment of Technical Specification 3.1.3.1,

OR

5.8.2 The RCC is declared inoperable and the remainder of the RCCs in the bank with the inoperable RCC are aligned to within the Allowed Rod Misalignment of Technical Specification 3.1.3.1 of the inoperable RCC while **NOT** exceeding the RCC insertion limits in accordance with the Plant Curve Book, Section VII Figure 3, **AND**

1. The thermal power level shall be restricted in accordance with Technical Specification 3.1.3.6 during subsequent operation,

OR

5.8.3 The RCC is declared inoperable **AND** the shutdown margin requirement of Technical Specification 3.1.1.1 is satisfied. Power operation may then continue provided that:

1. The thermal power level is reduced to less than or equal to 75 percent within the next hour, and within the following 4 hours the high neutron flux trip setpoint is reduced to less than or equal to 85 percent of rated thermal power **AND**
2. The shutdown margin requirement of Technical Specification 3.1.1.1 is determined at least once per 12 hours **AND**
3. A power distribution map is obtained from movable incore detectors and $F_Q(Z)$ and $F_\Delta H^N$ are verified to be within the limits within 72 hours **AND**
4. A re-evaluation of each accident analysis listed in Enclosure 1 is performed within 5 days, to confirm that the previously analyzed results of the accidents listed in Enclosure 1 remain valid under the present conditions **AND**
5. The rod worth of the inoperable RCC is determined within 4 weeks.
   a. **IF** the RCC is determined to have a potential reactivity insertion of greater than 300 PCM upon ejection at rated power, **THEN** be in Mode 3, Hot Standby within 6 hours.
6. **AFTER** performing re-evaluation of each accident analysis (Substep 5.8.3.4) and verification of the Hot Channel Factors to be within the limits (Substep 5.8.3.3), **THEN** maintain reactor power less than the high neutron flux trip setpoint (85 percent).

5.9 Align one RCC at a time with the associated bank as follows:

5.9.1 Obtain permission from the Reactor Engineering Supervisor or designee.

5.9.2 **IF** reactor power has been reduced as per Technical Specification 3.1.3.6, **THEN** do not increase power until the RCCs has been realigned.

5.9.3 Position the Rod Motion Control Selector switch to the RCC bank which has the misaligned RCC.

5.9.4 Place all the lift coil disconnect switches for the misaligned rod bank to the disconnect position (toggle switch down) **EXCEPT** the misaligned RCC switch which is left in the connect position (toggle switch up).

5.9.5 Record the step position for the misaligned RCC group demand step counter in the Unit Narrative Log as follows:

1. Bank _____
2. Group _____
3. Position _____steps

5.9.6 Manually set the associated group demand step counter to the position the misaligned RCC is determined to be in.

5.9.7 **IF** the misaligned RCC is in a control bank, **THEN** reset the bank demand step counters from the DCS as follows:

1. Navigate to the RPI BANK DEMAND ALIGNMENT screen.
2. Select INITIATE ALIGNMENT for the affected control bank.
3. Select NEW VALUE in the overlay.
4. Type in the desired bank demand step value, using the keyboard.
5. Press Enter.
6. Select INITIATE RE ALIGNMENT in the overlay.
7. Select YES in the save changes overlay.
8. Select CLOSE OVERLAY.

CAUTION

Failure to follow instructions provided by the Reactor Engineering Supervisor could affect fuel integrity caused by power peaking.

NOTE

Annunciator B9/4, ROD CONTROL URGENT FAILURE, and the RCC power cabinet URGENT FAILURE will alarm for the group with the lift coils disconnected.

5.9.8 Align the misaligned RCC using guidance provided by the Reactor Engineering Supervisor as follows:

1. Place the Rod Motion Lever to the IN/OUT position, as applicable.

2. Maintain Reactor Power at the level determined by the Reactor Engineering Supervisor as follows:

   a. **IF** misaligned RCC must be inserted, **THEN** adjust Turbine load to maintain Tref equal to Tavg.

   b. **IF** misaligned RCC must be withdrawn, **THEN** borate at less than or equal to 10 gpm, as directed by the Reactor Engineering Supervisor.

3. Withdraw or insert the misaligned RCC at 10 to 15 steps per minute to align the control rod.

4. Monitor Power Range Nuclear Instrumentation for abnormal flux tilts (greater than 3 percent difference between any two detectors at the same elevation).

5. **DO NOT** increase reactor power without permission from the Reactor Engineering Supervisor **AND** the Shift Manager.

6. Continue to move the misaligned RCC until the group step counter indicates the position recorded in Step 5.9.5.

5.9.9 Place all lift coil disconnect switches to the connect position (toggle switch up).

5.9.10 Depress the Rod Control Alarm Reset **AND** verify the following:

1. Annunciator B 9/4, ROD CONTROL URGENT FAILURE, clears.
2. The RCC power cabinet URGENT FAILURE light is off.

5.9.11 **IF** other RCCs are misaligned, **THEN** return to Steps 5.9.1 through 5.9.10.

5.10 **AFTER** the malfunction has been corrected **AND** before increasing power, **THEN** monitor the following parameters to ensure the flux distribution is normal:

5.10.1 Power range nuclear instrumentation - less than 3 percent difference between any two detectors at the same elevation

5.10.2 Core exit thermocouples - less than 10°F difference between any two channels at like symmetric locations

NOTE

An Incore Flux Map is optional, at the discretion of the Reactor Engineering Supervisor.

5.10.3 No significant axial power shape difference from symmetric assemblies as determined by the Reactor Engineering Supervisor

5.10.4 Axial flux indicators - less than 3 percent difference between any two channels

5.11 Place Rod Control Selector Switch to MANUAL or AUTOMATIC position.

6.0 REFERENCES/RECORDS REQUIRED/ COMMITMENT DOCUMENTS

6.1 References

6.1.1 Technical Specifications:

1. Section 3.2, Power Distribution Limits
2. Section 3/4.1.3, Reactivity Control Systems

6.1.2 Procedures

1. 3-ONOP-028.2, Control Rod Position Indication Malfunction
2. 3-OSP-059.10, Determination of Quadrant Power Tilt Ratio
3. 3-PMI-028.3, RPI Hot Calibration, CRDM Stepping Test and Rod Drop Test

6.1.3 Plant Curve Book, Unit 3

1. Section VII, Figure 3, Rod Insertion Limits vs Thermal Power

6.1.4 INPO SOERs

1. SOER 84-2 (1, 2 and 8) Control Rod Mispositioning
2. SOER 84-2, Control Rod Mispositioning-Addendum

6.1.5 Miscellaneous Documents (i.e., PC/M, Correspondence)

1. PC/M 93-005, Elimination of Turbine Runback
2. PC/M 09-006, Rod Position Indication System Replacement

6.2 Records Required

6.2.1 None

6.3 Commitment Documents

6.3.1 None

END OF TEXT

ENCLOSURE 1
(Page 1 of 1)

ACCIDENT ANALYSES REQUIRING RE-EVALUATION IN THE EVENT OF AN INOPERABLE RCC

Rod Cluster Control Assembly Insertion Characteristics

Rod Cluster Control Assembly Misalignment

Loss of Reactor Coolant from Small Ruptured Pipes or from Cracks in Large Pipes Which Actuates the Emergency Core Cooling System

Single Rod Cluster Control Assembly Withdrawal at Full Power

Major Reactor Coolant System Pipe Ruptures (Loss of Coolant Accident)

Major Secondary Coolant System Pipe Rupture

Rupture of a Control Rod Drive Mechanism Housing (Rod Cluster Control Assembly Ejection)

FINAL PAGE

Facility:	Turkey Point	Task No:	01005014300
Task Title:	JPM: Recover from a Loss of Offsite Power	JPM No:	01005014303
K/A Reference:	062 A4.07 RO 3.1 SRO 3.1		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X
Classroom		Simulator X	Plant

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in MODE 3.
- A loss of offsite power has occurred.
- The 3A and 3B Emergency Diesel Generators are supplying their respective buses.
- Notification has been received that the System is stable and offsite power is available to the Unit 3 Startup Transformer.
- The SM has determined that offsite power should be restored to the 3A 4KV Bus.

Initiating Cues:

- 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*, has been completed up through Step 7.
- The Unit Supervisor directs you to restore offsite power to the 3A 4KV Bus and shutdown the 3A EDG per 3-ONOP-004.1, starting with Step 8.

Rec'd 10/5/11

Task Standard:

- The 3A 4KV Bus is energized from offsite power and the 3A EDG is shutdown.

Required Materials:

- 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*
- SYNC PLUG

References:

- 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*

General References:

- None

Time Critical Task: No

Validation Time: 20 minutes

SIMULATOR SETUP

_____ 1. Reset to IC-192, or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time:** _____

STEP 1	Obtain required materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*, and a Sync Plug.	
CUE	Provide Applicant with a copy of 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*, marked up through Step 7, and a Sync Plug.	
COMMENT		

NOTE	**CAUTION** *When the Startup Transformer breaker is closed, the EDG load will drop to zero. To prevent potential damage to the EDG, the EDG output breaker should be opened as soon as the Startup Transformer is verified to be carrying 4KV bus load.*	
STEP 2 √	**Synchronize Unit 3 Startup Transformer To 3A 4KV Bus.** Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to ON. (3-ONOP-004.1, Step 8 and Step 8.a)	SAT _____ UNSAT _____
STANDARD	Applicant inserts the sync plug in S/U TRANSFORMER SYNC TO 3A KV BUS 3AA05 and rotates the control switch clockwise to the ON position.	
CUE		
COMMENT	**EVLAUATOR NOTE:** Applicant may check voltage on all three phases.	

STEP 3	Verify running voltage matched incoming voltage. (3-ONOP-004.1, Step 8.b)	SAT _____ UNSAT _____
STANDARD	Applicant observes the RUNNING VOLTS and INCOMING VOLTS meters and notes that they are approximately equal.	
CUE		
COMMENT		

STEP 4	Verify synchroscope – ROTATING SLOWLY IN FAST DIRECTION. (3-ONOP-004.1, Step 8.c)	SAT _____ UNSAT _____
STANDARD	Applicant may adjust EDG speed using the 3A Diesel Generator Speed Changer to achieve a satisfactory rate of rotation in the FAST direction.	
CUE		
COMMENT		

STEP 5 √	**WHEN** synchroscope pointer reaches 12 o'clock position, **THEN** close Startup Transformer 3A 4KV Bus Supply, 3AA05 (3-ONOP-004.1, Step 8.d)	
STANDARD	Applicant places the control switch for START-UP XFMR 3A 4KV BUS SUPPLY 3AA05, to the CLOSE position and releases the switch. Observes the green OPEN light is OFF and the red CLOSE light is LIT. Also observes that the red flag is showing.	
CUE		
COMMENT	**EVALUATOR NOTE:** SEQUENCER 3A TROUBLE (X 1/3) will actuate.	

STEP 6	Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to OFF **AND** remove handle. (3-ONOP-004.1, Step 8.e)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the S/U TRANSFORMER SYNC TO 3A KV BUS 3AA05 control switch counterclockwise to the OFF position Applicant removes the sync plug.	
CUE		
COMMENT		

STEP 7 √	**Shutdown 3A Emergency Diesel Generator** Open 3A Emergency Diesel to 3A 4KV Bus, 3AA20. (3-ONOP-004.1, Step 9 and Step 9.a)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the A EDG TO 3A 4KV BUS control switch counterclockwise to the TRIP position. Note the green OPEN light is ON and the red CLOSE light is ON.	
CUE		
COMMENT		

STEP 8 √	Adjust 3A Emergency Diesel Generator frequency to 60 Hz using Diesel Generator Speed Changer. (3-ONOP-004.1, Step 9.b)	SAT _____ UNSAT _____
STANDARD	Applicant positions the A DIESEL GEN SPEED CHANGER to adjust the 3A EDG frequency to between 59.4 and 60.6 Hz on the A DIESEL HERTZ meter.	
CUE		
COMMENT	**EVALUATOR NOTE:** Tolerance based on 3-OSP-023 allowances.	

STEP 9 √	Adjust 3A Emergency Diesel Generator voltage to 4160 volts using Diesel Generator Voltage Regulator. (3-ONOP-004.1, Step 9.c)	SAT _____ UNSAT _____
STANDARD	Applicant positions the A DIESEL GEN VOLTAGE REGULATOR switch to adjust the 3A EDG voltage to approximately between 3950 and 4370 volts on the A DIESEL KILOVOLTS meter.	
CUE		
COMMENT	**EVALUATOR NOTE:** Tolerance based on 3-OSP-023 allowances.	

STEP 10 √	Stop 3A Emergency Diesel Generator by placing the Diesel Generator 3A Normal Start/Normal Stop switch in NORMAL STOP (3-ONOP-004.1, Step 9.c)	SAT _____ UNSAT _____
STANDARD	Applicant positions the 3A DIESEL GENERATOR NORMAL STOP/NORMAL START switch counterclockwise to the NORMAL STOP position and allows the switch to spring-return to the mid position. Applicant notes that 3A EDG frequency and voltage drop to zero.	
CUE	**TERMINATING CUE:** **Inform the Applicant that another operator will restore the EDG to a normal lineup. This completes the JPM.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01005014303

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in MODE 3.
- A loss of offsite power has occurred.
- The 3A and 3B Emergency Diesel Generators are supplying their respective buses.
- Notification has been received that the System is stable and offsite power is available to the Unit 3 Startup Transformer.
- The SM has determined that offsite power should be restored to the 3A 4KV Bus.

Initiating Cues:

- 3-ONOP-004.1, *System Restoration Following a Loss of Offsite Power*, has been completed up through Step 7.
- The Unit Supervisor directs you to restore offsite power to the 3A 4KV Bus and shutdown the 3A EDG per 3-ONOP-004.1, starting with Step 8.

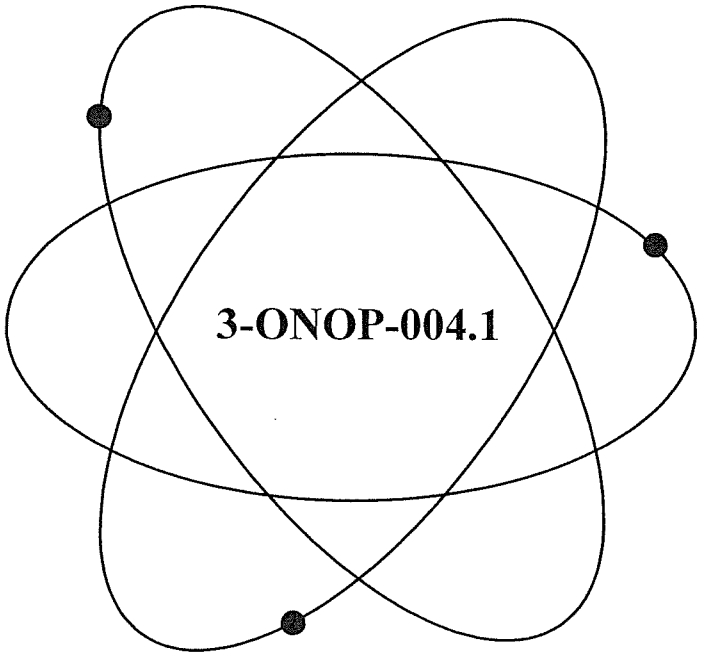
Acknowledge to the examiner when you are ready to begin.

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

Florida Power & Light Company

Turkey Point Nuclear Plant

Unit 3



3-ONOP-004.1

Title:

System Restoration Following Loss of Offsite Power

(Continuous Use)

Safety Related Procedure

Responsible Department:	Operations
Revision Approval Date:	9/4/07

RTSs *91-1561P, 91-2743P, 93-0173P, 93-1679P, 95-0234P, 95-0498P, 95-0918P, 97-1375P, 01-0529P, 01-0695P, 03-0204P, 04-0967P, 07-0478P*

PC/M *87-258, 87-263, 87-264, 87-265, 94-059, 01-009*

W97:DH/ev/mrg/ln

Rec'd 10/5/11

LIST OF EFFECTIVE PAGES

Page	Revision Date	Page	Revision Date
1	09/04/07	21	09/04/07
2	09/04/07	22	09/04/07
3	09/04/07	23	09/04/07
4	09/04/07	24	09/04/07
5	09/04/07	25	09/04/07
6	09/04/07	26	09/04/07
7	09/04/07	27	09/04/07
8	09/04/07	28	09/04/07
9	09/04/07	29	09/04/07
10	09/04/07	30	09/04/07
11	09/04/07	31	09/04/07
12	09/04/07	32	09/04/07
13	09/04/07	33	09/04/07
14	09/04/07	34	09/04/07
15	09/04/07	35	09/04/07
16	09/04/07	36	09/04/07
17	09/04/07		
18	09/04/07		
19	09/04/07		
20	09/04/07		

1.0 PURPOSE

This procedure provides instructions to be followed in order to restore electrical systems to a normal configuration when offsite power has been lost and subsequently restored.

2.0 SYMPTOMS OR ENTRY CONDITIONS

2.1 System Dispatcher has notified Operations personnel that offsite power is stable and the Unit 3 Startup Transformer has been reenergized by offsite power.

2.2 System Dispatcher has notified Operations personnel that offsite power is stable and the 3C Transformer has been reenergized by offsite power.

3.0 REFERENCES/RECORDS REQUIRED/COMMITMENT DOCUMENTS

3.1 References

3.1.1 Technical Specifications

1. Section 3/4.8.1, AC Sources
2. Section 3/4.8.3, Onsite Power Distribution

3.1.2 FSAR

1. Section 8.2, Emergency Power
2. Section 14.1.12, Loss of A.C. Power

3.1.3 Plant Drawings

1. 5610-E-855, Breaker List
2. 5610-T-E-1591, Sheet 1 - Electrical Distribution
3. 5610-T-L1, Sheet 2 - Reactor Trip Signals
4. 5610-T-L1, Sheet 6C - Generator Details
5. 5610-T-L1, Sheet 12A - Emergency Load Sequencer
6. 5613-T-L1, Sheet 13 - Bus 3A Loss of Voltage and Bus Stripping
7. 5613-T-L1, Sheet 13A - Bus 3B Loss of Voltage and Bus Stripping

3.1.4 Plant Procedures

1. 3-ONOP-004.2, LOSS OF 3A 4KV BUS
2. 3-ONOP-004.3, LOSS OF 3B 4KV BUS
3. 3-ONOP-004.4, LOSS OF 3C 4KV BUS
4. 3-ONOP-004.5, LOSS OF 3D 4KV BUS
5. 3-ONOP-041.7, SHUTDOWN LOCA [MODE 3 (LESS THAN 1000 PSIG) OR 4]
6. 3-ONOP-041.8, SHUTDOWN LOCA [MODE 5 OR 6]
7. 3-ONOP-092.3, STARTUP TRANSFORMER MALFUNCTION
8. 3-ONOP-092.4, C BUS TRANSFORMER MALFUNCTION
9. 3-OP-005, 4160 VOLT BUSES A, B AND D
10. 3-OP-006, 480 VOLT SWITCHGEAR SYSTEM
11. 3-OP-007, 480 VOLT MOTOR CONTROL CENTER
12. 3-OP-023, EMERGENCY DIESEL GENERATOR
13. 3-OP-030, COMPONENT COOLING WATER SYSTEM

3.1.5 Plant Change/Modifications

1. PC/M 87-258, Load Center 3H, MCC 3D and Transfer of Loads
2. PC/M 87-263, New EDG Installation
3. PC/M 87-264, EDG 3B/4B, EDG 3A/4A and New EDG Building Tie-Ins
4. PC/M 87-265, Swing Switchgear 3D and Transfer of ICW & CCW 3C Pumps
5. PC/M 94-059, Diesel Engine Driver for Standby Steam Generator Feedwater Pump P82B

3.1.6 Miscellaneous

1. JPN-PTN-SEMP-93-010, Turkey Point Units 3 & 4 Safety Evaluation for Control Building Annex Cooling

2. JPN-PTN-SENP-95-026, Safety Evaluation for CCW Flow Balance and Post–Accident Alignment Requirements to Support Thermal Up-Rate. (LER 250/95-006)

3.2 Records Required

3.2.1 None

3.3 Commitment Documents

3.3.1 JPN-PTN-SENP-95-026, Safety Evaluation for CCW Flow Balance and Post–Accident Alignment Requirements to Support Thermal Up-Rate. (LER 250/95-006)

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

CCW System load requirements for the EOP network, 3-ONOP-041.7, SHUTDOWN LOCA [MODE 3 (LESS THAN 1000PSIG) OR MODE 4] and 3-ONOP-041.8, SHUTDOWN LOCA [MODE 5 OR 6], SHALL NOT exceed the limits specified in 3-OP-030, COMPONENT COOLING WATER SYSTEM.

NOTE

Momentary High Flow due to swapping CCW Pumps is acceptable.

1	**Verify SI - RESET**	
2	**Check Unit 3 Startup Transformer Potential White Light On VPA - ON**	Go to Step 65.
3	**Check Unit 3 Startup Transformer Lockout Relay - RESET**	Perform the following: a. Try to determine and correct cause of Unit 3 startup transformer lockout relay actuation using 3-ONOP-092.3, STARTUP TRANSFORMER MALFUNCTION. b. **WHEN** the Unit 3 Startup Transformer Lockout Relay is reset, **THEN** return to Step 4. c. Go to Step 65.
4	**Check Startup Transformer 3A 4KV Bus Supply, 3AA05 - OPEN**	Go to Step 35.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	**Check If Offsite Power Should Be Restored To 3A 4KV Bus At This Time**	
	a. Consult with the Shift Manager to determine desired order of offsite power restoration	
	* 3A 4KV bus followed by 3B 4KV bus **OR** * 3B 4KV bus followed by 3A 4KV bus	
	b. Check desired order of offsite power restoration - 3A 4KV BUS FOLLOWED BY 3B 4KV BUS	b. Go to Step 35.
6	**Check 3A 4KV Bus - ENERGIZED**	Go to Step 28.
7	**Check 3A 4KV Bus - ENERGIZED BY 3A EMERGENCY DIESEL GENERATOR**	Go to Step 11.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

When the Startup Transformer breaker is closed, the EDG load will drop to zero. To prevent potential damage to the EDG, the EDG output breaker should be opened as soon as the Startup Transformer is verified to be carrying 4KV bus load.

8 **Synchronize Unit 3 Startup Transformer To 3A 4KV Bus**

a. Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to ON

b. Verify running voltage matched incoming voltage

b. Adjust 3A Diesel Generator Voltage Regulator.

c. Verify synchroscope - ROTATING SLOWLY IN FAST DIRECTION

c. Adjust 3A Diesel Generator Speed Changer.

d. **WHEN** synchroscope pointer reaches 12 o'clock position, **THEN** close Startup Transformer 3A 4KV Bus Supply, 3AA05

d. **IF** Startup Transformer 3A 4KV Bus Supply, 3AA05, can **NOT** be closed, **THEN** perform the following:

1) Place Startup Transformer Sync To 3A 4KV Bus 3AA05 to OFF **AND** remove handle.

2) Direct Electrical Maintenance to determine cause of breaker failure.

3) Go to Step 35.

e. Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to OFF **AND** remove handle

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
9	**Shutdown 3A Emergency Diesel Generator**	
	a. Open 3A Emergency Diesel to 3A 4KV Bus, 3AA20	a. Locally open breaker.
	b. Adjust 3A Emergency Diesel Generator frequency to 60 Hz using Diesel Generator Speed Changer	b. Locally adjust frequency.
	c. Adjust 3A Emergency Diesel Generator voltage to 4160 volts using Diesel Generator Voltage Regulator	c. Locally adjust voltage.
	d. Stop 3A Emergency Diesel Generator by placing the Diesel Generator 3A Normal Start/Normal Stop switch in NORMAL STOP	d. Locally stop 3A Emergency Diesel Generator.
	e. Place 3A Emergency Diesel Generator in normal standby alignment using 3–OP–023, Emergency Diesel Generator	
10	**Go To Step 35**	
11	**Check 3B 4KV Bus - ENERGIZED**	Perform the following: a. Try to energize 3B 4KV bus using one of the following: * 3-ONOP-004.3, LOSS OF 3 4KV BUS **OR** * 3-OP-005, 4160 VOLT BUSES A, B, AND D b. **IF** 3B 4KV bus can **NOT** be energized, **THEN** go to Step 65.
12	**Check Intake Cooling Water Headers - TIED TOGETHER**	Perform the following: a. **IF** both Intake Cooling Water Headers are intact, **THEN** tie headers together. b. **IF** Intake Cooling Water Headers can **NOT** be tied together, **THEN** go to Step 35.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
13	**Check CCW Headers - TIED TOGETHER**	Perform the following: a. **IF** both CCW headers are intact, **THEN** tie headers together. b. **IF** CCW headers can **NOT** be tied together, **THEN** go to Step 35.
14	**Direct Operator To Place 3A Emergency Diesel Master Control Switch To OFF**	
15	**Check 3D 4KV Bus - ALIGNED TO 3A 4KV BUS** • Supply From 4KV Bus 3A, 3AD01 - CLOSED • Feeder To 4KV Bus 3D, 3AA17 - CLOSED	Go to Step 20.
16	**Check Station Blackout Breaker, 3AD07 - OPEN**	Perform the following: a. **IF** Unit 3 is supplying power to Unit 4 4KV buses using station blackout tie line, **THEN** go to Step 33. b. Start 3B Intake Cooling Water Pump. c. Start 3B Component Cooling Water Pump. d. **IF** either pump can **NOT** be started, **THEN** go to Step 33.
17	**Check 3C Intake Cooling Water Pump - STOPPED**	Perform the following: a. Start 3B Intake Cooling Water Pump. b. **IF** 3B Intake Cooling Water Pump can **NOT** be started, **THEN** start 3A Intake Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 33. c. Stop 3C Intake Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

When only one component cooling water pump is running, a MAXIMUM of TWO emergency containment coolers are allowed to be running.

18 **Check 3C Component Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3B Component Cooling Water Pump.

b. **IF** 3B Component Cooling Water Pump can **NOT** be started, **THEN** start 3A Component Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 33.

c. Stop 3C Component Cooling Water Pump.

19 **Check If 3D 4KV Bus Should Be Aligned To 3B 4KV Bus**

a. Check Station Blackout Breaker, 3AD07 – OPEN

a. Go to Step 20.

b. Open Feeder To 4KV Bus 3D, 3AA17

c. Open Supply From 4KV Bus 3A, 3AD01

d. Close Supply From 4KV Bus 3B, 3AD06

e. Close Feeder To 4KV Bus 3D, 3AB19

20 **Check 3A Intake Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3B Intake Cooling Water Pump.

b. **IF** 3B Intake Cooling Water Pump can **NOT** be started, **THEN** start 3C Intake Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 33.

c. Stop 3A Intake Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

When only one Component Cooling Water Pump is running, a MAXIMUM of TWO Emergency Containment Coolers are allowed to be running.

21 **Check 3A Component Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3B Component Cooling Water Pump.

b. **IF** 3B Component Cooling Water Pump can **NOT** be started, **THEN** start 3C Component Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 33.

c. Stop 3A Component Cooling Water Pump.

22 **Check Charging Pumps**

- 3B Charging Pump – RUNNING
- 3A Charging Pump – STOPPED
- 3C Charging Pump - STOPPED

Perform the following:

a. Start 3B Charging Pump.

b. **IF** 3B Charging Pump can **NOT** be started, **THEN** go to Step 33.

c. Stop 3A Charging Pump.

d. Stop 3C Charging Pump.

23 **Check 3A RHR Pump - STOPPED**

Perform the following:

a. Start 3B RHR pump and align valves as directed by the Shift Manager to allow stopping of 3A RHR pump.

b. Consult with the Shift Manager to determine if 3A RHR pump can be stopped.

c. **IF** 3A RHR pump can **NOT** be stopped, **THEN** go to Step 33.

d. Stop 3A RHR pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

Injection to the RCS from at least two High-Head SI Pumps is required to be maintained during the injection phase of a large loss of reactor coolant accident.

24	**Check 3A High-Head SI Pump - STOPPED**	Perform the following: a. Start 3B, 4A, or 4B High-Head SI Pump(s) **AND** align valves as directed by the Shift Manager to allow stopping of 3A High-Head SI Pump. b. Consult with the Shift Manager to determine if 3A High-Head SI Pump can be stopped. c. **IF** 3A High-Head SI Pump can **NOT** be stopped, **THEN** go to Step 33. d. Stop 3A High-Head SI Pump.
25	**Check 3A Turbine Plant Cooling Water Pump - STOPPED**	Perform the following: a. Start 3B Turbine Plant Cooling Water Pump. b. **IF** 3B Turbine Plant Cooling Water Pump can **NOT** be started, **THEN** consult with the Shift Manager to determine if 3A Turbine Plant Cooling Water Pump can be stopped. c. **IF** 3A Turbine Plant Cooling Water Pump can **NOT** be stopped, **THEN** go to Step 33. d. Stop 3A Turbine Plant Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

When 3A 4KV bus is deenergized, the bearing oil lift pump will stop.

26 **Check Main Turbine Components**

a. Check seal oil system - IN SERVICE

a. Go to Step 26e.

b. Locally start Backup Air Side Seal Oil Pump

c. Check Auxiliary Oil Pump - STOPPED

c. Perform the following:

1) Start Emergency Bearing Oil Pump.

2) Stop Auxiliary Oil Pump.

d. Check turning gear - STOPPED

d. Determine if main turbine turning gear can be stopped.

e. Verify main turbine - READY FOR LOSS OF 3A 4KV BUS

e. **IF** loss of power to 3A 4KV bus will result in damage to main turbine, **THEN** go to Step 33.

CAUTIONS

- ***Continuing with this procedure without defeating the 3A Emergency Diesel Auto Start capability by placing the Master Control Switch to OFF (Step 14) will result in a restart of the EDG.***
- ***Steps 27 and 28 will deenergize 3A 4KV bus.***

27 **Check Station Blackout Breaker, 3AD07 - OPEN**

IF 3A 4KV bus is being energized using station blackout tie line, **THEN** perform the following:

a. Open Station Blackout Breaker, 3AD07.

b. Direct Unit 4 Reactor Operator to open Station Blackout Breaker, 4AD07.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
28	**Transfer 3A 4KV Bus To Unit 3 Startup Transformer**	
	a. Open or verify open all alternate supply breakers to 3A 4KV bus • 3AA02, Auxiliary Transformer 3A 4KV Bus Supply • 3AA09, 3A 4KV Bus Tie to 3B or 3C 4KV Bus • 3AA20, 3A Emergency Diesel to 3A 4KV Bus • 3AA22, 3A 4KV Bus Emergency Tie to Unit 4 Startup Transformer	
	b. Verify 3A 4KV bus stripping using ATTACHMENT 1	
	c. Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to ON	
	d. Close Startup Transformer 3A 4KV Bus Supply, 3AA05	d. **IF** Startup Transformer 3A 4KV Bus Supply, 3AA05, can **NOT** be closed, **THEN** perform the following: 1) Place Startup Transformer Sync To 3A 4KV Bus 3AA05 to OFF **AND** remove handle. 2) Direct Electrical Maintenance to determine cause of breaker failure. 3) Try to reenergize 3A 4KV bus using 3-ONOP-004.2, LOSS OF 3A 4KV BUS, while continuing with this procedure. 4) Go to Step 33.
	e. Place Startup Transformer Sync to 3A 4KV Bus 3AA05 to OFF **AND** remove handle	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
29	**Reenergize 3A Load Center** a. Close 3A Load Center breaker, 3AA08 b. Check 3A Load Center - ENERGIZED	b. Perform the following: 1) Locally verify 3A Feed From 3A 4KV Bus breaker, 30102 - CLOSED. 2) **IF** 3A Load Center can **NOT** be reenergized, **THEN** consult with the Shift Manager to determine if 3A Load Center should be reenergized from opposite train source using 3 OP-006, 480 Volt Switchgear System.
30	**Reenergize 3C Load Center** a. Close 3C Load Center breaker, 3AA14 b. Check 3C Load Center - ENERGIZED	b. Perform the following: 1) Locally verify 3C Feed From 3A 4KV Bus breaker, 30302 - CLOSED. 2) **IF** 3C Load Center can **NOT** be reenergized, **THEN** consult with the Shift Manager to determine if 3C Load Center should be reenergized from opposite train source using 3-OP-006, 480 Volt Switchgear System.
31	**Check 3H Load Center - ALIGNED TO AN ENERGIZED LOAD CENTER**	Manually align 3H Load Center to an energized load center.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTIONS

- ***CCW System loads for the EOP network, 3-ONOP-041.7, Shutdown LOCA [Mode 3 (Less than 1000 PSIG) or Mode 4] and 3-ONOP-041.8, Shutdown LOCA [Mode 5 or 6], shall not exceed the limits specified in 3–OP–030, COMPONENT COOLING WATER SYSTEM.***
- ***Ensuring the operation of Spent Fuel Pit cooling should be given a high priority during restoration from a Loss of Offsite Power.***

NOTE

If any component powered from a deenergized motor control center must be started, the affected motor control center needs to be reenergized using 3-OP-007, 480 VOLT MOTOR CONTROL CENTERS.

32 **Restart Components Supplied By 3A 4KV Bus As Directed By The Shift Manager**

* 3A Intake Cooling Water Pump
* 3A Component Cooling Water Pump
* 3A High-head SI Pump
* 3A Residual Heat Removal Pump
* 3A Turbine Plant Cooling Water Pump
* Auxiliary Oil Pump
* Bearing Oil Lift Pumps
* Main Turbine Turning Gear
* SFP Cooling Water Pump
* SFP Exhaust Fan
* Notify Chemistry to verify proper operation of the plant SPING units
* Other plant equipment required to stabilize unit operation as determined by the Shift Manager

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
33	**Locally Verify The Following Breakers - OPEN, RACKED OUT, AND LOCKED** * 3A 4KV Bus Emergency Tie to Unit 4 Startup Transformer, 3AA22 * 3A 4KV Bus Tie to 3B or 3C 4KV Bus, 3AA09	
34	**Direct Operator To Place 3A Emergency Diesel Master Control Switch To NORMAL**	
35	**Check Startup Transformer 3B 4KV Bus Supply, 3AB05 - OPEN**	Go to Step 64.
36	**Check 3B 4KV Bus - ENERGIZED**	Go to Step 57.
37	**Check 3B 4KV Bus - ENERGIZED BY 3B EMERGENCY DIESEL GENERATOR**	Go to Step 41.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

When the Startup Transformer breaker is closed, the EDG load will drop to zero. To prevent potential damage to the EDG, the EDG output breaker should be opened as soon as the Startup Transformer is verified to be carrying 4KV bus load.

38 **Synchronize Unit 3 Startup Transformer To 3B 4KV Bus**

a. Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to ON

b. Verify running voltage matched incoming voltage

b. Adjust 3B Diesel Generator Voltage Regulator.

c. Verify synchroscope - ROTATING SLOWLY IN FAST DIRECTION

c. Adjust 3B Diesel Generator Speed Changer.

d. **WHEN** synchroscope pointer reaches 12 o'clock position, **THEN** close Startup Transformer 3B 4KV Bus Supply, 3AB05

d. **IF** Startup Transformer 3B 4KV Bus Supply, 3AB05, can **NOT** be closed, **THEN** perform the following:

1) Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to OFF **AND** remove handle.

2) Direct Electrical Maintenance to determine cause of breaker failure.

3) Go to Step 64.

e. Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to OFF **AND** remove handle

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
39	**Shutdown 3B Emergency Diesel Generator**	
	a. Open 3B Emergency Diesel to 3B 4KV Bus, 3AB20	a. Locally open breaker.
	b. Adjust 3B Emergency Diesel Generator frequency to 60 Hz using Diesel Generator Speed Changer	b. Locally adjust frequency.
	c. Adjust 3B Emergency Diesel Generator voltage to 4160 volts using Diesel Generator Voltage Regulator	c. Locally adjust voltage.
	d. Stop 3B Emergency Diesel Generator by placing the Diesel Generator 3B Normal Start/Normal Stop switch in NORMAL STOP	d. Locally stop 3B Emergency Diesel Generator.
	e. Place 3B Emergency Diesel Generator in normal standby alignment using 3–OP–023, Emergency Diesel Generator	
40	**Go To Step 64**	
41	**Check 3A 4KV Bus - ENERGIZED**	Perform the following: a. Try to energize 3A 4KV bus using one of the following: * 3-ONOP-004.2, LOSS OF 3A 4KV BUS **OR** * 3-OP-005, 4160 Volt Buses A, B, and D b. **IF** 3A 4KV bus can **NOT** be energized, **THEN** go to Step 64.
42	**Check Intake Cooling Water Headers- TIED TOGETHER**	Perform the following: a. **IF** both intake cooling water headers are intact, **THEN** tie headers together. b. **IF** intake cooling water headers can **NOT** be tied together, **THEN** go to Step 64.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
43	**Check CCW Headers - TIED TOGETHER**	Perform the following: a. **IF** both CCW headers are intact, **THEN** tie headers together. b. **IF** CCW headers can **NOT** be tied together, **THEN** go to Step 64.
44	**Direct Operator To Place 3B Emergency Diesel Master Control Switch To OFF**	
45	**Check 3D 4KV Bus - ALIGNED TO 3B 4KV BUS** • Supply from 4KV Bus 3B, 3AD06 - CLOSED • Feeder to 4KV Bus 3D, 3AB19 - CLOSED	Go to Step 50.
46	**Check Station Blackout Breaker, 3AD07 - OPEN**	Perform the following: a. **IF** Unit 4 4KV buses are being supplied from Unit 3 using station blackout tie line, **THEN** go to Step 62. b. Start 3A Intake Cooling Water Pump. c. Start 3A Component Cooling Water Pump. d. **IF** either pump can **NOT** be started, **THEN** go to Step 62.
47	**Check 3C Intake Cooling Water Pump-STOPPED**	Perform the following: a. Start 3A Intake Cooling Water Pump. b. **IF** 3A Intake Cooling Water Pump can **NOT** be started, **THEN** start 3B Intake Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 62. c. Stop 3C Intake Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

When only one Component Cooling Water Pump is running, a MAXIMUM of TWO Emergency Containment Coolers are allowed to be running.

48 **Check 3C Component Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3A Component Cooling Water Pump.

b. **IF** 3A Component Cooling Water Pump can **NOT** be started, **THEN** start 3B Component Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 62.

c. Stop 3C Component Cooling Water Pump.

49 **Check If 3D 4KV Bus Should Be Aligned To 3A 4KV Bus**

a. Check Station Blackout Breaker, 3AD07 - OPEN

a. Go to Step 50.

b. Open Feeder to 4KV Bus 3D, 3AB19

c. Open Supply from 4KV Bus 3B, 3AD06

d. Close Supply from 4KV Bus 3A, 3AD01

e. Close Feeder to 4KV Bus 3D, 3AA17

50 **Check 3B Intake Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3A Intake Cooling Water Pump.

b. **IF** 3A Intake Cooling Water Pump can **NOT** be started, **THEN** start 3C Intake Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 62.

c. Stop 3B Intake Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

When only one Component Cooling Water Pump is running, a MAXIMUM of TWO Emergency Containment Coolers are allowed to be running.

51 **Check 3B Component Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3A Component Cooling Water Pump.

b. **IF** 3A Component Cooling Water Pump can **NOT** be started, **THEN** start 3C Component Cooling Water Pump. **IF** neither pump can be started, **THEN** go to Step 62.

c. Stop 3B Component Cooling Water Pump.

52 **Check Charging Pumps**

- 3A Charging Pump – RUNNING
- 3B Charging Pump – STOPPED
- 3C Charging Pump - STOPPED

Perform the following:

a. Start 3A Charging Pump.

b. **IF** 3A Charging Pump can **NOT** be started, **THEN** go to Step 62.

c. Stop 3B Charging Pump.

d. Stop 3C Charging Pump.

53 **Check 3B RHR Pump - STOPPED**

Perform the following:

a. Start 3A RHR pump and align valves as directed by the Shift Manager to allow stopping of 3B RHR pump.

b. Consult with the Shift Manager to determine if 3B RHR pump can be stopped.

c. **IF** 3B RHR pump can **NOT** be stopped, **THEN** go to Step 62.

d. Stop 3B RHR pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

Injection into the RCS from at least two High-Head SI Pumps is required to be maintained during the injection phase of a large loss of reactor coolant accident.

54 **Check 3B High-Head SI Pump - STOPPED**

Perform the following:

a. Start 3A, 4A, or 4B High-Head SI Pump(s) **AND** align valves as directed by the Shift Manager to allow stopping of 3B High-Head SI Pump.

b. Consult with the Shift Manager to determine if 3B High-Head SI Pump can be stopped.

c. **IF** 3B High-Head SI Pump can **NOT** be stopped, **THEN** go to Step 62.

d. Stop 3B High-Head SI Pump.

55 **Check 3B Turbine Plant Cooling Water Pump - STOPPED**

Perform the following:

a. Start 3A Turbine Plant Cooling Water Pump.

b. **IF** 3A Turbine Plant Cooling Water Pump can **NOT** be started, **THEN** consult with the Shift Manager to determine if 3B Turbine Plant Cooling Water Pump can be stopped.

c. **IF** 3B Turbine Plant Cooling Water Pump can **NOT** be stopped, **THEN** go to Step 62.

d. Stop 3B Turbine Plant Cooling Water Pump.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTIONS

- ***Continuing with this procedure without defeating 3B Emergency Diesel Auto Start capability as outlined in Step 44 will result in a restart of the EDG.***
- ***Steps 56 and 57 will deenergize 3B 4KV bus.***

56	**Check Station Blackout Breaker, 3AD07 - OPEN**	**IF** 3B 4KV bus is being energized using station blackout tie line, **THEN** perform the following: a. Open Station Blackout Breaker, 3AD07. b. Direct Unit 4 Reactor Operator to open Station Blackout Breaker, 4AD07.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
57	**Transfer 3B 4KV Bus To Unit 3 Startup Transformer**	
	a. Open or verify open all alternate supply breakers to 3B 4KV bus • 3AB02, Auxiliary Transformer 3A 4KV Bus Supply • 3AB20, 3B Emergency Diesel to 3B 4KV Bus • 3AB22, 3B 4KV Bus Tie to 3A or 3C 4KV Bus	
	b. Verify 3B 4KV bus stripping using ATTACHMENT 2	
	c. Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to ON	
	d. Close Startup Transformer 3B 4KV Bus Supply, 3AB05	d. **IF** Startup Transformer 3B 4KV Bus Supply, 3AB05, can **NOT** be closed, **THEN** perform the following: 1) Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to OFF **AND** remove handle. 2) Direct Electrical Maintenance to determine cause of breaker failure. 3) Try to energize 3B 4KV bus using 3-ONOP-004.3, LOSS OF 3B 4KV BUS, while continuing with this procedure. 4) Go to Step 62.
	e. Place Startup Transformer Sync to 3B 4KV Bus 3AB05 to OFF **AND** remove handle	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
58	**Reenergize 3B Load Center** a. Close 3B Load Center Breaker, 3AB09 b. Check 3B Load Center - ENERGIZED	b. Perform the following: 1) Locally verify 3B Feed from 3B 4KV Bus breaker, 30210 - CLOSED. 2) **IF** 3B Load Center can **NOT** be reenergized, **THEN** consult with the Shift Manager to determine if 3B Load Center should be reenergized from opposite train source using 3–OP–006, 480 VOLT SWITCHGEAR SYSTEM.
59	**Reenergize 3D Load Center** a. Close 3D Load Center Breaker, 3AB14 b. Check 3D Load Center - ENERGIZED	b. Perform the following: 1) Locally verify 3D Feed from 3B 4KV Bus breaker, 30410 - CLOSED. 2) **IF** 3D Load Center can **NOT** be reenergized, **THEN** consult with the Shift Manager to determine if 3D Load Center should be reenergized from opposite train source using 3–OP–006, 480 VOLT SWITCHGEAR SYSTEM.
60	**Check 3H Load Center - ALIGNED TO AN ENERGIZED LOAD CENTER**	Manually align 3H Load Center to an energized load center.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

CCW System load requirements for the EOP network, 3-ONOP-041.7, SHUTDOWN LOCA [MODE 3 (LESS THAN 1000 PSIG] OR MODE 4] and 3-ONOP-041.8, SHUTDOWN LOCA [MODE 5 OR 6], SHALL NOT exceed the limits specified in 3-OP-030, COMPONENT COOLING WATER SYSTEM.

NOTE

If any component powered from a deenergized motor control center must be started, the affected motor control center needs to be reenergized using 3-OP-007, 480 VOLT MOTOR CONTROL CENTERS.

61 **Restart Components Supplied By 3B 4KV Bus As Directed By The Shift Manager**

a. Safety Related Components

- 3B Intake Cooling Water Pump
- 3B Component Cooling Water Pump
- 3B High-head SI Pump
- 3B Residual Heat Removal Pump
- 3B Turbine Plant Cooling Water Pump
- Verify one Auxiliary Building Exhaust Fan - RUNNING
- SFP Exhaust Fan

b. HVAC Equipment

- Computer Room Chiller
- Battery Room Air Conditioner - E16E (30609)

c. Other plant equipment required to stabilize unit operation as determined by the Shift Manager

d. Notify Chemistry to verify proper operation of the plant SPING units

a. Sequencer failure may have occurred; perform the following:

1) Place the Sequencer XS-1 Enable key switch to OFF.

2) Attempt to close the breaker.

62 **Locally Verify 3B 4KV Bus Tie To 3A Or 3C 4KV Bus 3AB22 -OPEN, RACKED OUT, AND LOCKED**

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
63	**Direct Operator To Place 3B Emergency Diesel Master Control Switch To NORMAL**	
64	**Check Startup Transformer 3A 4KV Bus Supply, 3AA05 - CLOSED**	Perform the following: a. **IF** previous attempts to close Startup Transformer 3A 4KV Bus Supply, 3AA05, in Steps 8 or 28 were **NOT** successful, **THEN** go to Step 65. b. **IF** 3A 4KV bus is deenergized, **THEN** return to Step 28. c. **IF** 3A 4KV bus is energized by a source other than 3A Emergency Diesel, **THEN** return to Step 11. d. **IF** 3A 4KV bus is energized by 3A Emergency Diesel, **THEN** return to Step 8.
65	**Check 3C Bus Supply From 3C Transformer, 3AC16 - OPEN**	Go to Step 76.
66	**Check Tie Breakers To 3A and 3B 4KV Buses - OPEN** • 3A 4KV Bus Tie to 3B or 3C 4KV Bus, 3AA09 • 3B 4KV Bus Tie to 3A or 3C 4KV Bus, 3AB22	Go to Step 76.
67	**Check 3C 4KV Bus Lockout Relay – Reset**	Perform the following: a. Direct Electrical Maintenance to determine and correct cause of 3C 4KV Bus Lockout Relay actuation. b. **WHEN** cause of 3C 4KV Bus Lockout Relay actuation has been determined and corrected, **THEN** locally reset Bus Lockout Relay. c. **WHEN** 3C 4KV Bus Lockout Relay has been reset, **THEN** do Steps 68 through 76. d. Continue with Step 76.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
68	**Check 3C Transformer Lockout Relay - RESET**	Perform the following: a. Try to determine and correct cause of 3C 4KV transformer lockout relay using 3-ONOP-092.4, C BUS TRANSFORMER MALFUNCTION b. **WHEN** cause of 3C 4KV transformer lockout relay actuation has been determined and corrected, **THEN** locally reset lockout relay. c. **WHEN** 3C 4KV transformer lockout relay has been reset, **THEN** do Steps 69 through 76. d. Continue with Step 76.
69	**Check 3C Transformer Supply Breakers - AT LEAST ONE CLOSED** • 8W118 OR • 8W154	Perform the following: a. **IF** offsite power is **NOT** available, **THEN** go to Step 76. b. **IF** offsite power is available, **THEN** locally close at least one 3C Transformer Supply Breaker: • 8W118 OR • 8W154 c. **IF** at least one 3C Transformer Supply Breaker can not be closed, **THEN** go to Step 76.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
70	**Stop Components Supplied By 3C 4KV Bus** • 3B Steam Generator Feedwater Pump • 3C Condensate Pump • A Standby Steam Generator Feedwater Pump • 3B RCP Oil Lift Pump • 3C RCP Oil Lift Pump • Water Treatment Plant • Traveling Screens	**IF** any component supplied by 3C 4KV bus can **NOT** be stopped, **THEN** go to Step 76.
71	**Deenergize Load Centers Supplied By 3C 4KV** • Open 3E Load Center Supply Breaker (Polishing Area), 3AC04 • Open 3F/3G Load Center Supply Breaker (Intake Area), 3AC11	

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
72	**Transfer 3C 4KV Bus To 3C Transformer**	
	a. Open 3C Bus Alternate Supply from 4C Transformer, 3AC01	
	b. Open 3C 4KV Bus Tie to 3A or 3B 4KV Bus, 3AC13	
	c. Locally verify all breakers on 3C 4KV Bus - OPEN	
	d. Place 3C Bus Sync from 3C Transformer, 3AC16 to ON	
	e. Close 3C Bus Supply from 3C Transformer, 3AC16	e. **IF** 3C Bus Supply from 3C Transformer, 3AC16, can **NOT** be closed, **THEN** perform the following: 1) Place 3C Bus Sync from 3C Transformer, 3AC16 to OFF **AND** remove handle. 2) Direct Electrical Maintenance to determine cause of breaker failure. 3) Try to reenergize 3C 4KV Bus using 3-ONOP-004.4, LOSS OF 3C 4KV BUS, while continuing with this procedure. 4) Go to Step 76.
	f. Place 3C Bus Sync from 3C Transformer, 3AC16 to OFF **AND** remove handle	
73	**Locally Verify No Breaker Targets Exist On 3C 4KV Bus Breakers**	**IF** any 3C 4KV bus breaker target is in, **THEN** do **NOT** energize the associated component until cause of breaker target has been determined and corrected.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
74	**Reenergize Load Centers Supplied By 3C 4KV Bus** • Close 3E Load Center Supply Breaker (Polishing Area), 3AC04 • Close 3F/3G Load Center Supply Breaker (Intake Area), 3AC11	Perform the following: a. Restore affected load center(s) to normal alignment using 3-OP-006, 480 VOLT SWITCHGEAR SYSTEM. b. **IF** any load center can **NOT** be reenergized from 3C 4KV bus, **THEN** reenergize affected load center(s) from Unit 4 using 3-OP-006, 480 VOLT SWITCHGEAR SYSTEM.

NOTE

If any component powered from a deenergize motor control center must be started, the affected motor control center needs to be reenergized using 3-OP-007, 480 VOLT MOTOR CONTROL CENTER.

75	**Restart Components Supplied By 3C 4KV Bus As Directed By The Shift Manager** • 3C Condensate Pump • 3B Steam Generator Feedwater Pump • A Standby Steam Generator Feedwater Pump • 3B RCP Oil Lift Pump • 3C RCP Oil Lift Pump • Water Treatment Plant • Other Plant equipment required to stabilize unit operation as determined by the Shift Manager	
76	**Check 3D 4KV Bus - ALIGNED TO AN ENERGIZED BUS** • 3A 4KV bus **OR** • 3B 4KV bus	Try to reenergize 3D 4KV bus using 3–ONOP-004.5, LOSS OF 3D 4KV BUS, while continuing with this procedure.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
77	**Verify All 4KV Buses - ENERGIZED BY OFFSITE POWER** • A 4KV bus • B 4KV bus • D 4KV bus • C 4KV bus	Perform the following: a. Direct System Dispatcher to continue efforts to restore offsite power to Unit 3 Startup Transformer and 3C Transformer. b. **WHEN** offsite power has been restored to Unit 3 Startup Transformer, **THEN** return to 3-ONOP-004.1, SYSTEM RESTORATION FOLLOWING LOSS OF OFFSITE POWER. c. **WHEN** offsite power has been restored to 3C Bus Transformer, **THEN** return to 3-ONOP-004.1, SYSTEM RESTORATION FOLLOWING LOSS OF OFFSITE POWER.
78	**Return To Procedure And Step In Effect**	

END OF TEXT

ATTACHMENT 1
(Page 1 of 1)

3A 4KV BUS STRIPPING

1. Verify the following breakers open:

   - 3AA22, 3A 4KV Bus Emergency Tie To Unit 4 Startup Transformer
   - 3AA09, 3A 4KV Bus Tie To 3B Or 3C 4KV Bus
   - 3AA05, Startup Transformer 3A 4KV Bus Supply
   - 3AA02, Auxiliary Transformer 3A Bus Supply
   - 3AA03, Steam Generator Feed Pump 3A
   - 3AA07, Heater Drain Pump 3A
   - 3AA21, Condensate Pump 3A
   - 3AA13, Safety Injection Pump 3A
   - 3AA15, Residual Heat Removal Pump 3A
   - 3AA12, Component Cooling Water Pump 3A
   - 3AA01, Reactor Coolant Pump 3A
   - 3AA19, Intake Cooling Water Pump 3A
   - 3AA11, Turbine Plant Cooling Water Pump 3A
   - 3AA16, Circulating Water Pump 3A1
   - 3AA18, Circulating Water Pump 3A2
   - 3AA08, 3A Load Center
   - 3AA14, 3C Load Center

2. **IF** Supply From 4KV Bus 3A, 3AD01, is open, **THEN** verify Feeder To 4KV Bus 3D, 3AA17, is open.

3. **IF** Supply From 4KV Bus 3A, 3AD01, is closed, **THEN** perform the following:

   a. **IF** Station Blackout Breaker, 3AD07, is closed, **THEN** perform the following:

      1) Open Station Blackout Breaker, 3AD07.

      2) Direct Unit 4 RCO to open Station Blackout Breaker, 4AD07.

   b. Verify breaker for Intake Cooling Water Pump 3C, 3AD05, is open.

   c. Verify breaker for Component Cooling Water Pump 3C, 3AD04, is open.

   d. **IF** breaker for Intake Cooling Water Pump 3C, 3AD05, **OR** breaker for Component Cooling Water Pump 3C, 3AD04, can **NOT** be opened, **THEN** open Feeder To 4KV Bus 3D, 3AA17, **AND** Supply From 4KV Bus 3A. 3AD01.

4. Notify Unit 3 Reactor Operator that 3A 4KV bus stripping has been completed.

ATTACHMENT 2
(Page 1 of 1)

3B 4KV BUS STRIPPING

1. Verify the following breakers open:

   - 3AB22, 3B 4KV Bus Tie To 3A Or 3C 4KV Bus
   - 3AB05, Startup Transformer 3B 4KV Bus Supply
   - 3AB02, Auxiliary Transformer 3B Bus Supply
   - 3AB10, Heater Drain Pump 3B
   - 3AB21, Condensate Pump 3B
   - 3AB12, Safety Injection Pump 3B
   - 3AB15, Residual Heat Removal Pump 3B
   - 3AB13, Component Cooling Water Pump 3B
   - 3AB01, Reactor Coolant Pump 3B
   - 3AB06, Reactor Coolant Pump 3C
   - 3AB17, Intake Cooling Water Pump 3B
   - 3AB11, Turbine Plant Cooling Water Pump 3B
   - 3AB16, Circulating Water Pump 3B1
   - 3AB18, Circulating Water Pump 3B2
   - 3AB09, 3B Load Center
   - 3AB14, 3D Load Center

2. **IF** Supply From 4KV Bus 3B, 3AD06, is open, **THEN** verify Feeder To 4KV Bus 3D, 3AA19, is open.

3. **IF** Supply From 4KV Bus 3B, 3AD06, is closed, **THEN** perform the following:

   a. **IF** Station Blackout Breaker, 3AD07, is closed, **THEN** perform the following:

      1) Open Station Blackout Breaker, 3AD07.

      2) Direct Unit 4 RCO to open Station Blackout Breaker, 4AD07.

   b. Verify breaker for Intake Cooling Water Pump 3C, 3AD05, is open.

   c. Verify breaker for Component Cooling Water Pump 3C, 3AD04, is open.

   d. **IF** breaker for Intake Cooling Water Pump 3C, 3AD05, **OR** breaker for Component Cooling Water Pump 3C, 3AD04, can **NOT** be opened, **THEN** open Feeder To 4KV Bus 3D, 3AB19, **AND** Supply From 4KV Bus 3B, 3AD06.

4. Notify Unit 3 Reactor Operator that 3B 4KV bus stripping has been completed.

FINAL PAGE

Facility:	Turkey Point	Task No:	01041003200
Task Title:	JPM: Preparation for OMS Operation	JPM No:	01041003201
K/A Reference:	010 A4.03 RO 4.0 SRO 3.8		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X

Classroom _____ Simulator X Plant _____

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3.
- The plant is being shut down to Cold Shutdown in accordance with 3-GOP-305, Hot Standby to Cold Shutdown.
- Actions in 3-GOP-305, up through Step 5.2.9, have been complete.
- 3-NOP-041.04, Overpressure Mitigating System, Section 4.1.1, is complete; up through Step 4.1.1.6.E.
- Attachment 1, OMS Valve Alignment, of 3-NOP-041.04 has been completed.
- 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test, has been completed within the past 31 days.
- 3-OSP-206.2, Quarterly Inservice Valve Testing, has been performed within the last 31 days.

Initiating Cue:

- Per 3-GOP-305, Step 5.2.10, you have been directed to complete 3-NOP-041.04, Overpressure Mitigating System, Section 4.1.1, starting with Step 4.1.1.7.

Rec'd 10/5/11

Task Standard:

- Applicant cycles MOV-3-535 and PCV-3-456 in accordance with 3-NOP-041.04, Section 4.1.1.B-E.
- Applicant initiates a manual Safety Injection within 16 minutes (see ADM-232, Time Critical Action Program, Attachment 2, Time Critical Operator Actions in the PTN PSA Model, Event ID RHFPACTSIM, Page 6 of 7) after the automatic SI setpoint of 1730 psig has been exceeded.

Required Materials:

- 3-NOP-041.04, Overpressure Mitigating System, Section 4.1.1, marked up through Step 4.1.1.6.E.

General References:

- 3-NOP-041.04, Overpressure Mitigating System
- 3-GOP-305, Hot Standby to Cold Shutdown

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 193 for JPM or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Open Lesson JPM-01041003201 and Execute.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 6. Acknowledge alarms and place simulator in FREEZE.

_____ 7. Provide the Applicant with a copy of 3-NOP-041.04, Overpressure Mitigating System.

_____ 8. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-NOP-041.04, Overpressure Mitigating System.	
CUE	Provide the Applicant with a copy of 3-NOP-041.04, Overpressure Mitigating System, marked up through Step 4.1.1.6.E.	
COMMENT		

NOTE	NOTE • OMS Loop Operability Test is required to be completed prior to placing OMS in service if NOT done within the last 31 days. • Only one loop of OMS shall be tested at a time.	
STEP 2	**PERFORM** the following in the Control Room IF OMS N2 Backup leak and functional testing was **NOT** performed within the last 31 days, THEN **PERFORM** 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test. (3-NOP-041.04, Step 4.1.1.7 and 4.1.1.7.A)	SAT _____ UNSAT _____
STANDARD	Applicant notes that, per the Initial Conditions, 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test, has been performed within 31 days.	
CUE		
COMMENT		

STEP 3	**CYCLE** MOV-3-535, PRZ PORV BLOCK VALVE, as follows: IF OMS IST Valve testing **NOT** performed within the last 31 days, THEN **PERFORM** 3-OSP-206.2, Quarterly Inservice Valve Testing. (3-NOP-041.04, Step 4.1.1.7.B and 4.1.1.7.B.(1)	SAT _____ UNSAT _____
STANDARD	Applicant notes that, per the Initial Conditions, 3-OSP-206.2, Quarterly Inservice Valve Testing, has been performed within the last 31 days.	
CUE		
COMMENT		

STEP 4 √	**CLOSE** MOV-3-535, PRZ PORV BLOCK VALVE. (3-NOP-041.04, Step 4.1.1.7.B.(2)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for MOV-3-535, PRZ PORV BLOCK VALVE, to the CLOSE position. Notes that the green CLOSE light is ON and the red OPEN light is OFF.	
CUE		
COMMENT		

NOTE	NOTE UNSAT results should be recorded in the Unit Narrative Log.	
STEP 5 √	**CYCLE** PCV-3-456, PRZ PORV, full OPEN then CLOSED. (3-NOP-041.04, Step 4.1.1.7.C.)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for PCV-3-456, PRZ PORV, to the OPEN position. Notes that the green CLOSE light is OFF and the red OPEN light is ON. Applicant places the control switch for PCV-3-456, PRZ PORV, to the CLOSE position. Notes that the green CLOSE light is ON and the red OPEN light is OFF. Applicant marks SAT in the table.	
CUE		
COMMENT		

STEP 6 √	**ENSURE** PCV-3-456, PRZ PORV, is in AUTO. (3-NOP-041.04, Step 4.1.1.7.D.)	SAT _____ UNSAT _____
STANDARD	Applicant checks that the control switch for PCV-3-456, PRZ PORV is in the AUTO (mid) position.	
CUE		
COMMENT		

STEP 7 √	**OPEN** MOV-3-535, PRZ PORV BLOCK VALVE. (3-NOP-041.04, Step 4.1.1.7.E.)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for MOV-3-535, PRZ PORV BLOCK VALVE, to the OPEN position. Notes that the green CLOSE light is OFF and the red OPEN light is ON.	
CUE		
COMMENT		

STEP 8	**CYCLE** MOV-3-536, PRZ PORV BLOCK VALVE, as follows: IF OMS IST Valve testing **NOT** performed within the last 31 days, THEN **PERFORM** 3-OSP-206.2, Quarterly Inservice Valve Testing. (3-NOP-041.04, Step 4.1.1.7.F and 4.1.1.F.(1)	SAT _____ UNSAT _____
STANDARD	Applicant notes that, per the Initial Conditions, 3-OSP-206.2, Quarterly Inservice Valve Testing, has been performed within the last 31 days.	
CUE		
COMMENT		

STEP 9 √	**CLOSE** MOV-3-536, PRZ PORV BLOCK VALVE. (3-NOP-041.04, Step 4.1.1.7.F.(2)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for MOV-3-536, PRZ PORV BLOCK VALVE, to the CLOSE position. Notes that the green CLOSE light is ON and the red OPEN light is OFF.	
CUE		
COMMENT		

NOTE	NOTE UNSAT results should be recorded in the Unit Narrative Log.	
STEP 10 √	**CYCLE** PCV-3-455C, PRZ PORV, full OPEN then CLOSED. (3-NOP-041.04, Step 4.1.1.7.G.)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for PCV-3-455C, PRZ PORV, to the OPEN position. Notes that the green CLOSE light is OFF and the red OPEN light is ON. Applicant notes indications of a leak, including, but not limited to: • PZR/RCS pressure decreasing • PZR level decreasing • Annunciators: ○ A 4/1 PORV/SAFETY VALVE OPEN ○ A 9/2 PRZ CONTROL HI/LOW PRESSURE ○ A 7/2 PZR PORV HI TEMP Applicant places the control switch for PCV-3-456, PRZ PORV, to the CLOSE position. Notes that the green CLOSE light remains OFF and the red OPEN light remains OFF. (Valve does NOT close) Within 16 minutes (per PSA), Applicant initiates a manual SI by depressing at least one of the two SAFETY INJECTION INITIATION pushbuttons. Manual SI is warranted per the following: • 0-ADM-211, Emergency and Off-Normal Procedure Usage, which allows manual action when an automatic action fails. • 3-EOP-E-0 Entry Conditions. • Annunciator C 3/6 PZR LO PRESS SI, Operator Actions.	
CUE	**TERMINATING CUE:** **Evaluator informs the Applicant that another operator will perform subsequent actions. The JPM is complete.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01041003201

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3.
- The plant is being shut down to Cold Shutdown in accordance with 3-GOP-305, Hot Standby to Cold Shutdown.
- Actions in 3-GOP-305, up through Step 5.2.9, have been complete.
- 3-NOP-041.04, Overpressure Mitigating System, is complete, up through Step 4.1.1.6.E.
- Attachment 1, OMS Valve Alignment, of 3-NOP-041.04 has been completed.
- 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test, has been completed within the past 31 days.
- 3-OSP-206.2, Quarterly Inservice Valve Testing, has been performed within the last 31 days.

Initiating Cue:

- Per 3-GOP-305, Step 5.2.10, you have been directed to complete 3-NOP-041.04, Overpressure Mitigating System, Section 4.1.1, starting with Step 4.1.1.7.

Acknowledge to the examiner when you are ready to begin.

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

FPL

TURKEY POINT UNIT 3

NORMAL OPERATING PROCEDURE

SAFETY RELATED

CONTINUOUS USE

Procedure No.

3-NOP-041.04

Revision No.

3

Title:

OVERPRESSURE MITIGATING SYSTEM

Responsible Department: **OPERATIONS**

Special Considerations:

This is an Upgraded Procedure. Initial use should include increased awareness because of potential technical and/or sequential changes to the procedure. After initial use of this procedure, provide comments back to the Procedure Upgrade Project.

FOR INFORMATION ONLY
Before use, verify revision and change documentation (if applicable) with a controlled index or document.
DATE VERIFIED_____ INITIAL_____

Revision	Approved By	Approval Date
0	Frank Wurster	12/14/08
3	Tom Wall	04/26/11

UNIT #	UNIT 3
DATE	
DOCT	PROCEDURE
DOCN	3-NOP-041.04
SYS	
STATUS	COMPLETED
REV	3
# OF PGS	

rec'd 10/5/11

REVISION SUMMARY	
Rev. No.	**Description**
3	**AR 1644653, 04/26/11, David Dagitz** Revised Attachment 1 to change the normal position of Valves 3-40-2322, 3-40-2323, 3-40-248, 3-40-249, 3-40-258, and 3-40-259 from CLOSED to CLOSED & CAPPED. (CR 460181) Change PI-4-4886A to PI-3-4886A, Section 4.1.1 Step 6.C(7).
2	**AR 589449, 10/23/10, David Dagitz** This expedited revision is to add Attachments 2 and 3 to the procedure to allow using temporary nitrogen bottles for the OMS in Modes 5, 6, or defueled and to ensure the proper coated bottles are back in place prior to entering Mode 4 from Mode 5.
1	**PCR 08-5983, 03/24/09, Dennis Bonsall** Revised procedure for implementation of PC/M 07-044, which adds a nitrogen bottle rack for additional nitrogen bottles and tubing for nitrogen bottle connection.
0	This procedure upgraded per PCR **08-1653, 12/13/08, Frank Wurster**. Upgraded entire procedure to Writer's Guide standards. Moved Prerequisites into applicable sections. Deleted QA Pages and references to them throughout. Logging the activity satisfies all QA record requirements. Deleted logging statements throughout. The requirements on what to log are covered in Conduct of Operations, 0-ADM-200 and Operations Narrative Logbooks, 0-ADM-204. Added specific guidance for checking N_2 bottles in containment. Added additional guidance for changing N_2 bottles. This procedure supersedes 3-OP-41.4 approved 2/21/05.

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides guidance for aligning and placing the Overpressure Mitigating System (OMS) in service and removing from service.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

1. Compressed gas cylinders shall always be stored upright, with their caps in place, in approved safe areas away from radiators, furnaces, and other sources of heat.
2. Stored cylinders must be restrained at all times.
3. Compressed gas cylinders should never be subjected to temperatures above 125°F.
4. Pressure shall be relieved before dismantling valves, gauges, or similar equipment associated with compressed gas.

2.2 Limitations

1. Extreme care should be used to prevent damage to adjacent equipment when working on top of the Pressurizer.

3.0 PREREQUISITES

None

4.0 NORMAL OPERATION

4.1 Startup

4.1.1 Preparation for OMS Operation

> **NOTE**
>
> Section 4.1.1 Step 1 through Section 4.1.1 Step 4 may be performed out of order.

1. **CHECK** Instrument Air System available.

> **NOTE**
>
> Previous performance of Attachment 1, OMS Valve Alignment, may be verified by the Shift Manager file if **NO** work has been performed on PORVs, PORV Back-up N_2 System, Instrument Air to PORVs, or in upper area of the Pressurizer cubicle and personnel safety is a concern. Use of a previous Attachment 1, OMS Valve Alignment, shall be recorded in the Unit Narrative Log.

2. **CHECK** OMS valve alignment by completion of Attachment 1, OMS Valve Alignment.

3. **ENSURE** nitrogen regulator outlet pressure for PCV-3-4885 and PCV-3-4886 is established in accordance with 3-PMI-041.39, Reactor Coolant System Power Operated Relief Valve Actuator Overhaul/Maintenance.

> **NOTE**
>
> Exercising the PORV Block Valve is **NOT** required per T.S. 4.4.4 if the PORV Block Valve is closed due to a leaky or inoperable PORV.

4. IF PORV Block Valve operability has **NOT** been demonstrated within the last 92 days, THEN **ENSURE** operability using 3-OSP-206.2, Quarterly Inservice Valve Testing, prior to placing OMS in service.

4.1.1 Preparation for OMS Operation (continued)

NOTE

If there is an adequate supply of charged Nitrogen bottles that meet SPEC-C-034, Protective Coatings for Service Level 1 Applications Inside the Reactor Containment Building, as indicated by being marked **Nitrogen for PRZ PORVs Only**, then Attachment 3, OMS Backup Nitrogen Cylinder Verification - Prior to Mode 4 from Mode 5, should be performed.

5. **CHECK** N_2 bottles inside Containment using either Attachment 2, OMS Backup Nitrogen Cylinder Verification - Modes 5, 6, and Defueled, OR Attachment 3, OMS Backup Nitrogen Cylinder Verification - Prior to Mode 4 from Mode 5.

NOTE

Section 4.1.1 Step 6 and Section 4.1.1 Step 7 may be performed concurrently.

6. **PERFORM** the following in Containment:

NOTE

The nitrogen cylinder isolation valve is considered 3-40-2443, PORV NITROGEN CYLINDER ISOLATION, when in-service. The valve tag for 3-40-2443 is moved with the flex hose connection when the cylinder is replaced.

N/A

A. IF N_2 pressure is less than 2000 psig as indicated on PI-3-4885A, PCV-3-4885 UPSTREAM PRESSURE INDICATOR, THEN **CHANGE** the N_2 bottle as follows:

N/A (1) **CLOSE** 3-40-2443, PORV NITROGEN CYLINDER ISOLATION.

CAUTION

No vent valve exists in the N_2 cylinder supply header. Pressure will be relieved as the flex hose is disconnected.

N/A (2) Slowly **DISCONNECT** flex hose from in-service N_2 bottle.

N/A (3) **CONNECT** flex hose to new N_2 bottle.

4.1.1 Preparation for OMS Operation (continued)

6. **A. (continued)**

N/A (4) **ENSURE** the valve label for 3-40-2443 is moved from the nitrogen cylinder just removed from service to the nitrogen cylinder being placed in service.

N/A (5) Slowly **OPEN** new in-service cylinder isolation valve 3-40-2443.

N/A (6) **ENSURE** connection **NOT** leaking.

NOTE

Maximum design inlet pressure for the regulator is 3000 psig.

N/A (7) **CHECK** N_2 pressure greater than 2000 psig on PI-3-4885A.

N/A (8) IF PI-3-4885A reads less than 2000 psig, THEN **REPEAT** Section 4.1.1 Step 6.A(1) through Section 4.1.1 Step 6.A(7).

NOTE

The operating pressure range for the regulator is between 2000 and 2400 psig with an output pressure range of 90 to 96 psig.

6. **B.** **ENSURE** PCV-3-4885 set to maintain 90 to 96 psig on PI-3-4885B, PCV-3-4885 DOWNSTREAM PRESSURE INDICATOR.

4.1.1 Preparation for OMS Operation (continued)

6. **(continued)**

NOTE

The nitrogen cylinder isolation valve is considered 3-40-2444, PORV NITROGEN CYLINDER ISOLATION, when in-service. The valve tag for 3-40-2444 is moved with the flex hose connection when the cylinder is replaced.

C. IF N_2 pressure is less than 2000 psig, as indicated on PI-3-4886A, PCV-3-4886 UPSTREAM PRESSURE INDICATOR, THEN **CHANGE** the N_2 bottle as follows:

N/A (1) **CLOSE** 3-40-2444, PORV NITROGEN CYLINDER ISOLATION.

CAUTION

NO vent valve exists in the N_2 cylinder supply header. Pressure will be relieved as the flex hose is disconnected.

N/A (2) Slowly **DISCONNECT** flex hose from in-service N_2 bottle.

N/A (3) **CONNECT** flex hose to new N_2 bottle.

N/A (4) **ENSURE** valve label 3-40-2444 moved from nitrogen cylinder just removed from service to nitrogen cylinder being placed in service.

N/A (5) Slowly **OPEN** new in-service cylinder stop valve 3-40-2444, AND **ENSURE** connection **NOT** leaking.

NOTE

Maximum design inlet pressure for the regulator is 3000 psig.

N/A (6) **CHECK** N_2 pressure greater than 2000 psig on PI-3-4886A.

N/A (7) IF PI-3-4886A reads less than 2000 psig, THEN **REPEAT** Section 4.1.1 Step 6.C(1) through Section 4.1.1 Step 6.C(6).

4.1.1 Preparation for OMS Operation (continued)

6. **(continued)**

> **NOTE**
>
> The operating pressure range for the regulator is between 2000 and 2400 PSIG with an output pressure range of 90 to 96 PSIG.

D. **CHECK** PCV-3-4886 set to maintain 90 to 96 PSIG on PI-3-4886B, PCV−3−4886 DOWNSTREAM PRESSURE INDICATOR.

> **NOTE**
>
> Operating Experience has demonstrated that cycling SV-3-6427A, REACTOR COOLANT SYSTEM HOT LEG LOOP A SAMPLE LINE SOLENOID VALVE, during OMS operation can cause a pressure event resulting in PORV actuation. This is due to the common instrument tap used by OMS pressure sensing line for PT-3-405, RCS Wide Range Pressure to OMS, and the sample line.

E. **INITIATE** a clearance on fuses for SV-3-6427A, REACTOR COOLANT SYSTEM HOT LEG LOOP A SAMPLE LINE SOLENOID VALVE, to Assistant Operations Manager per 0-ADM-212.

4.1.1 Preparation for OMS Operation (continued) **INITIAL**

7. **PERFORM** the following in the Control Room

NOTE

- OMS Loop Operability Test is required to be completed prior to placing OMS in service if **NOT** done within the last 31 days.
- Only one loop of OMS shall be tested at a time.

A. IF OMS N_2 Backup leak and functional testing was **NOT** performed within the last 31 days, THEN **PERFORM** 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test.

B. **CYCLE** MOV-3-535, PRZ PORV BLOCK VALVE, as follows:

(1) IF OMS IST Valve testing **NOT** performed within the last 31 days, THEN **PERFORM** 3-OSP-206.2, Quarterly Inservice Valve Testing.

(2) **CLOSE** MOV-3-535, PRZ PORV BLOCK VALVE. _____

_____
IV

NOTE

UNSAT results should be recorded in the Unit Narrative Log.

C. **CYCLE** PCV-3-456, PRZ PORV, full OPEN then CLOSED.

PORV	SAT	UNSAT
PCV-3-456		

D. **ENSURE** PCV-3-456, PRZ PORV, is in AUTO. _____

_____
IV

E. **OPEN** MOV-3-535, PRZ PORV BLOCK VALVE. _____

_____
IV

4.1.1 Preparation for OMS Operation (continued) **INITIAL**

7. (continued)

F. CYCLE MOV-3-536, PRZ PORV BLOCK VALVE, as follows:

(1) IF OMS IST Valve testing **NOT** done within the last 31 days, THEN **PERFORM** 3-OSP-206.2, Quarterly Inservice Valve Testing.

(2) CLOSE MOV-3-536, PRZ PORV BLOCK VALVE. _____

_____
IV

NOTE

UNSAT results should be recorded in the Unit Narrative Log.

G. CYCLE PCV-3-455C, PRZ PORV, full OPEN then CLOSED.

PORV	SAT	UNSAT
PCV-3-455C		

H. ENSURE PCV-3-455C, PRZ PORV, is in AUTO. _____

_____
IV

I. OPEN MOV-3-536, PRZ PORV BLOCK VALVE. _____

_____
IV

4.2 Operation

INITIAL

4.2.1 Establishing and Checking OMS Operation

1. **CHECK** Section 4.1.1 completed.

> **NOTE**
> The following values should indicate within 20 psig of each other.

2. **COMPARE** and **RECORD** values shown by the following indicators to verify availability of PT-3-403 and PT-3-405:

   - PI-3-405 (VPB)_____psig
   - PI-3-403 (VPA)_____psig
   - PI-3-402 (VPA)_____psig

3. IF values are greater than 20 psig of each other, THEN **NOTIFY** I&C.

4. WHEN RCS Cold Leg Temperature is less than 300°F, THEN:

   A. **PLACE** Primary OMS Mode Selector Switch in LO PRESS OPS. _____

   _____ IV

   B. **PLACE** Backup OMS Mode Selector Switch in LO PRESS OPS. _____

   _____ IV

5. **CHECK** the following permissive status lights ON:

   - PRIMARY ALIGNED
   - BACKUP ALIGNED

6. **RECORD** OMS established and operating in Unit Narrative Log.

4.3 Shutdown

4.3.1 Transferring OMS to Normal

1. **CHECK** all RCS cold leg temperatures greater than 275°F, as required by T.S. 3.4.9.3.

2. **CHECK** RCS pressure less than 415 psig.

3. **CHECK** OMS operating in LO PRESS OPS.

4. **PLACE** both OMS Control Switches in NORMAL:

   - PCV-3-455C, BACKUP OMS
   - PCV-3-456, PRIMARY OMS

5. **CHECK** the following permissive status lights OFF:

   - PRIMARY ALIGNED
   - BACKUP ALIGNED

NOTE

Annunciator should clear when RCS pressure rises above 415 PSIG.

6. **CHECK** Annunciator A 3/1, OMS LO PRESS OPERATION, in ALARM.

7. **REQUEST** Assistant Operations Manager release ECO on SV-3-6427A fuses.

5.0 INFREQUENT OPERATIONS

None

6.0 RECORDS

1. Date, time, and section completed, shall be entered in Unit Narrative Log.

2. Problems encountered while performing procedure (i.e., malfunctioning equipment, delays due to change in plant conditions, etc.) should be entered in Unit Narrative Log.

7.0 REFERENCES AND COMMITMENTS

7.1 References

7.1.1 Implementing

- 0-ADM-212, In-Plant Equipment Clearance Orders
- 3-PMI-041.39, Reactor Coolant System Power Operated Relief Valve Actuator Overhaul/Maintenance
- 3-OSP-041.4, Overpressure Mitigating System Nitrogen Backup Leak and Functional Test
- 0-OSP-200.1, Schedule of Plant Checks and Surveillances
- 3-OSP-206.2, Quarterly Inservice Valve Testing

7.1.2 Developmental

1. Technical Specifications
    - Section 3/4.4.9, Pressure/Temperature Limits
    - Section 3.4.9.3, Overpressure Mitigating Systems

7.1.2 Developmental (continued)

2. Plant Procedures

- 0-ADM-215, Plant Surveillance Tracking Program

3. Plant Drawings

- 5610-T-D-16A, Sheet 1, Pressurizer Pressure Protection and Overpressure Mitigation System
- 5613-M-3041, Sheet 4, Reactor Coolant System PORV Control

4. Miscellaneous Documents

- PC/M 89-565, Pressurizer PORV Air and Nitrogen Supply Tubing Enhancement
- PC/M 90-220, RTD Bypass Elimination Modification and Eagle 21 Installation
- CR 99-0508
- PC/M 01-050, AOV Modification and Program Parameter Documentation
- PTN-ENG-SENS-03-0046, Enabling the Cold Overpressure Mitigation System at Higher Temperature
- Response to GL 90-06, L-92-285

7.1.3 Management Directives

None

7.2 <u>Commitments</u>

None

ATTACHMENT 1
OMS Valve Alignment
(Page 1 of 4)

EXCEPTIONS		
COMPONENT NUMBER	**COMPONENT DESCRIPTION**	**REMARKS**

PERSONNEL PERFORMING MANIPULATIONS	
PRINTED NAME	**INITIALS**

COMPLETION OF LINEUP			
DATE LINEUP COMPLETED:	(MM/DD/YY): ____/____/____	TIME LINEUP COMPLETED:	(HH:MM, 24 HR CLOCK): ____:____
LINEUP COMPLETED BY:	PRINTED NAME / SIGNATURE: _____/_____		

REVIEW OF LINEUP			
LINEUP REVIEWED BY:	PRINTED NAME / SIGNATURE: _____/_____	DATE	(MM/DD/YY): ____/____/____

ATTACHMENT 1
OMS Valve Alignment
(Page 2 of 4)

COMPONENT NUMBER	COMPONENT DESCRIPTION	POSITION REQUIRED	ALIGNED BY	VERIFIED BY
In Containment - entrance to or inside Pressurizer cubicle				
NOTE 1: Position can be verified by Control Room position indication.				
MOV-3-536	PRZ PORV BLOCK VALVE	OPEN **NOTE 1**		
MOV-3-535	PRZ PORV BLOCK VALVE	OPEN **NOTE 1**		
3-40-2348	OPENING THROTTLE VALVE FOR PCV-3-455C	LOCKED/ LOCKING DEVICE INTACT		
3-40-2349	CLOSING THROTTLE VALVE FOR PCV-3-455C	LOCKED/ LOCKING DEVICE INTACT		
3-40-2350	OPENING THROTTLE VALVE FOR PCV-3-456	LOCKED/ LOCKING DEVICE INTACT		
3-40-2351	CLOSING THROTTLE VALVE FOR PCV-3-456	LOCKED/ LOCKING DEVICE INTACT		

ATTACHMENT 1
OMS Valve Alignment
(Page 3 of 4)

COMPONENT NUMBER	COMPONENT DESCRIPTION	POSITION REQUIRED	ALIGNED BY	VERIFIED BY
In Containment - on side of Pressurizer cubicle				
3-40-247	PORV INSTRUMENT AIR ISOLATION	OPEN		
3-40-249	PORV INSTRUMENT AIR LINE VENT	CLOSED & CAPPED		
3-40-248	PORV INSTRUMENT AIR LINE VENT	CLOSED & CAPPED		
3-40-2443	PORV NITROGEN CYLINDER ISOLATION	OPEN		
3-40-243	PORV NITROGEN REGULATOR OUTLET	OPEN		
3-40-257	PORV INSTRUMENT AIR ISOLATION	OPEN		
3-40-259	PORV INSTRUMENT AIR LINE VENT	CLOSED & CAPPED		
3-40-258	PORV INSTRUMENT AIR LINE VENT	CLOSED & CAPPED		
3-40-2444	PORV NITROGEN CYLINDER ISOLATION	OPEN		
3-40-253	PORV NITROGEN REGULATOR OUTLET	OPEN		
3-40-2322	PORV TEST CONN ISOLATION	CLOSED & CAPPED		
3-40-2323	PORV TEST CONN ISOLATION	CLOSED & CAPPED		

ATTACHMENT 1
OMS Valve Alignment
(Page 4 of 4)

COMPONENT NUMBER	COMPONENT DESCRIPTION	POSITION REQUIRED	ALIGNED BY	VERIFIED BY
In Containment - on side of Pressurizer cubicle (continued)				
NOTE 2: Valves with same number appear as two handles on same block. Care should be taken to verify correct alignment.				
3-40-2357 **NOTE 2**	PORV N_2 PI-3-4886A VENT VALVE	CLOSED		
3-40-2357 **NOTE 2**	PORV N_2 PI-3-4886A ISOLATION VALVE	OPEN		
3-40-2358 **NOTE 2**	PORV N_2 PI-3-4886B VENT VALVE	CLOSED		
3-40-2358 **NOTE 2**	PORV N_2 PI-3-4886B ISOLATION VALVE	OPEN		
3-40-2359 **NOTE 2**	PORV N_2 PI-3-4885A VENT VALVE	CLOSED		
3-40-2359 **NOTE 2**	PORV N_2 PI-3-4885A ISOLATION VALVE	OPEN		
3-40-2360 **NOTE 2**	PORV N_2 PI-3-4885B VENT VALVE	CLOSED		
3-40-2360 **NOTE 2**	PORV N_2 PI-3-4885B ISOLATION VALVE	OPEN		

ATTACHMENT 2
OMS Backup Nitrogen Cylinder Verification - Modes 5, 6, and Defueled

(Page 1 of 1)

INITIAL

1. OMS backup nitrogen cylinders are staged inside Containment as follows:

   A. Six fully charged (2200 to 2450 psig) nitrogen cylinders in 58-foot elevation storage rack next to the Pressurizer. _____

   B. All nitrogen cylinders are 300 cu ft cylinders stamped with DOT or ICC #3AA2400. _____

   C. Nitrogen bottles stored as follows:

      (1) Upright _____

      (2) Restrained _____

      (3) Caps in place _____

      (4) In approved safe areas away from:

      - Radiators _____
      - Furnaces _____
      - Other sources of heat _____
      - Temperature above 125 degrees°F _____

NITROGEN BOTTLE VERIFICATION			
DATE VERIFICATION COMPLETED:	(MM/DD/YY): _____/_____/_____	TIME VERIFIED:	(HH:MM, 24 HR CLOCK): _____:_____
VERIFICATION COMPLETED BY:	PRINTED NAME / SIGNATURE: _____/_____		

REVIEW OF NITROGEN BOTTLE VERIFICATION			
VERIFICATION REVIEWED BY:	PRINTED NAME / SIGNATURE: _____/_____	DATE:	(MM/DD/YY): _____/_____/_____

ATTACHMENT 3
OMS Backup Nitrogen Cylinder Verification - Prior to Mode 4 from Mode 5

(Page 1 of 1)

INITIAL

1. OMS backup nitrogen cylinders are staged inside Containment as follows:

   A. Six fully charged (2200 to 2450 psig) nitrogen cylinders in 58-foot elevation storage rack next to the Pressurizer. _____

   B. All nitrogen cylinders are 300 cu ft cylinders stamped with DOT or ICC #3AA2400.

   C. Gas cylinders are coated per SPEC-C-034 as indicated by being marked **Nitrogen for PZR PORVs only**. _____

   D. Nitrogen bottles stored as follows:

      (1) Upright _____

      (2) Restrained _____

      (3) Caps in place _____

      (4) In approved safe areas away from:

      - Radiators _____
      - Furnaces _____
      - Other sources of heat _____
      - Temperature above 125 degrees°F _____

NITROGEN BOTTLE VERIFICATION			
DATE VERIFICATION COMPLETED:	(MM/DD/YY): ____/____/____	TIME VERIFIED:	(HH:MM, 24 HR CLOCK): ____:____
VERIFICATION COMPLETED BY:	PRINTED NAME / SIGNATURE: ____/____		

REVIEW OF NITROGEN BOTTLE VERIFICATION			
VERIFICATION REVIEWED BY:	PRINTED NAME / SIGNATURE: ____/____	DATE:	(MM/DD/YY): ____/____/____

Facility:	Turkey Point	Task No:	01041038100
Task Title:	JPM: Start 3A RCP in Mode 3	JPM No:	01041038101
K/A Reference:	003 A2.03 RO 2.7 SRO 3.1		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X

Classroom _____ Simulator X Plant _____

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3
- 3A RCP is shut down.
- In preparation for startup of 3A RCP, Steps up through 4.1.1.16 of 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*, have been completed.
- The initial, 1-minute run is complete.

Initiating Cue:

- You have been directed to start up the 3A RCP, beginning with Step 4.1.1.17 of 3-NOP-041.01A.

Rec'd 10/5/11

Task Standard:

- 3A RCP started IAW 3-NOP-041.01A.
- 3A RCP secured IAW 3-NOP-041.01A prior to the RCP breaker trip on overcurrent.

Required Materials:

- 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*
- Stopwatch

General References:

- 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 194 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Open Lesson JPM-01041038101 and Execute.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Ensure RCP A MOTOR DETAILS is on one computer screen.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. Provide a copy of 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*, marked-up as complete through Step 16.

_____ 7. Provide a stopwatch.

_____ 8. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*.	
CUE	Provide the Applicant with a copy 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*, up through Section 4.3.1, and marked-up as complete through Step 15. Provide a stopwatch.	
COMMENT		

STEP 2 √	**START** 3A RCP Oil Lift Pump as follows: **START** 3A RCP Oil Lift Pump. WHEN 3A RCP Oil Lift Pump has operated for at least two minutes AND prior to starting 3A RCP, THEN **CHECK** white permissive light ON. (3-NOP-041.01A, Step 17)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for 3A RCP Oil Lift Pump in the START position. Notes that the green STOP light is OFF and the red ON light is ON.	
CUE		
COMMENT		

NOTE	**NOTE** • All associated RCP instrumentation (i.e., Seal Leak-off Flow, #1 Seal Differential Pressure) should be available and indicating properly for current plant conditions. • If the RCS is NOT vented, 3A RCP should only be operated for as long as directed by 3-OP-041.8, Filling and Venting the Reactor Coolant System. • Sudden changes in VCT temperature can cause the #1 Seal faceplates to warp. This can result in a reduction in #1 seal leakoff flow until seal temperature stabilizes. When possible, changes to VCT temperature should be gradual, approximately 5°F per day. **CAUTION** • When 3A RCP started with the Overpressure Mitigating System (OMS) is in Low Pressure Operation, RCS pressure should be closely monitored using highest indicating channel. RCS Loops without a RCP running have highest indicated pressure. There is only a 110 psig margin between the RCS operating pressure range of 325 to 350 psig and the PORV lift setpoint of 460 psig. • 3A RCP #1 Seal Differential Pressure should be monitored during RCP starts at low pressure. 3A RCP shall be stopped if seal differential pressure drops to 225 psid. • Starting 3A RCP causes a voltage transient that could be enough to adversely affect Containment Air Gaseous/Particulate Monitors, R11/R12, sample skid operation.	
STEP 3 √	**START** 3A RCP while monitoring both of the following: • Starting current as indicated on 3A RCP motor ammeter • RCS loop flow rate rise as indicated on FI-3-414, 415, or 416, A LOOP RCS FLOW. (3-NOP-041.01A, Step 17)	SAT _____ UNSAT _____
STANDARD	Applicant places the control switch for 3A RCP in the START position. Notes that the green STOP light is OFF and the red RUN light is ON. Applicant monitors amps on the 3A RCP ammeter and monitors RCS loop A flow rate on FI-3-414.	
CUE		
COMMENT	**EVALUATOR NOTES:** The following annunciators will alarm on pump start: • SU XFMRS PANEL TROUBLE (X 3/4) • RCP A/B/C MOTOR OVERLOAD (B 1/5) • RCP MOTOR/SHAFT HI VIB (F 1/1)	

NOTE	NOTE Motor current will normally be 637 amps and shall be maintained less than 943 amps, except for starting current.	
STEP 4 √	IF RCP starting current is greater than 943 amps after 25 seconds, THEN **STOP** 3A RCP. (3-NOP-041.01A, Step 18)	SAT _____ UNSAT _____
STANDARD	Applicant notes that RCP starting current is greater than 943 amps after 25 seconds. Applicant places the control switch for 3A RCP in the STOP position prior to the RCP breaker trip on overcurrent. Notes that the green STOP light is ON and the red RUN light is OFF.	
CUE		
COMMENT	**EVALUATOR NOTE:** The Applicant may elect to secure the RCP based on increasing stator temperature or high vibration.	

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01041038101

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3
- 3A RCP is shut down
- In preparation for startup of 3A RCP, Steps up through 4.1.1.16 of 3-NOP-041.01A, *3A Reactor Coolant Pump Operations*, have been completed.
- The initial, 1-minute run is complete.

Initiating Cue:

- You have been directed to start up the 3A RCP, beginning with Step 4.1.1.17 of 3-NOP-041.01A.

Acknowledge to the examiner when you are ready to begin.

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

FPL	TURKEY POINT UNIT 3 NORMAL OPERATING PROCEDURE SAFETY RELATED CONTINUOUS USE	Procedure No. 3-NOP-041.01A Revision No. 1 Effective Date 08/06/10

Title:

3A REACTOR COOLANT PUMP OPERATIONS

Responsible Department: **OPERATIONS**

Special Considerations:

This is an Upgraded Procedure. Initial use should include increased awareness because of potential technical and/or sequential changes to the procedure. After initial use of this procedure, provide comments back to the Procedure Upgrade Project.

Performance of this procedure may affect core reactivity.

FOR INFORMATION ONLY
Before use, verify revision and change documentation (if applicable) with a controlled index or document.
DATE VERIFIED_____ INITIAL_____

Revision	Approved By	Approval Date
0	Frank Wurster	12/19/08
1	Brian Stamp	08/02/10

UNIT #	UNIT 3
DATE	
DOCT	PROCEDURE
DOCN	3-NOP-041.01A
SYS	
STATUS	COMPLETED
REV	1
# OF PGS	

rec'd 10/3/11

REVISION SUMMARY	
Rev. No.	**Description**
1	**PCR 10-1222, 08/02/10, David Dagitz** Removed unnecessary Caution about preceding Steps 4.1.1.10 and 5.1.4.

TABLE OF CONTENTS

1.0 PURPOSE

This procedure provides guidance for starting and stopping 3A Reactor Coolant Pump (RCP). This procedure also provides guidance for 3A RCP infrequent operations such as uncoupled pump operation, adjusting Seal Injection flow, filling the RCP standpipe, and resetting an unresponsive 3A RCP Partial Discharge Monitor.

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

1. Personnel entering 3A RCP area should wear ear protection during RCP operation.

2. Reactor shall be shutdown prior to restart of 3A RCP.

3. Tech Spec 3.4.1.1 requires all loops be in operation in MODES 1 and 2.

4. O-ring seals deteriorate rapidly as temperature approaches 350°F.

2.2 Limitations

1. 3A RCP shall **NOT** be started if Reactor Coolant Loops could potentially be at significantly lower boron concentration than the Reactor Vessel. 0-ONOP-041.9, Potential Dilution of Reactor Coolant Loop(s), provides instructions for ensuring required boron concentrations are achieved prior to RCP operation.

2. Unless 3A RCP oil reservoir level is checked locally, 3A RCP motor shall only be started when oil reservoir high/low level alarm is clear.

3. 3A RCP Oil Lift Pump should **NOT** be operated when CCW is isolated from oil coolers. Momentary operation of the Oil Lift Pump without CCW, such as for uncoupled motor bump for rotation check, is acceptable.

4. If Component Cooling Water (CCW) to 3A RCP is lost, 3A RCP shall be stopped before either upper or lower bearing temperature has risen to 195°F and the Oil Lift Pump shall be stopped.

5. 3A RCP shall **NOT** be started with one or more RCS cold leg temperatures less than or equal to 275°F unless secondary water temperature of each steam generator is less than 50°F above each RCS cold leg temperature. (Tech. Spec. 3/4.4.1.3)

2.2 Limitations (continued)

6. If Reactor Coolant System (RCS) is solid, both of the following apply:

- If all RCPs are stopped for 10 minutes, running Residual Heat Removal (RHR) pump outlet temperature should be determined and RHR Hx flow adjusted to maintain that temperature.
- If the two-pump RCS fill and vent method is used and SG U-tubes were drained, a pressurizer bubble should be formed before the last RCP is started to prevent an RCS pressure event.

7. RCP motor starting duty limits are:

- With the motor at ambient temperature, two successive starts are allowed. The motor shall be allowed to coast to rest between starts.
- With the motor at operating temperature, one start is allowed. Subsequent starts require the motor be allowed to cool by standing idle for one hour or by running for one half hour.
- Starts are limited to three within a 2 hour period. Subsequent starts are allowed only after standing idle for one hour.

8. If any of the following limits are reached:

- Motor vibration 4 mils or shaft vibration 15 mils.
- Motor upper bearing or lower bearing temperature 195°F.
- Motor bearing oil reservoir high/low level alarm, unless level verified locally.

NOTE

Stator winding temperature limit may be exceeded for a short time during cold RCP operation.

- Stator winding temperature 248°F.
- Pump bearing temperature 225°F.
- #1 seal leak-off temperature 235°F.

2.2 Limitations (continued)

8. (continued)

- #1 seal leak-off on narrow range recorder is less than 0.2 gpm at low pressure conditions, unless visual inspection shows satisfactory leak-off, or less than 1.0 gpm at normal system pressure per Attachment 3, Unit 3 Reactor Coolant Pump Operation Figure.
- #1 seal leak-off flow greater than 5.0 gpm.
- #1 seal ΔP less than 200 psid.
- Seal injection water is **NOT** required to a running RCP in either of the following conditions:
  - All #1 seal leak-off RCP bearing and CCW temperatures are within limits specified in this procedure and RCS temperature less than 150°F.
  - #1 seal leak-off rate is less than 5 gpm and at least 25 gpm CCW flow at an inlet temperature of less than 105°F flowing through thermal barrier cooling coil.
- Seal injection water temperature 130°F as indicated on TI-3-116, VCT. Temperature may rise to 150°F if RCS temperature is less than 400°F.

3-ONOP-041.1, Reactor Coolant Pump Off-Normal, provides necessary guidance for restoration.

3.0 PREREQUISITES

None

4.0 NORMAL OPERATIONS

4.1 Startup

4.1.1 Starting 3A Reactor Coolant Pump

NOTE

Section 4.1.1 Step 1 through Section 4.1.1 Step 15 may be performed in any order.

1. **CHECK** the following systems available or in operation as necessary to support RCP operation:
   - Component Cooling Water System
   - Chemical and Volume Control System
   - Primary Water System
   - Instrument Air System
   - Waste Disposal System
   - Reactor Coolant System
2. **CHECK** the following plant electrical systems energized to support RCP operation:
   - 3A 4160V Bus
   - 3A MCC
   - LP-34
3. **ENSURE** 3A RCP switch and breaker alignments per:
   - Attachment 1, 3A Reactor Coolant Pump And Oil Lift Pump Switch Alignment
   - Attachment 2, 3A Reactor Coolant Pump And Oil Lift Pump Breaker Alignment

4.1.1 Starting 3A Reactor Coolant Pump (continued)

4. NO IF starting the first RCP, THEN **CHECK** the following conditions have **NOT** occurred that would indicate a RCS loop or portion thereof may have been diluted during the time RCPs were secured:

   - Steam Generator tube(s) ruptured.
   - Large boration of the RCS occurred after the RCPs were shutdown.
   - Reported or observed activity which may have diluted the water in the RCS.
   - RCS Sample indicates a loop has been diluted.

5. NO IF a RCS loop or portion thereof was diluted, THEN **GO TO** 0-ONOP-041.9, Potential Dilution of Reactor Coolant Loop(s).

CAUTION

Starting 3A RCP may cause 3A Emergency Diesel Generator (EDG), if paralleled to 3A 4160V bus, to trip, and could damage 3A EDG.

6. **ENSURE** 3A EDG is **NOT** paralleled to 3A 4160V Bus.

7. **ENSURE** VCT pressure is controlled to maintain <u>one</u> of the following

   - In the normal range of 16 to 25 psig
   - As required to maintain RCP seal leak-off and as specified by Chemistry

8. IF FI-3-130, RCP A SEAL INJECTION FLOW INDICATOR, does **NOT** indicate 6 to 13 gpm, THEN **ADJUST** seal injection flow per Section 5.3.

4.1.1 Starting 3A Reactor Coolant Pump (continued)

9. IF thermal barrier differential pressure is less than zero inches of water, as indicated on PI-3-131A, A RCP THERMAL BARRIER D/P, THEN:

> **NOTE**
> A minimum of 6 gpm required for RCP Seal Injection.

A. While RCO monitors DCS RCP Detailed Data Summary display for flow changes, SNPO locally **ADJUST** 3-297A, 3A RCP SEAL WATER SUPPLY, to obtain 6 to 13 gpm.

B. IF 3-297A is full OPEN AND seal injection flow is less than 6 gpm, THEN, while SNPO monitors RCP seal injection flow locally, RCO **ADJUST** HCV-3-121, CHARGING FLOW TO REGEN HX, CLOSED to maximize seal injection flow.

> **NOTE**
> Following initial verification of RCP CCW flows and S/G temperatures, re-verification is **N/A** for subsequent RCP starts if, at discretion of the Shift Manager, **NO** intervening activities occurred to adversely impact those flows or temperatures.

10. **CHECK** the following CCW flows:

C. FI-3-630, RCP A THERMAL BARRIER CCW RETURN FLOW INDICATOR, indicates 21 to 30 gpm.

N/A FI-3-628, RCP A LOWER BEARING CCW RETURN FLOW INDICATOR, indicates 5 to 10 gpm.

N/A FIC-3-629, RCP A CCW RETURN FLOW, indicates 150 to 163 gpm or, when on RHR, 138 to 145 gpm.

11. IF RCS cold leg temperature is less than or equal to 275°F AND **NO** RCPs are RUNNING, THEN **CHECK** Steam Generator secondary water temperature less than 10°F above RCS temperature in 3A, 3B, and 3C Steam Generators using Section 5.6.

12. **CHECK** 3A RCP #1 seal leak-off flow, as indicated on FR-3-154A or FR-3-154B, within limits shown in Attachment 3, Unit 3 Reactor Coolant Pump Operation Figure.

4.1.1 Starting 3A Reactor Coolant Pump (continued)

12. (continued)

A. IF #1 seal leak-off flow less than lower limit of Attachment 3, Unit 3 Reactor Coolant Pump Operation Figure, THEN **REFER TO** Section 5.5.1.

B. IF #1 seal leak-off flow greater than upper limit of Attachment 3, Unit 3 Reactor Coolant Pump Operation Figure, THEN **REFER TO** Section 5.5.2.

NOTE

RCS pressure range is 325 to 350 psig for solid plant condition.

13. IF PI-3-156, A RCP #1 SEAL ΔP, indicates less than 225 psid across #1 seal, THEN **ENSURE** RCS pressure greater than 325 psig.

14. IF Annunciator G 2/1 - RCP A STANDPIPE HI LEVEL, is in ALARM, THEN **GO TO** 3-ONOP-041.1, Reactor Coolant Pump Off-Normal.

15. IF Annunciator G 3/1 - RCP A STANDPIPE LO LEVEL, is in ALARM, THEN **FILL** the standpipe per Section 5.7.

CAUTION

- 3A RCP Oil Lift Pump operation should be limited to 15 minutes during normal RCP starting evolutions. Exception may be taken during off-normal operation or troubleshooting.
- Prolonged operation of 3A RCP Oil Lift Pump may cause air entrainment in the oil resulting in the inability to achieve RCP prestart oil pressure.

16. **START** 3A RCP Oil Lift Pump as follows:

A. **START** 3A RCP Oil Lift Pump.

B. WHEN 3A RCP Oil Lift Pump has operated for at least <u>two</u> minutes AND prior to starting 3A RCP, THEN **CHECK** white permissive light ON.

4.1.1 Starting 3A Reactor Coolant Pump (continued)

NOTE

- All associated RCP instrumentation (i.e., Seal Leak-off Flow, #1 Seal Differential Pressure) should be available and indicating properly for current plant conditions.
- If the RCS is **NOT** vented, 3A RCP should only be operated for as long as directed by 3-OP-041.8, Filling and Venting the Reactor Coolant System.
- Sudden changes in VCT temperature can cause the #1 Seal faceplates to warp. This can result in a reduction in #1 seal leakoff flow until seal temperature stabilizes. When possible, changes to VCT temperature should be gradual, approximately 5°F per day.

CAUTION

- When 3A RCP started with the Overpressure Mitigating System (OMS) is in Low Pressure Operation, RCS pressure should be closely monitored using highest indicating channel. RCS Loops without a RCP running have highest indicated pressure. There is only a 110 psig margin between the RCS operating pressure range of 325 to 350 psig and the PORV lift setpoint of 460 psig.
- 3A RCP #1 Seal Differential Pressure should be monitored during RCP starts at low pressure. 3A RCP shall be stopped if seal differential pressure drops to 225 psid.
- Starting 3A RCP causes a voltage transient that could be enough to adversely affect Containment Air Gaseous/Particulate Monitors, R11/R12, sample skid operation.

17. **START** 3A RCP while monitoring both of the following:
    - Starting current as indicated on 3A RCP motor ammeter
    - RCS loop flow rate rise as indicated on FI-3-414, 415, or 416, A LOOP RCS FLOW

NOTE

Motor current will normally be 637 amps and shall be maintained less than 943 amps, except for starting current.

18. IF RCP starting current is greater than 943 amps after 25 seconds, THEN **STOP** 3A RCP.

4.1.1 Starting 3A Reactor Coolant Pump (continued)

19. WHEN 3A RCP has operated for at least one minute, THEN **STOP** 3A RCP Oil Lift Pump.

20. IF 3A RCP #1 seal leak-off flow, as indicated on FR-3-154A or FR-3-154B, is **NOT** within limits of Attachment 3, Unit 3 Reactor Coolant Pump Operation Figure, within three minutes of starting 3A RCP, THEN **STOP** 3A RCP.

21. IF indication on R11/R12 sample skid does **NOT** return, THEN **REQUEST** I&C start sample pumps in MANUAL MODE locally at skid.

22. **ENSURE** VCT pressure is controlled to maintain one of the following:

- In the normal range of 16 and 25 psig.
- As required to maintain RCP seal leak-off and as specified by Chemistry.

4.1.1 Starting 3A Reactor Coolant Pump (continued)

23. WHEN 3A RCP has operated for more than 10 minutes, THEN **CHECK** conditions on DCS stabilized less than maximum values listed below:

NOTE

Stator Winding maximum temperature may be exceeded during RCP cold operation (i.e., first start attempt).

Table 1 - RCP Startup Temperature Ranges

PARAMETER	MAX °F	NORM °F	STABLE	
			YES	NO
#1 Seal Leak-off	235	100-190		
Pump Bearing	225	160		
Upper Thrust Bearing	190	150		
Lower Thrust Bearing	190	150		
Upper Guide Bearing	190	150		
Lower Guide Bearing	190	125		
Stator Winding	248	200		

A. **CHECK** seal water injection flow on FI-3-130 between 6 and 13 gpm.

NOTE

RCP Vibration indicated on Recorder 369 and on DCS.

B. **CHECK** RCP shaft vibration less than 15 mils.

C. **CHECK** RCP motor vibration less than 4 mils.

4.2 Operation

None

4.3 Shutdown

4.3.1 Stopping 3A Reactor Coolant Pump

1. **STOP** 3A RCP.

CAUTION

- CCW to 3A RCP is required until RCS temperature is less than 150°F and 3A RCP is idle for at least a half hour.
- Seal Injection water to 3A RCP is required when RCS temperature is greater than 150°F and RCS pressure is greater than 100 psig, or when CV-3-303A, 3A RCP #1 SEAL LEAKOFF ISOLATION, is OPEN.

2. **MAINTAIN** CCW to 3A RCP motor bearing oil cooler for at least one half hour or until RCS temperature is less than 150°F after stopping the RCP.

Facility:	Turkey Point	Task No:	01067013200
Task Title:	JPM: Manually Initiate Containment Spray and Control Room Ventilation Isolation	JPM No:	01067013201
K/A Reference:	013 A4.01 RO 4.5 SRO 4.8		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X
Classroom		Simulator X	Plant

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The Unit 3 Reactor has tripped due to a LOCA inside of Containment.
- Safety Injection has occurred.
- Containment Isolation Phase A has occurred.

Initiating Cue:

- You have been directed to complete 3-EOP-E-0, *Reactor Trip or Safety Injection*, Attachment 3, starting at Step 15.

rec'd 10/5/11

Task Standard:

- The Applicant manually initiates at least ONE train of Containment Spray
- The Applicant manually isolates Containment Isolation Phase B components.
- The Applicant manually starts at least one train of CR Emergency Recirculation.

Required Materials:

- 3-EOP-E-0, *Reactor Trip or Safety Injection,* Attachment 3

General References:

- 3-EOP-E-0, *Reactor Trip or Safety Injection*, Attachment 3

Time Critical Task: No

Validation Time: 10 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 195 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Open Lesson JPM-01067013201 and Execute.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. Provide a copy of 3-EOP-E-0, *Reactor Trip or Safety Injection,* Attachment 3, marked up as complete through Step 14.

_____ 7. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-EOP-E-0, *Reactor Trip or Safety Injection.*	
CUE	Provide the Applicant with a copy 3-EOP-E-0, *Reactor Trip or Safety Injection,* Attachment 3, marked up as complete through Step 14.	
COMMENT		

STEP 2	Monitor Containment Pressure To Verify Containment Spray NOT Required. Containment pressure - HAS REMAINED LESS THAN 20 PSIG • PR-3-6306A **AND** • PR-3-6306B (3-EOP-E-0, Attachment 3, Step 15.a)	SAT _____ UNSAT _____
STANDARD	Applicant observes Containment pressure is greater than 20 psig on Containment pressure recorders. Transitions to the RNO column.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** This is one of the Alternate Path aspects of this JPM.	

STEP 3 √	**IF** containment spray **NOT** initiated, **THEN** manually initiate containment spray. (3-EOP-E-0, Attachment 3, Step 15 RNO a.1)	SAT _____ UNSAT _____
STANDARD	Applicant initiates two complete Trains of Containment Spray by performing the following: Applicant Notes that MOV-3-880A and MOV-3-880B did not open and that Containment Spray Pumps A and B did not start. Applicant places BOTH CNTMT SPRAY ISOLATION MOV-3-880A and MOV-3-880B handswitches to OPEN. Notes that the green CLOSED lights are OFF and the red OPEN lights are ON. **AND** Applicant places the 3A and 3B Containment Spray Pumps handswitches to START. Notes the red RUN lights are ON and the green STOP lights are OFF.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** This is one of the Alternate Path aspects of this JPM. Sequence of opening valves, compared to starting pumps, is not critical.	

STEP 4	Verify Containment Isolation Phase B - ACTUATED. (3-EOP-E-0, Attachment 3, Step 15 RNO a.2)	SAT _____ UNSAT _____
STANDARD	Applicant notes that Containment Isolation Phase B has not actuated by noting that all of the white, PHASE "B" lights are NOT BRIGHT. Applicant Goes to 15 RNO Step a.3).	
CUE		
COMMENT		

STEP 5	Verify Containment Isolation Phase B valve white lights on VPB – ALL BRIGHT. (3-EOP-E-0, Attachment 3, Step 15 RNO a.3)	
STANDARD	Applicant notes that the white Phase B lights on VPB are NOT BRIGHT. Goes to Step 15 RNO Step a.4). Applicant may attempt to manually initiate Phase B Isolation by simultaneously depressing BOTH Phase B Isolation pushbuttons.	
CUE		
COMMENT	**EVALUATOR NOTE:** Phase B pushbuttons are disabled; therefore, depressing the pushbuttons is not critical.	

STEP 6 √	**IF** any Containment Isolation Phase B valve did **NOT** close, **THEN** manually or locally isolate affected containment penetration. (3-EOP-E-0, Attachment 3, Step 15 RNO a.4)	SAT _____ UNSAT _____
STANDARD	Notes that the white lights for the Phase B Isolation valves are NOT BRIGHT. Applicant takes control switch for the flowing valves to the CLOSE position: • RCP CLG WTR MOV-3-716B • RCP CLG WTR FCV-3-626 • RCP CLG WTR MOV-3-730 Applicant notes the white lights for the following valves are BRIGHT: • RCP CLG WTR MOV-3-716B CLOSED • RCP CLG WTR FCV-3-626 CLOSED • RCP CLG WTR MOV-3-730 CLOSED	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** Containment Isolation Phase B is disabled as a part of the setup.	

STEP 7	Stop all RCPs (3-EOP-E-0, Attachment 3, Step 15 RNO a.5)	SAT _____ UNSAT _____
STANDARD	Applicant notes that all RCPs have already been stopped by observing the green STOP lights ON and the red START lights OFF for the three RCPs.	
CUE		
COMMENT		

STEP 8	**Verify Containment and Control Room Ventilation Isolation** Unit 3 containment purge exhaust and supply fans – OFF (3-EOP-E-0, Attachment 3, Step 16.a)	SAT _____ UNSAT _____
STANDARD	Applicant notes that the green STOP light is ON and the red RUN light is OFF for the U-3 CNTMT PURGE SUPPLY FAN and the U-3 CNTMT. PURGE EXHAUST FAN on VPB.	
CUE		
COMMENT		

STEP 9	Verify Control Room ventilation status panel - PROPER EMERGENCY RECIRCULATION ALIGNMENT (3-EOP-E-0, Attachment 3, Step 16.b)	SAT _____ UNSAT _____
STANDARD	Applicant notes the EMER. AIR SUPPLY FAN SF-1B (V-29B) did NOT start. Transitions to the RNO column.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** This is one of the Alternate Path aspects of this JPM.	

STEP 10 √	Manually align equipment for Control Room emergency recirculation. (3-EOP-E-0, Attachment 3, RNO Step 16.b)	SAT _____ UNSAT _____
STANDARD	Applicant places handswitch for the EMER. AIR SUPPLY FAN SF-1B (V-29B) in the START position. Notes the green OFF light is OFF and the red RECIRC ON light is ON.	
CUE	**TERMINATING CUE:** **Evaluator informs Applicant that another operator will complete Attachment 3. This completes the JPM.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01067013201

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The Unit 3 Reactor has tripped due to a LOCA inside of Containment.
- Safety Injection has occurred.
- Containment Isolation Phase A has occurred.

Initiating Cue:

- You have been directed to complete 3-EOP-E-0, *Reactor Trip or Safety Injection*, Attachment 3, starting at Step 15.

Acknowledge to the examiner when you are ready to begin.

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 1 of 7)

PROMPT ACTION VERIFICATIONS

1. **Check The Load Centers Associated With The Energized 4 KV Buses – ENERGIZED**

   Close the Load Center supply breakers.

   - 3A LC
   - 3B LC
   - 3C LC
   - 3D LC
   - 3H LC

2. **Check If Main Steamlines Should Be Isolated**

   a. Check main steamline isolation and bypass valves - ANY OPEN

      a. Go to Step 3.

   b. Check if either main steam isolation signal has actuated No

      b. Go to Step 3.

      - High steam flow with either low S/G pressure 614 psig **OR** low Tavg 543 F

        OR

      - Hi-Hi containment pressure 20 PSIG

   c. Verify main steam isolation and bypass valves - CLOSED

      c. Push manual Steamline Isolation push buttons on VPB **OR** manually close valves.

3. **Verify Feedwater Isolation**

   a. Place main feedwater pump switches in STOP

   b. Feedwater control valves – CLOSED

      b. Manually close valves.

   c. Feedwater bypass valves – CLOSED

      c. Manually close valves.

   d. Close feedwater isolation MOVs

      d. Locally close valves.

   e. Verify standby feedwater pumps – OFF

      e. **IF** standby feedwater is aligned to Unit 3, **THEN** stop standby feedwater pump(s).

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 2 of 7)

PROMPT ACTION VERIFICATIONS

4.	**Verify Proper ICW System Operation**	
a.	Verify ICW pumps - AT LEAST TWO RUNNING	a. Start ICW pump(s) to establish at least two running.
b.	Verify ICW to TPCW Heat Exchanger – ISOLATED	b. Manually close valve(s). **IF** valve(s) can **NOT** be closed, **THEN** locally close the following valves: • 3-50-319 for POV-3-4882 • 3-50-339 for POV-3-4883
(1)	POV-3-4882 – CLOSED	
(2)	POV-3-4883 – CLOSED	
c.	Check ICW headers - TIED TOGETHER	c. **IF** both ICW headers are intact, **THEN** direct operator to tie headers together.
5.	**Verify Proper CCW System Operation**	
a.	CCW Heat Exchangers – THREE IN SERVICE	a. Perform the following: 1) Start or stop CCW pumps as necessary to establish ONLY ONE RUNNING CCW PUMP. 2) Verify Emergency Containment Coolers - ONLY TWO RUNNING 3) Go to Step 5c.
b.	CCW pumps - ONLY TWO RUNNING	b. Start or stop CCW pumps as necessary to establish ONLY TWO RUNNING CCW PUMPS.
c.	CCW headers - TIED TOGETHER	c. **IF** both CCW headers are intact, **THEN** direct a field operator to tie the headers together.
d.	RCP Thermal Barrier CCW Outlet, MOV-3-626 – OPEN	d. **IF** containment isolation phase B **NOT** actuated **AND** CCW radiation levels are normal, **AND** RCP number one seal leak-off temperature is less than 235°F, **THEN** manually open MOV-3-626. **IF** MOV-3-626 can **NOT** be manually opened, **THEN** direct operator to open MOV-3-626 locally.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 3 of 7)

PROMPT ACTION VERIFICATIONS

6.	**Verify Containment Cooling**	
a.	Check emergency containment coolers - ONLY TWO RUNNING	a. Manually start or stop emergency containment coolers to establish - ONLY TWO RUNNING.
b.	Verify emergency containment filter fans - AT LEAST TWO RUNNING	b. Manually start emergency containment filter fans.
7.	**Verify Pump Operation**	
a.	At least two high head SI pumps running	a. Manually start high-head pump(s).
b.	Both RHR pumps running	b. Manually start RHR pump(s).
8.	**Verify SI Flow**	
a.	RCS pressure - LESS THAN 1600 PSIG [2000 PSIG]	a. Go to Step 9.
b.	High-head SI pump flow indicator – CHECK FOR FLOW	b. Manually start pumps **AND** align valves to establish an injection flowpath.
c.	RCS pressure - LESS THAN 250 PSIG [650 PSIG]	c. Go to Step 9.
d.	RHR pump flow indicator - CHECK FOR FLOW	d. Manually start pumps **AND** align valves to establish an injection flowpath.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 4 of 7)

PROMPT ACTION VERIFICATIONS

9.	**Realign SI System**	
a.	Verify Unit 3 high-head SI pumps - TWO RUNNING	a. Perform the following: 1) Operate Unit 3 and Unit 4 high-head SI pumps to establish injection to Unit 3 from two high-head SI pumps. 2) Direct Unit 4 Reactor Operator to align Unit 4 high-head SI pump suction to Unit 3 RWST using ATTACHMENT 1 of this procedure. 3) Go to Step 10.
b.	Stop both Unit 4 high-head SI pumps **AND** place in standby	
10.	**Verify Containment Isolation Phase A Valve White Lights On VPB – ALL BRIGHT**	Perform the following: a. Manually actuate Containment Isolation Phase A. b. **IF** any Containment Isolation Phase A valve is **NOT** closed, **THEN** manually close valve. **IF** valve(s) can **NOT** be manually closed, **THEN** manually or locally isolate affected containment penetration.
11.	**Verify SI Valve Amber Lights On VPB - ALL BRIGHT**	Manually align valves to establish proper SI alignment for an injection flowpath.
12.	**Verify SI – RESET**	Reset SI
13.	**Verify Containment Phase A – RESET**	Reset Phase A

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 5 of 7)

PROMPT ACTION VERIFICATIONS

14. Reestablish RCP Cooling

a. Check RCPs – AT LEAST ONE RUNNING NO → a. Go to Step 15.

b. Open CCW to normal containment cooler valves
- MOV-3-1417
- MOV-3-1418

b. Stop all RCPs

c. Reset and start normal containment coolers

c. Stop all RCPs

15. Monitor Containment Pressure To Verify Containment Spray NOT Required

a. Containment pressure - HAS REMAINED LESS THAN 20 PSIG
- PR-3-6306A

AND

- PR-3-6306B

a. Perform the following:

1) **IF** containment spray **NOT** initiated, **THEN** manually initiate containment spray.

2) Verify Containment Isolation Phase B - ACTUATED.

3) Verify Containment Isolation Phase B valve white lights on VPB – ALL BRIGHT.

4) **IF** any Containment Isolation Phase B valve did **NOT** close, **THEN** manually or locally isolate affected containment penetration.

5) Stop all RCPs.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 6 of 7)

PROMPT ACTION VERIFICATIONS

16. Verify Containment and Control Room Ventilation Isolation

a. Unit 3 containment purge exhaust and supply fans – OFF

a. Manually stop fans.

b. Verify Control Room ventilation status panel - PROPER EMERGENCY RECIRCULATION ALIGNMENT

b. Manually align equipment for Control Room emergency recirculation.

NOTE

Hydrogen Monitors should be in service within 30 minutes of a valid SI signal. They should be available in a timely manner to support decision-making related to hydrogen generation in containment.

17. Place Hydrogen Monitors In Service Using 3-NOP-094, CONTAINMENT POST ACCIDENT MONITORING SYSTEM

18. Verify All Four EDGs – RUNNING

EMERGENCY START any available EDG **NOT** running.

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

ATTACHMENT 3
(Page 7 of 7)

PROMPT ACTION VERIFICATIONS

19. Verify Power To Emergency 4 KV Buses and Load Centers

a. Check the 3A, 3B and 3D 4 KV buses - ALL ENERGIZED

a. Perform the following:

1) Inform the Unit Supervisor that ATTACHMENT 3 is complete with the exception of the de-energized bus or buses.

2) **IF** the Unit Supervisor decides not to energize the de-energized bus or buses, **THEN** go to Step 20.

3) **IF** the Unit Supervisor decides to energize 3A, 3B, or 3D bus, **THEN** perform the following:

a) **IF** 3A 4 KV bus de-energized, **THEN** restore power to bus using 3-ONOP-004.2, LOSS OF 3A 4KV BUS.

b) **IF** 3B 4 KV bus de-energized, **THEN** restore power to bus using 3-ONOP-004.3, LOSS OF 3B 4KV BUS.

c) **IF** 3D 4 KV bus de-energized, **THEN** restore power to bus using 3-ONOP-004.5, LOSS OF 3D 4KV BUS.

20. Notify The Unit Supervisor That The PROMPT ACTION VERIFICATIONS Attachment Is Complete And Discuss Any Safeguards Equipment That Is Not In The Required Condition

Facility:	Turkey Point	Task No:	01002002100
Task Title:	JPM: Manually Synchronize Main Generator	JPM No:	01002002100
K/A Reference:	045 A4.02 RO 2.7 SRO 2.6		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X

Classroom _____ Simulator X _____ Plant _____

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in MODE 1, 5-6% power.
- The plant is being started up per 3-GOP-301, Hot Standby to Power Operation. Actions are complete up through Step 5.54.
- Main turbine speed is approximately 1794 rpm
- The voltage regulator is in service.
- The Main Generator AUTO Synchronizing Circuit is NOT available.
- The Shift Manager has given authorization to perform a manual synchronization of the main generator.
- The RCO is monitoring Reactor power and the RCS.

Initiating Cue:

- You have been directed to manually synchronize the generator using 3-GOP-301, Hot Standby to Power Operation, starting with Step 5.55; and raise load to 10 MW.
- All prerequisites and job briefings have already been completed.

Rec'd 10/5/11

Task Standard:

- The main generator has been synchronized to the grid and main generator load is raised to at least 10 MWe with no reverse power trip.

Required Materials:

- 3-GOP-301, *Hot Standby to Power Operation*
- Sync plug

General References:

- 3-GOP-301, *Hot Standby to Power Operation*

Time Critical Task: No

Validation Time: 20 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 196 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Ensure Simulator Operator Checklist is complete.

_____ 4. Acknowledge alarms and place simulator in FREEZE.

_____ 5. Provide a copy of 3-GOP-301, *Hot Standby to Power Operation*, marked up as complete through step 5.54.

_____ 6. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-GOP-301, *Hot Standby to Power Operation.*	
CUE	Provide the Applicant with a copy 3-GOP-301, *Hot Standby to Power Operation.* Include Cover Page, Precautions and Limitations, and Steps 5.53 through 5.56; with Steps 5.53 and 5.54 marked-up.	
COMMENT		

NOTE	NOTE *The Manual Mode is only to be used by authorization of the Shift Manager.*	
STEP 2 √	Manually synchronize the generator as follows (N/A if Auto Synchronization was used): Place the Gen Synchronizing East Bus Control in the MAN position. (3-GOP-301, Steps 5.55 & 5.55.1)	SAT _____ UNSAT _____
STANDARD	Applicant places the GENERATOR SYNC EAST BUS BW33 control switch in the MAN position.	
CUE		
COMMENT		

STEP 3	Verify the Inadvertent Protection Scheme Armed amber light above the synchroscope is LIT. (3-GOP-301 step 5.55.2)	SAT _____ UNSAT _____
STANDARD	Applicant observes the Inadvertent Protection Scheme Armed amber light (unlabeled) above the synchroscope is LIT.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical because there are NO verifiable operator actions.	

STEP 4 √	Ensure synchroscope is rotating slowly in the FAST direction. (3-GOP-301 step 5.55.3)	SAT _____ UNSAT _____
STANDARD	Applicant adjusts turbine speed by placing the GENERATOR GOVERNOR XJAN speed changer control switch to the RAISE position, until the synchroscope is rotating slowly in the FAST (clockwise) direction.	
CUE		
COMMENT		

NOTE	**CAUTION** *DO NOT hold GCB control switch in CLOSED position beyond the 12 o'clock position.*	
STEP 5 √	**WHEN** the synchroscope is approximately 11 o'clock, **THEN** manually hold closed the GCB Control Switch until either the GCB is closed or the 12 o'clock position is reached. (3-GOP-301 step 5.55.4)	SAT _____ UNSAT _____
STANDARD	Applicant places and holds the handswitch for the EAST BUS GENERATOR OCB to CLOSE when the synchroscope is between the 11 o'clock and 12 o'clock position on the synchroscope until either the GCB is closed or the 12 o'clock position is reached.	
CUE		
COMMENT		

NOTE	NOTES • *If East bus breaker fails to close, the Power Coordinator in Systems Operations needs to be notified prior to attempting to synchronize with the Mid Bus Breaker, since realignment of the switchyard may be required. (The Systems Operator/Power Coordinator evaluates system conditions to determine if the high line should be isolated before closing the Mid Bus Breaker, and will work with the plant to expedite any necessary switching). [Commitment - Step 2.3.1]* • *If the generator is motored at 2 MW or more for 30 seconds, the reverse power relay will initiate generator lockout.*	
STEP 6	**WHEN** the GCB closes, **THEN** perform the following: Observe the East Bus Breaker indicating lights to verify breaker is closed (red on, green off). (3-GOP-301 step 5.55.5 & 5.55.5.1.)	SAT _____ UNSAT _____
STANDARD	Applicant ensures the East GCB closes by observing that the EAST BUS GENERATOR OCB red CLOSED light is ON.	
CUE		
COMMENT		

STEP 7 √	**IF** main generator load is less than 10 MWe, **THEN** increase load to approximately 10 MWe using the Generator Governor Speed Changer Control. (3-GOP-301 step 5.55.5.2)	SAT _____ UNSAT _____
STANDARD	Applicant raises Main Generator load to approximately 10 MWe, by placing the GENERATOR GOVERNOR speed changer control switch to the RAISE position. **AND** A reverse power trip does NOT occur	
CUE	**TERMINATING CUE:** **When the Applicant has attained a load of 10 to 20 MWE, Evaluator informs the Applicant that another operator will complete the procedure. The JPM is complete.**	
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical if load is >10 MWe after the EAST BUS GENERATOR OCB closes and no adjustments are required.	

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01002002100

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result : Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in MODE 1, 5-6% power.
- The plant is being started up per 3-GOP-301, Hot Standby to Power Operation. Actions are complete up through Step 5.54.
- Main turbine speed is approximately 1794 rpm
- The voltage regulator is in service.
- The Main Generator AUTO Synchronizing Circuit is NOT available.
- The Shift Manager has given authorization to perform a manual synchronization of the main generator.
- The RCO is monitoring Reactor power and the RCS.

Initiating Cue:

- You have been directed to manually synchronize the generator using 3-GOP-301 HOT STANDBY TO POWER OPERATION, step 5.55, and raise load to 10 MW.
- All prerequisites and job briefings have already been completed.

Acknowledge to the examiner when you are ready to begin.

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

This procedure may be affected by a T.C. (Temporary Change) Verify information prior to use.
*Date verified*_____ *Initials*_____

Florida Power & Light Company

Turkey Point Nuclear Plant

Unit 3

3-GOP-301

CAUTION

Performance of this procedure may affect core reactivity.

Title:

Hot Standby to Power Operation

(Continuous Use)

Safety Related Procedure

Responsible Department:	Operations
Revision Number:	5
Issue Date:	4/20/11
Revision Approval Date:	4/19/11

ARs *574481, 591180, 565217, 01600749, 581376, 1614036, 1639210*
PCRs *08-1439, 08-4134, 08-4078, 08-5327, 08-3671, 08-3795, 08-4230, 08-4090, 09-0644, 09-0982, 08-4392, 09-1114, 09-1350, 09-1288, 09-2944, 09-3802, 09-3880*
PC/Ms *83-199, 86-06, 86-200, 87-258, 87-263, 87-264, 87-265, 88-178, 88-486, 89-168, 90-440, 92-040, 92-018, 92-178, 93-032, 93-053, 95-027, 95-047, 95-057, 96-022, 96-086, 99-016, 99-045, 02-031, 02-085, 04-026, 04-112, 04-163, 06-002, 07-019, 08-025, 09-052, 09-051*

W2003:TNM/mr/cls/mr

Rec'd 10/5/11

4.0 PRECAUTIONS/LIMITATIONS

4.1 Criticality should be anticipated anytime when shutdown or control rod banks are being withdrawn or boron dilution is in progress.

4.2 All shutdown rods shall be fully withdrawn before the reactor is made critical.

4.3 Do not make the reactor critical with a moderator temperature coefficient of reactivity more positive than +5 pcm/°F (except as permitted for low power physics tests).

4.4 The approach to criticality shall be guided by plotting inverse count rate ratio versus control rod position. Observe the 1/m plot to assure criticality will not occur below the insertion limit for zero power.

4.5 Before withdrawing any rod bank from the fully inserted position, the group step counters and the rod position indicators for that bank shall meet the control rod position acceptance criteria in 3-OSP-201.1, RO Daily Logs.

4.6 When moving shutdown or control rod banks; the group step counters, RPIs, and all Nuclear Instrumentation Channels shall be closely monitored to verify proper bank movement and bank overlap for control rods.

4.7 The Reactor Coolant System lowest operating loop temperature (Tavg) shall be greater than or equal to 541°F with Keff greater than or equal to 1.0.

4.8 All Reactor coolant loops shall be in operation prior to making the reactor critical, Mode 2. With less than 3 Loops in operation, restore all Loops to operable status or be in hot standby within six (6) hours.

4.9 Before transferring the Rod Control selector from manual to AUTO mode, the control rod banks shall be positioned as required to adjust Tavg within 1.0°F of Tref.

4.10 At power, all rod position indicators and Power Range Nuclear channels shall be periodically monitored for control rod misalignment and abnormal power distribution.

4.11 Every attempt should be made to maintain the Axial Flux Difference within the Operational Space to avoid otherwise unnecessary power reductions; reference 0–NOP–059.09, Operation within the Axial Flux Difference Operational Space.

4.12 Control banks shall be maintained above the respective Rod Bank A-B-C or D Low Limit Alarm by maintaining the required RCS boron concentration.

4.13 When any control rod bank is below the Rod Bank A-B-C or D Extra Low Limit Alarm for greater than one hour, emergency boration shall be initiated using 3-ONOP-046.1, Emergency Boration.

4.14 SUR should not be permitted to exceed a steady state value of 1.0 dpm below the POAH and 0.5 dpm above the POAH.

4.15 If the Steam Dump System is automatically armed by a load rejection and equilibrium conditions are re-established, the Steam Dump Control shall be reset by placing the steam dump to condenser Mode Selector switch to RESET .

4.16 The Steam Pressure Control Dump to Condenser Auto/Manual station shall have a zero output signal prior to placing the Steam Dump to Condenser Mode Selector in MANUAL.

4.17 When the steam dump is in the Manual Mode of operation, then reactor power, Tavg, S/G pressure, and indicated valve position shall be closely monitored.

4.18 When adjusting the Steam Dump Control, adjustments shall be made in small increments, allowing sufficient time between adjustments for valve response.

4.18.1 The valves require approximately 18 seconds to travel full stroke, 0 to 100 percent, when given a modulation signal, and are required to travel 0 to 100 percent open in less than 7 seconds when given a quick-open signal.

4.18.2 All changes should result in an equivalent change in steam demand and reactor power.

4.18.3 Any control adjustment that does not change the demand should be investigated and use of the dump valves discontinued until the problem is resolved.

4.19 When any instrumentation channel is removed from service, the channel shall be removed from control, if required, by use of the appropriate selector switch. Associated bistables shall be tripped as necessary to satisfy the requirements of Technical Specification Table 3.3-1; reference 3-ONOP-049.1, Deviation or Failure of Safety Related or Reactor Protection Channels.

4.20 During secondary plant warmup, steam should be drawn from the steam generator slowly and feedwater additions should be carefully regulated to avoid uncontrolled cooldown of the Reactor Coolant System.

4.21 Main Turbine speed should not be increased above 600 RPM until the RCS temperature is between 544°F and 550°F.

4.22 The operability of Main Feedwater Control Valves, FCV-3-478, 488, and 498, should be checked by stroking through one complete cycle prior to placing the Turbine/Generator on line.

4.23 Serious damage to the Main Generator windings can result from operation of the generator at a terminal voltage greater than 23,100 volts.

4.24 Safety Injection Signals shall not be in a blocked status for any reason other than for intentional, controlled depressurization and cooldown of the Reactor Coolant System as per approved plant procedures.

4.25 During a Post Trip Recovery at EOL, Reactor Engineering Department shall be contacted for startup guidelines when startup is within 4 hours of criticality.

4.26 The following guidelines shall be used after the third (3rd) doubling (i.e., 1/m approximately 0.125) while approaching criticality using the 1/m plot.

4.26.1 If the projected critical rod position is below the insertion limit (105 steps on Bank C), then the control banks should be inserted and the RCS borated as necessary.

4.26.2 If the projected critical rod position deviates from the ECC rod position by more than 300 PCM but less than or equal to 400 PCM, then permission to pull the Reactor critical shall be obtained from the Shift Manager or designee after a review of the ECC calculations.

4.26.3 If the projected critical rod position deviates from the ECC rod position by greater than 400 PCM, but less than or equal to 500 PCM, then permission to pull to criticality shall be obtained from the Reactor Engineering Supervisor or designee.

4.26.4 If the projected critical rod position deviates from the ECC rod position by greater than 500 PCM, then the control banks shall be reinserted and the ECC reevaluated.

1. If the error cannot be determined, permission of the Operations Manager and Reactor Supervisor (or designee) shall be obtained prior to making the reactor critical under the guidance of the 1/m plot.

2. The Reactor shall not be made critical with a difference of greater than or equal to 1000 PCM between the projected critical height and the ECC rod position.

4.27 If all of the following conditions exist, power increases performed under the direction of this procedure should be limited to 3 percent/hour for fuel conditioning:

4.27.1 The plant has not operated with the existing core at or above the intended power level in the last 27 days. Time spent with the unit at zero power does not count towards the 27-day time limit.

4.27.2 Reactor power is between 40 percent and 100 percent of full power.

4.27.3 The plant has not operated at or above the intended power level for at least 72 cumulative hours in any 7-day period.

4.28 Rod withdrawals performed above 50 percent power after a reload and during the fuel conditioning period (Precaution/Limitation 4.27) should be limited to three rod steps/hour. This withdrawal rate is based upon a Westinghouse recommendation and may be relaxed specifically to control axial offset or to perform an incore/excore calibration.

4.29 All work in the Radiation Controlled Area shall be performed in accordance with the requirements of the Radiation Work Permit and ALARA program.

4.30 The Reactor Coolant System hydrogen concentration shall be greater than 15 cc/kg prior to entering Mode 2. If RCS hydrogen is not between 25 and 50 cc/kg within 24 hours after entering Mode 2, then Action Level 1 of 0-ONOP-041.10, Primary Chemistry Deviation from Limits, applies.

4.31 With reactor power below the POAH, reactivity shall not be changed by rod withdrawal and boron dilution at the same time.

4.32 Per Reference Substep 2.1.5.36, Limitation and Conditions for Westinghouse Fuel Operation, the following apply to load increases:

4.32.1 During the initial return to power following a refueling shutdown or following a cold shutdown where fuel assemblies have been handled (e.g., inspection), the following apply:

1. The rate of reactor power increase **between 40 percent and 100 percent** of full power should be less than or equal 3 percent full power/hour, but shall not exceed an increase of:

   a. 4 percent over any 1-hour period

   b. 7 percent over any 2-hour period

   c. 10 percent over any 3-hour period

2. No single step increase in power shall exceed 3 percent full reactor power.

   This ramp rate requirement applies during the initial startup of a reload cycle for that period of time until full power is achieved for 72 cumulative hours out of any seven-day operating period at power. It may also apply for any other power increases during that time period, depending on the maximum power level achieved and length of operation at that power level.

   Specifically this requirement may be removed for reactor power levels at or below a given P (40 percent $<P\leq100$ percent) provided the plant has operated at or above level P for at least 72 cumulative hours out of any seven-day (168 hour) operating period at power (fuel is preconditioned).

   Down time or time at zero power is not considered as operating time.

4.32.2 Once the plant has attained some steady state power level for 72 hours, then load follow operation may be conducted in that cycle up to that power level **without fuel related limitations on ramp rate.** In other words, there are no fuel-related limitations on ramp rates on preconditioned fuel.

4.32.3 Other administrative limitations on ramp rate may be imposed at the discretion of Operations or Reactor Engineering depending on other factors (i.e., possible leaking fuel, time in core life, etc.).

4.33 The following guidelines shall be employed for reduced power operation.

4.33.1 Operation at reduced power levels for greater than 27 days establishes a reduced power threshold.

1. The reduced power threshold is the highest power level at which the reactor has experienced 72 hours of operation in the preceding 30 days.

2. Power increases above the reduced power threshold are limited to 3 percent per hour.

3. Down time or time at zero power is not considered as operating time.

4.34 During Mode 2 operation and at reduced power levels (less than 30 percent) in Mode 1, caution shall be exercised when making Secondary System adjustments which would affect power/reactivity levels.

4.35 Reactor power changes shall be monitored as follows:

4.35.1 Attachment 4, Power Data Sheet, shall be completed during all power changes.

4.35.2 If Reactor Power changes by greater than or equal to 15 percent in a 1-hour period, Chemistry shall be notified to begin sampling the RCS per Technical Specification 4.4.8, Table 4.4-4, Item 6.

4.36 Prior to closing the Reactor Trip Breakers, the DCS Reactor Protection SOE Group shall be checked for abnormalities in the system that may not be indicated on status lights. However, if the DCS Reactor Protection SOE Group is out of service and cannot readily be restored, then I&C shall perform a visual check of reactor trip relays in the reactor protection racks to verify none of the reactor trip relays are in the tripped mode.

4.37 The RCS and pressurizer boron concentration may be equalized at any time using Pressurizer spray and heaters.

4.38 Prior to admitting steam to the turbine, all feedwater heater alarms are required to be cleared or the feedwater heater isolated if the System Engineer suspects tube leakage. This does not apply to the #1 and #2 Heaters up to 50 percent power because high level is expected due to the plant design. [Commitment Step 2.3.9]

4.39 Heater drain pump and condensate pump operation should be optimized to maximize unit efficiency and minimize rejection of heater drains to the condenser, thus minimizing the potential for damage to condenser tubes as a result of impingement. For example, it is desirable to operate as many heater drain pumps as possible and to minimize the number of condensate pumps being run.

4.40 The SGFPs are equipped with recirculation valves that are designed to protect the pump under low demand conditions. The SGFPs are started with respective control switch in OPEN and the recirculation valves open. The recirculation valves operate as follows:

4.40.1 The SGFP recirculation valves will automatically open when flow rate on an operating SGFP reaches the low flow setpoint.

4.40.2 If the SGFP recirculation valves open automatically, the respective control switch must be placed in OPEN/RESET (resets seal-in circuit) and then returned to the CLOSE/AUTO position in order to close the valves.

4.40.3 Opening of a SGFP breaker will close the associated recirculation valves provided their control switch is in the CLOSE/AUTO position.

4.41 The Shift Manager may designate operating bands as necessary based on current plant mode and equipment conditions as needed to allow the operating crew more flexibility. This guidance on operating bands does not allow the violation of Tech Specs or allow the operation near automatic trip setpoints. One example is S/G levels while not in Mode 1 or in unit startup. The program level is 50 percent, so the operating band is set at 45 to 55 percent. This allows the deviation alarm to remain clear, yet still alert the operator when a 5 percent deviation from program occurs, which is the system design.

4.42 For power ascension above 75% during the fuel preconditioning period as defined in Precaution/Limitation 4.27, Axial Flux Difference shall be limited to within ±3% of the target value provided by Reactor Engineering.

4.43 If Turbine Power is greater than or equal to 150 MW and the Power System Stabilizer (PSS) is not in service or becomes disabled, then the Transmission System Operator (TSO) shall be notified within 30 minutes.

4.44 All communications with the Transmission System Operation (TSO) are required to be logged in the Unit Narrative Log. In addition, the log entry for any request from the TSO to adjust Main Generator VARS must either indicate that the request was complied with or give an explanation of why the schedule could not be met.

ALL PREVIOUS STEPS HAVE BEEN INTENTIONALLY OMMITTED.

PLEASE REFER TO THE INITIAL CONDITIONS AND INITIATING CUES.

INIT

NOTE

The following step may be performed as SDTA controllers are adjusted and steam generator levels are stabilized.

5.53.3 Perform the following in preparation for synchronizing the main generator:

1. Verify that the Main Exciter DC Regulator Control is in the full lower position (approximately 10 percent on DC Regulator Control Indicator).

NOTE

The generator leads backup distance relay is susceptible to vibration with the generator field circuit breaker open and may cause a generator lockout and subsequent turbine trip. To prevent this occurrence, the paddle is removed from this relay during the Main Turbine Startup and is installed prior to closing the generator field circuit breaker.

2. Direct SOA to install the relay paddle to restore the generator leads backup distance (LTD) SAM timer relay in Cabinet 3C106 in the Cable Spreading Room.

NOTES

- *Annunciator E 8/2, GEN FIELD FORCING/VOLT REG LIMITING, may come in and clear.*
- *When the exciter field breaker is closed, the exciter amps and generator voltage may vary based on generator conditions, i.e. cold from a refueling outage or relatively hot from a SNO. If exciter amps or generator voltage are not within the specified band, System Engineering shall be contacted for further guidance.*

3. Close the exciter field breaker and verify response on Control Room or local exciter field ammeter between greater than 0 and 90 amps.
4. Verify three generator voltmeter readings are indicating between greater than 0 and 17 KV.
5. Slowly increase generator voltage by raising the DC regulator control in small step changes.
   a. Verify exciter field ammeter responds with each adjustment.
   b. Verify all three generator voltmeters are indicating equal values.

INIT 5.53.3 (Cont'd)

CAUTION

Generator operation greater than 23,100 volts may damage the generator windings. Exciter field current is limited to 135 amps at no-load to ensure acceptable generator voltage.

6. Raise generator voltage until voltage is between 21.5 KV and 22.5 KV on all three phases with exciter field amps between 100 amps and 130 amps on the generator voltmeters and exciter field ammeter. (The Control Room or local exciter field ammeter may be used.)

7. Place the Voltage Regulator Control Switch in the TEST position.

NOTE

The regulator mismatch meter may oscillate about the zero point due to minor speed changes.

8. Slowly adjust the AC regulator control to null the AC-DC regulator mismatch meter.

9. Place the Voltage Regulator Control Switch in the ON position.

10. Place the Generator Synchronizing East Bus Control in the MANUAL position.

11. Adjust the turbine speed using the Generator Governor Speed Changer Control until the synchroscope Indicator is rotating slowly in the FAST direction.

12. Adjust the AC regulator control to set the incoming voltage equal to the running voltage.

5.53.4 **WHEN** reactor power is between 5 and 7 percent, **THEN** verify the following parameters are stable or indicate a very slow rate of change:
[Commitment Step 2.3.11 - CAPR]

- Tavg (549° to 551°F)
- PRZ level (on program for Tavg)
- Steam Generator levels (46 to 54 percent)

INIT

NOTES

- *If auto synchronizing is inoperable or undesirable, the Shift Manager may authorize the use of Manual Synchronizing Mode.*
- *In Auto Mode, the turbine speed and generator voltage are automatically adjusted, which may require several minutes to satisfy the system logic.*
- *If the auto synchronizing pushbutton is held for greater than 10 seconds, the auto-synchronizing logic will be disabled before a second auto-synchronizing attempt at breaker closure is initiated.*

N/A

5.54 Perform auto synchronization as follows: (N/A if manual mode is used.)

N/A 5.54.1 Place the Gen Synchronizing East Bus Control to the AUTO position.

N/A 5.54.2 Verify East Bus Breaker white light above synchroscope flashes at 12 o'clock position, indicating synchronized conditions.

N/A 5.54.3 Verify the Inadvertent Protection Scheme Armed amber light above the synchroscope is LIT.

NOTES

- *If East Bus Breaker fails to close, the Power Coordinator in Systems Operations needs to be notified prior to attempting to synchronize with the Mid Bus Breaker, since realignment of the switchyard may be required. (The Systems Operator/Power Coordinator evaluates system conditions to determine if the high line should be isolated before closing the Mid Bus Breaker, and will work with the plant to expedite any necessary switching.) [Commitment - Step 2.3.1]*
- *If the generator is motored at 2 MW or more incoming for 30 seconds, the reverse power relay will initiate generator lockout.*

N/A 5.54.4 Before the synchroscope reaches the 11 o'clock position, depress and hold the AUTO Synchronizing Button.

INIT

5.54.5 **WHEN** the GCB closes, **THEN** perform the following:

N/A 1. Observe the East Bus Breaker indicating lights to verify breaker closure (red on; green off).

2. **IF** main generator load is less then 10 MWe, **THEN** increase load to approximately 10 MWe using the Generator Governor Speed Changer Control.

N/A 3. Place synchroscope in the OFF position.

4. Match the flag on the East Bus Generator GCB Control Switch by taking the switch to CLOSE.

N/A 5. Verify the Inadvertent Protection Scheme Armed amber light above the synchroscope is OFF.

N/A 6. Verify Generator Amps are within 2 percent on all three phases.

NOTE

The Manual Mode is only to be used by authorization of the Shift Manager.

5.55 Manually synchronize the generator as follows (N/A if Auto Synchronization was used):

____ 5.55.1 Place the Gen Synchronizing East Bus Control in the MAN position.

____ 5.55.2 Verify the Inadvertent Protection Scheme Armed amber light above the synchroscope is LIT.

____ 5.55.3 Ensure synchroscope is rotating slowly in the FAST direction.

CAUTION

DO NOT hold GCB control switch in CLOSED position beyond the 12 o'clock position.

____ 5.55.4 **WHEN** the synchroscope is approximately 11 o'clock, **THEN** manually hold closed the GCB Control Switch until either the GCB is closed or the 12 o'clock position is reached.

INIT

NOTES

- *If East bus breaker fails to close, the Power Coordinator in Systems Operations needs to be notified prior to attempting to synchronize with the Mid Bus Breaker, since realignment of the switchyard may be required. (The Systems Operator/Power Coordinator evaluates system conditions to determine if the high line should be isolated before closing the Mid Bus Breaker, and will work with the plant to expedite any necessary switching). [Commitment - Step 2.3.1]*
- *If the generator is motored at 2 MW or more for 30 seconds, the reverse power relay will initiate generator lockout.*

5.55.5 **WHEN** the GCB closes, **THEN** perform the following:

____ 1. Observe the East Bus Breaker indicating lights to verify breaker is closed (red on, green off).

____ 2. **IF** main generator load is less than 10 MWe, **THEN** increase load to approximately 10 MWe using the Generator Governor Speed Changer Control.

____ 3. Place synchroscope in the OFF position.

____ 4. Verify the Inadvertent Protection Scheme Armed amber light above the synchroscope is OFF.

____ 5. Verify Generator Amps are within 2 percent on all three phases.

NOTES

- *To prevent excessive changes in S/G pressure and level, the SDTA valves should be checked to verify that they are responding prior to each additional load step.*
- *Increasing main generator load shall be coordinated with the operator controlling steam generator levels.*

5.56 Perform the following to increase turbine load: [Commitment Step 2.3.11 - CAPR]

____ 5.56.1 Monitor automatic control program values using the Plant Curve Book Section IV, Figure 5, **AND** notify the Shift Manager of any unexpected deviations.

Facility:	Turkey Point	Task No:	01059017200
Task Title:	JPM: Test Source Range Nuclear Instrument	JPM No:	01059017201
K/A Reference:	015 A4.01 RO 3.9 SRO 3.9		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance		Actual Performance	X
Classroom		Simulator X	Plant

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The Unit is in MODE 3.
- The SM has authorized performance of 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*, for N-32.
- The previous shift operator has completed Steps 7.3.2 through 7.3.2.25.e.
- I&C support is no longer required.
- At the start of the test, N-32 read 110 cps.
- Containment is closed with no personnel inside containment.
- The control rod drive system is NOT capable of withdrawal at this time.

Initiating Cue:

- The US has directed you to complete Steps 7.3.2.26 through Step 7.3.2.34 of 3-OSP-059.1.

Rec'd 10/5/11

Task Standard:

- Setpoints are verified to be within limits
- Actuation of protection features is verified.

Required Materials:

- 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*, marked-up to show completion up through Step 7.3.2.25.e.
- 3-OSP-059.1, marked-up Attachment 2.

General References:

- 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*

Time Critical Task: No

Validation Time: 25 minutes

SIMULATOR SETUP

_____ 1. Reset to IC 197 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Open Lesson JPM-01059017201 and Execute.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. Provide a copy of 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*, marked-up to show completion up through Step 7.3.2.25.

Also provide Applicant with a copy of a marked-up Attachment 2.

_____ 7. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time:** _____

STEP 1	Obtain required materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains the marked-up copy of 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test.*	
CUE	Provide Applicant with a copy of 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*, marked-up to show completion up through Step 7.3.2.25.e. Also provide Applicant with a copy of a marked-up Attachment 2.	
COMMENT		

STEP 2 √	Place HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) to BLOCK. (3-OSP-059.1, Step 7.3.2.26)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) clockwise to the BLOCK position.	
CUE		
COMMENT		

STEP 3	Verify Annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is ON. (3-OSP-059.1, Step 7.3.2.27)	SAT _____ UNSAT _____
STANDARD	Applicant notes that annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is ON.	
CUE		
COMMENT		

STEP 4	Announce distinctly over the plant P.A. phone, **ATTENTION ALL PERSONNEL, THE CONTAINMENT EVACUATION ALARM TEST IS COMPLETE**. (Mark N/A if no personnel are in containment). (3-OSP-059.1, Step 7.3.2.28)	SAT _____ UNSAT _____
STANDARD	Since no personnel are in containment, Applicant marks this step N/A.	
CUE		
COMMENT		

STEP 5 √	Adjust LEVEL ADJ potentiometer (NIS panel, N-32) slowly clockwise until LEVEL TRIP status light (NIS panel, N-32) turns ON. (3-OSP-059.1, Step 7.3.2.29)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the LEVEL ADJ potentiometer (NIS panel, N-32) slowly clockwise until LEVEL TRIP status light (NIS panel, N-32) turns ON.	
CUE		
COMMENT		

STEP 6 √	Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for Level Trip bistable trip point on Attachment 2. (3-OSP-059.1, Step 7.3.2.30.a)	SAT _____ UNSAT _____
STANDARD	Applicant records **between 9.3 X 10^4 and 1.3 X 10^5** in the blank for Step 7.3.2.30 on Attachment 2. Tolerance based on ± ½ of the smallest increment on a log scale.	
CUE		
COMMENT		

STEP 7	Verify REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is ON. (3-OSP-059.1, Step 7.3.2.30.b)	SAT _____ UNSAT _____
STANDARD	Applicant notes that the REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is ON	
CUE		
COMMENT		

STEP 8 √	Adjust LEVEL ADJ potentiometer (NIS panel N-32) slowly counterclockwise until LEVEL TRIP status light (NIS panel, N-32) turns OFF. (3-OSP-059.1, Step 7.3.2.31)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the LEVEL ADJ potentiometer (NIS panel N-32) slowly counterclockwise until LEVEL TRIP status light (NIS panel, N-32) turns OFF.	
CUE		
COMMENT		

STEP 9 √	Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for Level Trip bistable reset point on Attachment 2. (3-OSP-059.1, Step 7.3.2.32.a)	SAT _____ UNSAT _____
STANDARD	Applicant records **between 4.3 X 10^4 and 5.3 X 10^4** in the blank for Step 7.3.2.32 on Attachment 2. Tolerance based on ± ½ of the smallest increment on a log scale.	
CUE		
COMMENT		

STEP 10	Verify REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is OFF. (3-OSP-059.1, Step 7.3.2.32.b)	SAT _____ UNSAT _____
STANDARD	Applicant notes that the REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is OFF.	
CUE		
COMMENT		

STEP 11 √	Adjust LEVEL ADJ potentiometer (NIS panel, N-32) fully counterclockwise. (3-OSP-059.1, Step 7.3.2.33)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the LEVEL ADJ potentiometer (NIS panel, N-32) fully counterclockwise. Also may note that the potentiometer "reading" is near 0.0.	
CUE		
COMMENT		

STEP 12 √	Place OPERATION SELECTOR switch (NIS panel, N-32) to NORMAL. (3-OSP-059.1, Step 7.3.2.34)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the OPERATION SELECTOR switch (NIS panel, N-32) counterclockwise to the NORMAL position.	
CUE		
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01059017201

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- The Unit is in MODE 3.
- The SM has authorized performance of 3-OSP-059.1, *Source Range Nuclear Instrumentation Analog Channel Operational Test*, for N-32.
- The previous shift operator has completed Steps 7.3.2 through 7.3.2.25.
- I&C support is no longer required.
- At the start of the test, N-32 read 110 cps.
- Containment is closed with no personnel inside containment.
- The control rod drive system is NOT capable of withdrawal at this time.

Initiating Cue:

- The US has directed you to complete Steps 7.3.2.26 through Step 7.3.2.34 of 3-OSP-059.1

Acknowledge to the examiner when you are ready to begin.

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

ATTACHMENT 2
(Page 1 of 3)

SOURCE RANGE CHANNEL N-32 TEST DATA (SHUTDOWN)

QA RECORD PAGE

(Page 1 of 3)

NOTE

The NIS Drawer Meter is to be used for channel operability requirements. Deficiencies in the console indications should be brought to the attention of the I&C Department, with appropriate prioritization with respect to plant mode.

Ref. Step

7.3.2.14 Operation Selector switch range verification.

NOTE

The symbol +xxx in the acceptance criteria represents greater than $1.0x10^6$ CPS by an amount less than or equal to the meter deflection between $8x10^5$ CPS and $1.0x10^6$ CPS.

OPERATION SELECTOR POSITION	NIS Meter N-32	CONSOLE* Meter N-3-32	CONSOLE* Recorder NR-3-45, Channel S2
60 CPS Acceptance Criteria:	60	70 (50 to 75 CPS)	63
10^3 CPS Acceptance Criteria:	900	1000 (8×10^2 to 1.2×10^3 CPS)	950
10^5 CPS Acceptance Criteria:	1×10^5	1.1×10^5 (8×10^4 to 1.2×10^5 CPS)	1.1×10^5
10^6 CPS Acceptance Criteria:	1×10^6	1×10^6 (8×10^5 to +xxx)	1.2×10^6
10 CPS - PREAMP (No Acceptance Criteria)	10	11	11
$10.24x10^3$ CPS - PREAMP (No Acceptance Criteria)	1×10^4	1.1×10^4	1.1×10^4

Return to Step 7.3.2.15

Rec'd 10/3/11

ATTACHMENT 2
(Page 2 of 3)

SOURCE RANGE CHANNEL N-32 TEST DATA (Shutdown)

QA RECORD PAGE

(Page 2 of 3)

7.3.2.23 High Flux at Shutdown bistable trip point, N-32

Source Range 800 CPS

7.3.2.25 High Flux at Shutdown bistable reset point, N-32

Source Range 400 CPS

7.3.2.30 Level Trip bistable trip point, N-32

Source Range _____ CPS

Acceptance Criteria ($\leq 10^5$ CPS)

* FOR REVIEW ONLY

7.3.2.32 Level Trip bistable reset point, N-32

Source Range _____ CPS

Acceptance Criteria (4.1×10^4 to 6.2×10^4 CPS)

Acceptance Criteria specified in this Attachment has been satisfied.

Results Satisfactory _____ _____
Signature *Date*

IF results are unsatisfactory, **THEN** declare the channel inoperable and perform actions required by 3-ONOP-059.5, SOURCE RANGE NUCLEAR INSTRUMENTATION MALFUNCTION.

NOTE

If channel(s) did not meet acceptance criteria, then notify I&C to perform 0-ADM-724, Instrumentation Protection Channel Determination of Channel Operability, for the failed channels. [Commitment - Step 2.3.1]

ATTACHMENT 2
(Page 3 of 3)

SOURCE RANGE CHANNEL N-32 TEST DATA (Shutdown)

QA RECORD PAGE

(Page 3 of 3)

REMARKS: _____

_____

_____

_____

_____

_____

_____

PERFORMED BY (Print)	INITIALS
_____	_____
_____	_____
_____	_____

REVIEWED BY: _____
Shift Manager or SRO Designee

INIT

Date/Time Started: TODAY / XXXX

7.3.2 Perform testing of **SOURCE RANGE N-32** as follows:

1. At NIS panel, N-32 drawer, record the following:

   a. AVERAGE SOURCE RANGE CPS NEUTRON LEVEL 110.

   b. SOURCE RANGE DETECTOR VOLTS (15.6) x 100 1,560.

N/A 2. **IF** in Operational Mode 4, Hot Shutdown; Mode 5, Cold Shutdown or Mode 6, Refueling; **THEN** verify the High Flux at Shutdown alarm setpoint is valid for the existing Source Range Neutron Level as follows:

N/A a. Multiply CPS by $10^{1/2}$ (approximately 3.16) to calculate the High Flux at Shutdown setpoint at one-half decade above SOURCE RANGE CPS NEUTRON LEVEL recorded in Substep 7.3.2.1: (Mark N/A if core is off loaded)

3.16 x CPS = _____ Alarm CPS

N/A (1) **IF** core is off loaded, **THEN** use the High Flux at Shutdown alarm setpoint that was used immediately prior to core off-load **AND** record below:

High Flux at Shutdown alarm setpoint:
_____ Alarm CPS

N/A b. Record the current High Flux at Shutdown alarm setpoint.

_____CPS

N/A c. Compare the Alarm CPS from above with the current High Flux at Shutdown alarm setpoint utilizing Enclosure 1.

N/A (1) **IF** the Alarm CPS is within the currently set ALARM VALUE Acceptance Criteria, **THEN** the alarm setpoint is satisfactory.

N/A (2) **IF** the Alarm CPS is **NOT** within the currently set ALARM VALUE Acceptance Criteria, **THEN** perform 3-OSP-059.6, High Flux at Shutdown for Source Range Channel N-32, prior to proceeding with this procedure.

N/A d. **IF** 3-OSP-059.6 was performed due to Step 7.3.2.2.c.(2), **THEN** perform the following:

N/A (1) Record the new High Flux at Shutdown alarm setpoint.

_____CPS

N/A (2) Compare the Alarm CPS from above with the new High Flux at Shutdown alarm setpoint utilizing Enclosure 1.

N/A (3) **IF** the Alarm CPS is within the currently set ALARM VALUE Acceptance Criteria, **THEN** the alarm setpoint is satisfactory.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

(3.) Position an NIS recorder to monitor source range N-32.

(4.) At AUDIO COUNT RATE CHANNEL (NIS Panel, N-34), place CHANNEL SELECTOR switch to SR N31.

N/A (a.) **IF** in Operational Mode 6 **OR** preparing to enter Mode 6, Refueling; **THEN** verify audible indication in the Control Room and Containment.

(5.) At NIS Panel, N-32, verify the following:

(a.) INSTRUMENT POWER ON status light ON.

(b.) CONTROL POWER ON status light ON.

(c.) CHANNEL ON TEST status light OFF.

(d.) LOSS OF DETECTOR VOLT status light OFF.

(e.) LEVEL TRIP status light OFF.

(f.) LEVEL TRIP BYPASS status light OFF.

(g.) HIGH FLUX AT SHUTDOWN status light OFF.

(h.) BISTABLE TRIP SPARE status light OFF.

(6.) Place LEVEL TRIP switch (NIS panel, N-32) to BYPASS.

(7.) Verify the following:

(a.) LEVEL TRIP BYPASS status light (NIS panel, N-32) ON.

(b.) N-32 IN BYPASS status light (VPA) ON.

(c.) Annunciator B 8/4, NIS TRIP BYPASSED, is ON.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

RO 8. Place HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) to BLOCK.

RO 9. Verify Annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is ON.

10. Have I&C personnel perform the following steps:

RO a. Obtain keys for access to rear of rack 60, open rack door.

RO b. Install jumper between TB 223-1 and TB 223-2.

I&C: _____ I MIERET
Jumper Installed *Print*

I&C/OPS: _____ R BONES
Independent Verification *Print*

11. Verify the following:

RO a. LOSS OF DETECTOR VOLT status light is ON.

RO b. Annunciator B 4/3, SOURCE RANGE LOSS OF DETECTOR VOLTAGE, is ON.

RO 12. Place OPERATION SELECTOR switch (NIS panel, N-32) to 60 CPS.

13. Verify the following:

RO a. CHANNEL ON TEST status light (NIS panel, N-32) is ON.

RO b. Annunciator B 7/3, NIS CHANNEL IN TEST is ON.

RO 14. Place the OPERATION SELECTOR switch (NIS panel, N-32) in the positions listed in Attachment 2, recording data as indicated.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

15. Have I&C personnel perform the following:

a. Remove the jumper installed in Substep 7.3.2.10 between TB 223-1 and TB 223-2.

I&C: _____ I MIERET
Jumper Removed *Print*

I&C/OPS: _____ R BONES
Independent Verification *Print*

16. Verify the following:

a. LOSS OF DETECTOR VOLT status light is OFF.

b. Annunciator B 4/3, SOURCE RANGE LOSS OF DETECTOR VOLTAGE, is OFF.

17. Verify LEVEL ADJ potentiometer (NIS panel, N-32) is fully counterclockwise.

18. Place the OPERATION SELECTOR switch (NIS panel, N-32) to LEVEL ADJ.

NOTE

Plant P.A. phone announcements concerning the containment Evacuation Alarm actuation during High Flux at Shutdown alarm testing are necessary if personnel are in containment.

N/A

19. Notify Outage Control Center that containment evacuation alarm will be tested **AND** announce distinctly over the plant P.A. phone, **ATTENTION ALL PERSONNEL, THE CONTAINMENT EVACUATION ALARM IS BEING TESTED.** (Mark N/A if no personnel are in containment.)

20. Place HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) to NORMAL.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

Re 21. Verify Annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is OFF (Mark N/A if Annunciator B 4/2 is ON due to Source Range N-31, HIGH FLUX AT SHUTDOWN switch in BLOCK).

Re 22. Adjust LEVEL ADJ potentiometer (NIS panel, N-32) slowly clockwise until HIGH FLUX AT SHUTDOWN status light (NIS panel, N-32) turns ON.

23. Perform the following:

Re a. Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for High Flux at Shutdown bistable trip point on Attachment 2.

Re b. Verify HIGH FLUX AT SHUTDOWN status light (NIS panel, N-32) is ON.

Re c. Verify Annunciator B 4/1, SOURCE RANGE HI FLUX AT SHUTDOWN, is ON.

N/A d. Verify containment Evacuation Alarm is ON. (Mark N/A if no personnel are in containment).

Re 24. Adjust LEVEL ADJ potentiometer (NIS panel N-32) slowly counterclockwise until HIGH FLUX AT SHUTDOWN status light (NIS panel, N-32) turns OFF.

25. Perform the following:

Re a. Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for High Flux at Shutdown bistable reset point on Attachment 2.

Re b. Verify HIGH FLUX AT SHUTDOWN status light (NIS panel, N-32) is OFF.

Re c. Verify Annunciator B 4/1, SOURCE RANGE HI FLUX AT SHUTDOWN, is OFF.

N/A d. Verify Containment Evacuation Alarm is OFF (Mark N/A if no personnel are in containment).

Re e. Verify High Flux at Shutdown bistable reset point is within acceptance criteria range of Enclosure 1.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

____ 26. Place HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) to BLOCK.

____ 27. Verify Annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is ON.

____ 28. Announce distinctly over the plant P.A. phone, **ATTENTION ALL PERSONNEL, THE CONTAINMENT EVACUATION ALARM TEST IS COMPLETE**. (Mark N/A if no personnel are in containment).

____ 29. Adjust LEVEL ADJ potentiometer (NIS panel, N-32) slowly clockwise until LEVEL TRIP status light (NIS panel, N-32) turns ON.

30. Perform the following:

____ a. Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for Level Trip bistable trip point on Attachment 2.

____ b. Verify REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is ON.

____ 31. Adjust LEVEL ADJ potentiometer (NIS panel N-32) slowly counterclockwise until LEVEL TRIP status light (NIS panel, N-32) turns OFF.

32. Perform the following:

____ a. Record SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) for Level Trip bistable reset point on Attachment 2.

____ b. Verify REACTOR PROTECTION LOGIC status light (VPB), SOURCE RANGE HI FLUX NC32D is OFF.

____ 33. Adjust LEVEL ADJ potentiometer (NIS panel, N-32) fully counterclockwise.

____ 34. Place OPERATION SELECTOR switch (NIS panel, N-32) to NORMAL.

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

____ 35. Verify SOURCE RANGE CPS NEUTRON LEVEL (NIS panel, N-32) indication returns to approximately the CPS level recorded in Substep 7.3.2.1 of this test.

36. At NIS panel, N-32, verify the following:

____ a. INSTRUMENT POWER ON status light ON.

____ b. CONTROL POWER ON status light ON.

____ c. CHANNEL ON TEST status light OFF.

____ d. LOSS OF DETECTOR VOLT. status light OFF.

____ e. LEVEL TRIP status light OFF.

____ f. HIGH FLUX AT SHUTDOWN status light OFF.

____ g. BISTABLE TRIP SPARE status light OFF.

____ 37. Verify Annunciator B 7/3, NIS CHANNEL IN TEST, is OFF.

____ 38. Place HIGH FLUX AT SHUTDOWN switch (NIS panel, N-32) to NORMAL.

____ 39. Verify Annunciator B 4/2, SOURCE RANGE HI FLUX AT SHUTDOWN BLOCKED, is OFF (Mark N/A if Annunciator B 4/2 is ON due to Source Range N-31, HIGH FLUX AT SHUTDOWN switch in BLOCK).

___ ____ 40. Place LEVEL TRIP switch (NIS panel, N-32) to NORMAL.

41. Verify the following:

____ a. LEVEL TRIP BYPASS status light (NIS panel, N-32) is OFF.

____ b. N-32 IN BYPASS status light (VPA) is OFF.

____ c. Annunciator B 8/4, NIS TRIP BYPASSED, is OFF. (Mark N/A if Annunciator B 8/4 is ON due to another NIS channel in BYPASS).

INITIALS
CK'D VERIF

7.3.2 (Cont'd)

____ 42. Position the NIS recorders to monitor the highest reading source range and the highest reading intermediate range channels.

____ ____ 43. **IF** in Mode 6, **OR** preparing to enter Mode 6, **THEN** place the Audio Count Rate Channel Selector Switch to an operable channel.

7.3.3 **IF** in Mode 3, 4, or 5 AND reactor trip breakers are closed AND control rod drive system is capable of rod withdrawal, **THEN** perform Attachment 5.

Date/Time Completed: _____ / _____

PERFORMED BY (Print)	INITIALS	VERIFIED BY (Print)	INITIALS
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

REVIEWED BY: _____
Shift Manager or SRO Designee

ATTACHMENT 2
(Page 1 of 3)

KEY
2011 PTN
NRC Exam
RO+SRO JPM-G

SOURCE RANGE CHANNEL N-32 TEST DATA (SHUTDOWN)

QA RECORD PAGE

(Page 1 of 3)

NOTE

The NIS Drawer Meter is to be used for channel operability requirements. Deficiencies in the console indications should be brought to the attention of the I&C Department, with appropriate prioritization with respect to plant mode.

Ref. Step 7.3.2.14 Operation Selector switch range verification.

NOTE

The symbol +xxx in the acceptance criteria represents greater than $1.0x10^6$ CPS by an amount less than or equal to the meter deflection between $8x10^5$ CPS and $1.0x10^6$ CPS.

OPERATION SELECTOR POSITION	NIS Meter N-32	CONSOLE* Meter N-3-32	CONSOLE* Recorder NR-3-45, Channel S2
60 CPS Acceptance Criteria:	60	70 (50 to 75 CPS)	63
10^3 CPS Acceptance Criteria:	900	1000 (8×10^2 to 1.2×10^3 CPS)	950
10^5 CPS Acceptance Criteria:	1×10^5	1.1×10^5 (8×10^4 to 1.2×10^5 CPS)	1.1×10^5
10^6 CPS Acceptance Criteria:	1×10^6	1×10^6 (8×10^5 to +xxx)	1.2×10^6
10 CPS - PREAMP (No Acceptance Criteria)	10	11	11
$10.24x10^3$ CPS - PREAMP (No Acceptance Criteria)	1×10^4	1.1×10^4	1.1×10^4

Return to Step 7.3.2.15

Rec'd 10/5/11

ATTACHMENT 2
(Page 2 of 3)

SOURCE RANGE CHANNEL N-32 TEST DATA (Shutdown)

QA RECORD PAGE

(Page 2 of 3)

7.3.2.23 High Flux at Shutdown bistable trip point, N-32

Source Range 800 CPS

7.3.2.25 High Flux at Shutdown bistable reset point, N-32

Source Range 400 CPS

7.3.2.30 Level Trip bistable trip point, N-32

Source Range _____ CPS

between 9.3×10^4 and 1.3×10^5 ($\pm$ 1/2 smallest increment)

Acceptance Criteria ($\leq 10^5$ CPS)

* FOR REVIEW ONLY

7.3.2.32 Level Trip bistable reset point, N-32

Source Range _____ CPS

between 4.3×10^4 and 5.3×10^4 ($\pm$ 1/2 smallest increment)

Acceptance Criteria (4.1×10^4 to 6.2×10^4 CPS)

Acceptance Criteria specified in this Attachment has been satisfied.

Results Satisfactory _____ _____
Signature *Date*

IF results are unsatisfactory, **THEN** declare the channel inoperable and perform actions required by 3-ONOP-059.5, SOURCE RANGE NUCLEAR INSTRUMENTATION MALFUNCTION.

NOTE

If channel(s) did not meet acceptance criteria, then notify I&C to perform 0-ADM-724, Instrumentation Protection Channel Determination of Channel Operability, for the failed channels. [Commitment - Step 2.3.1]

ATTACHMENT 2
(Page 3 of 3)

SOURCE RANGE CHANNEL N-32 TEST DATA (Shutdown)

QA RECORD PAGE

(Page 3 of 3)

REMARKS: _____

PERFORMED BY (Print)	INITIALS
_____	_____
_____	_____
_____	_____

REVIEWED BY: _____
Shift Manager or SRO Designee

Facility:	Turkey Point	Task No:	01030008300
Task Title:	JPM: Respond to Component Cooling Water System Malfunctions	JPM No:	01030008303
K/A Reference:	001 A2.03 RO 3.5 SRO 4.2		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of testing:			
Simulated Performance		Actual Performance	X
Classroom		Simulator X	Plant

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3
- Unit 4 is in mode 1 at 100% power
- 3A CCW pump is out of service and breaker is racked out.

Initiating Cue:

- You are to respond to plant conditions as the Unit #3 Reactor Operator.

rec'd 10/5/11

Task Standard(s)

- 3-ONOP-030 completed through stopping RCPs, isolating letdown and directing alignment of emergency cooling to charging pump.

Required Material(s)

- 3-ARP-097.CR.H, *Control Room Annunciator Response – Panel H*
- 3-ONOP-030, *Component Cooling Water Malfunction*

Reference(s)

- 3-ARP-097.CR.H, *Control Room Annunciator Response – Panel H*
- 3-ONOP-030, *Component Cooling Water Malfunction*

Terminating Cue(s)

- 3-ONOP-030, *Component Cooling Water Malfunction*, Step 3 RNO is complete.

SIMULATOR SETUP

_____ 1. Reset to IC 198 or equivalent IC.

_____ 2. Place simulator in RUN.

_____ 3. Open Lesson JPM-01030008303 and Execute.

_____ 4. Ensure Simulator Operator Checklist is complete.

_____ 5. Acknowledge alarms and place simulator in FREEZE.

_____ 6. Provide a copy of 3-ARP-097.CR.H and 3-ONOP-030, *Component Cooling Water Malfunction.*

_____ 7. When the last performance of this JPM is completed for the day, delete any temporary ICs that were created and delete the contents of the Recycle Bin.

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant acknowledges annunciators and obtains 3-ARP-097.CR.H, for annunciator H-8/1, 2, or 3; OR 3-ONOP-030, *Component Cooling Water Malfunction*.	
CUE	Provide a copy of 3-ARP-097.CR.H and 3-ONOP-030, *Component Cooling Water Malfunction*.	
COMMENT		
NOTE	**EVALUATOR NOTES:** Applicant may directly enter 3-ONOP-030, *Component Cooling Water Malfunction*. For this reason, use of the ARP is NOT critical. Applicant may recognize high amps on 3B CCW pump and manually trip the pump. Otherwise, 3B CCW pump will automatically trip on overcurrent due to the failed bearing. Either behavior is acceptable. If the ARP is entered, the Applicant may attempt to start 3C CCW pump but the pump will fail to start.	

NOTE	**CAUTION** *If any RCP bearing temperature annunciator alarm actuates AND its associated motor bearing temperature is greater than 195°F, trip the reactor and stop the affected RCPs.* **NOTE** *Foldout page should be monitored throughout this procedure.*	
STEP 2	Verify Power To 4KV Bus 3D Maintain 4KV Bus 3D energized - ALIGNED TO AN ENERGIZED 4KV BUS (3-ONOP-030, Step 1 & 1.a.)	SAT _____ UNSAT _____
STANDARD	Applicant verifies that 4KV Bus 3D is energized by observing that Bus 3B Load Centers are energized and that the breakers from the 3B 4KV bus to the 3D 4KV bus are closed.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** The Applicant may perform actions from the Foldout page, which if completed, would bypass this step, if this occurs, go to step 7.	

STEP 3	Verify Component Cooling Water Pump(s) in service. (3-ONOP-030, Step 2)	SAT _____ UNSAT _____
STANDARD	Applicant notes that NO CCW pumps are in service, then transitions to the RNO column.	
CUE	**BOOTH OPERATOR CUE:** Acknowledge orders / request if required.	
COMMENT		
NOTE	**EVALUATOR NOTES:** The Applicant may have attempted to start the 3C CCW pump using the ARP in step 1. Applicant may make calls to the field to attempt local start of 3C CCW pump. Applicant may also dispatch an operator to investigate the CCW pumps and breakers. Applicant may also instruct the WCC SRO to attempt to restore 3A CCW pump as soon as possible.	

STEP 4	**IF** starting an idle CCW pump will **NOT** overload an EDG, **THEN** start CCW pumps as necessary to establish flow in both headers. (3-ONOP-030, RNO Step 2.a)	SAT _____ UNSAT _____
STANDARD	Applicant attempts to manually start the 3C CCW pump. Notes that the pump will not start and informs the US.	
CUE	**BOOTH OPERATOR CUE:** Acknowledge orders / request if required	
COMMENT		
NOTE	**EVALUATOR NOTES:** The Applicant may have attempted to start the 3C CCW pump using the ARP in step 1. Applicant may make calls to the field to attempt local start of 3C CCW pump. Applicant may also dispatch an operator to investigate the CCW pumps and breakers. Applicant may also instruct the WCC SRO to attempt to restore 3A CCW pump as soon as possible. This is one of the Alternate Path aspects of this JPM.	

STEP 5	Verify Flow In Both Component Cooling Water Headers – NORMAL • FT-3-613A for header A • FT-3-613B for header B (3-ONOP-030, Step 3)	SAT _____ UNSAT _____
STANDARD	Applicant checks A CCW HDR FLOW FI-3-613A & B CCW HDR FLOW FI-3-613B and notes that both indicators are reading 0 GPM. Transitions to the RNO column.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical since there are no verifiable operator actions.	

STEP 6 √	**IF** CCW flow to RCPs can **NOT** be established, **THEN** manually trip the reactor **AND** verify reactor trip using the EOP Network, **AND** then stop all RCPs **AND** perform the following: (3-ONOP-030, RNO Step 3.a.)	SAT _____ UNSAT _____
STANDARD	Applicant observes that the Reactor is already tripped. Applicant trips all three RCPs by placing their control switches in the STOP position. Notes that the green STOP light is ON and the red RUN light is OFF for all three RCPs. **OR** Per 3-ONOP-030, Foldout Page, Item 1.A, Applicant may trip RCPs prior to RNO Step 3.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** Applicant should acknowledge that the Reactor was previously tripped and re-verification of trip is not warranted.	

STEP 7 √	Isolate Letdown and Excess Letdown (3-ONOP-030, RNO Step 3.a.1.)	SAT _____ UNSAT _____
STANDARD	Applicant isolates **Letdown** by placing the handswitch for the following valves in the CLOSE position. **EITHER:** • CV-3-204, L/D FROM RHX. ISOL. VALVE **OR** • LCV-3-460, HIGH PRESS. L/D ISOL. VLV. FROM LOOP B COLD LEG **OR** • BOTH CV-3-200A, 45 GPM L/D ISOLATION VALVE and CV-3-200B, 60 GPM L/D ISOLATION VALVE Notes that the green CLOSED light is ON and the red OPEN light is OFF for each of the above valves. Applicant verifies Excess Letdown is already isolated by observing that the green CLOSED light is ON and the red OPEN light is OFF for the following: • CV-3-387, EXCESS L/D ISOL. VLV. FROM COLD LEG TO EXCESS L/D HX. • CV-3-389, EXCESS L/D FROM HX. TO VCT OR RCDT. **OR** Per 3-ONOP-030, Foldout Page, Item 1.A, Applicant may isolate Letdown and Excess Letdown (per the above) prior to RNO Step 3.a.1.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** Applicant should verify excess letdown was previously isolated. Verification of excess letdown being isolated is NOT critical since there are no verifiable operator actions.	

STEP 8 √	**IF** any charging pump is running, **THEN** operate at maximum speed until Attachment 1 is completed. (3-ONOP-030, RNO Step 3.a.2.)	SAT _____ UNSAT _____
STANDARD	Applicant takes the controller(s) for Charging Pumps 3A and 3C to manual by depressing the MAN pushbutton on the controller(s). Notes the white MAN light is LIT and the white AUTO light is OFF. Applicant raises the controller output to maximum by depressing the ⮝ pushbutton on the controller until the DEMAND METER is at 100%. Annunciator CHARGING PUMP HI SPEED (G 1/2) will actuate when the pump is at maximum speed.	
CUE		
COMMENT		
NOTE	**EVALUATOR NOTE:** The Applicant may stop one charging pump based on plant need. ONLY the Charging pump(s) that are running are operated at a maximum speed.	

STEP 9	Dispatch an operator to establish emergency cooling water to desired charging pump using Attachment 1. (3-ONOP-030, RNO Step 3.a.3.)	SAT _____ UNSAT _____
STANDARD	Applicant contacts a field operator and directs the operator to perform Attachment 1 of 3-ONOP-030 for the running pump.	
CUE	**TERMINATING CUE:** **Evaluator informs the Applicant that another operator will continue in this procedure. The JPM is complete.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01030008303

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is in Mode 3
- Unit 4 is in mode 1 at 100% power
- 3A CCW pump is out of service and breaker is racked out.

Initiating Cue:

- You are to respond to plant conditions as the Unit #3 Reactor Operator.

Acknowledge to the examiner when you are ready to begin.

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

Facility:	Turkey Point	Task No:	14028009500
Task Title:	JPM: Locally Trip the Reactor and Main Turbine	JPM No:	14028009501
K/A Reference:	029 EA 1.1 RO 3.9 SRO 4.1		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance	X	Actual Performance	

Classroom _____ Simulator _____ Plant X

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS*, is in progress on UNIT 4.

Initiating Cues:

- You have been directed to proceed to the Unit 4B MCC room and take local actions to trip the Unit 4 Reactor per 4-EOP-FR-S.1, RNO Step 7.a.
- You are then directed to trip the Main Turbine locally per 4-EOP-FR-S.1, RNO Step 7.b.

Rec'd 10/5/11

Task Standard:

- Unit 4A and 4B Reactor Trip Breakers are open, Unit 4A and Unit 4B generator output breakers are open, and Unit 4A and Unit 4B motor input breakers are open.
- Main Turbine is tripped from the Front Standard.

Required Materials:

- 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS,* Step 7.

General References:

- 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS*

Time Critical Task: No

Validation Time: 10 minutes

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS*.	
CUE	Provide Applicant with a copy of 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS*, Step 7.	
COMMENT		

STEP 2 √	In 4B MCC room, locally trip reactor as follows: Open 4A and 4B Reactor Trip Breakers. (4-EOP-FR-S.1, RNO Step 7.a., Bullet 1)	SAT _____ UNSAT _____
STANDARD	Applicant proceeds to the Unit 4B MCC Room and locates the RTBs. Explains that the red CLOSED flag should be showing for the RTBs. Applicant opens the Unit 4A and 4B Reactor Trip Breakers by depressing the TRIP button on the front of the Unit 4A and 4B Reactor Trip Breakers. Explains that the green OPEN flag should be showing.	
CUE	When the Applicant explains expected conditions at the RTBs, inform the Applicant that the red CLOSED flag is showing for the Unit 4 A and 4B Reactor Trip Breakers. When the Applicant demonstrates opening each of the breakers by depressing the TRIP button on the front of the Unit 4A and 4B Reactor Trip Breakers, inform the Applicant that the green OPEN flag is indicated.	
COMMENT		
NOTE	**EVALUATOR NOTE:** The Unit 4A and 4B Reactor Trip Breakers may be opened in any order.	

STEP 3	Open 4A and 4B Reactor Trip Bypass Breakers. (4-EOP-FR-S.1, RNO Step 7.a., Bullet 2)	SAT _____ UNSAT _____
STANDARD	Applicant describes that the Unit 4A and 4B Reactor Trip Bypass Breakers should show a green OPEN flag; therefore, depressing the TRIP button on the front of the Unit 4A and 4B Reactor Trip Breakers is not required.	
CUE	When the Applicant describes that the Unit 4A and 4B Reactor Trip Bypass Breakers should show a green OPEN flag and should be withdrawn from the cubicle, inform the Applicant that the RTBP is withdrawn from the cubicle and that the green OPEN flag is indicated.	
COMMENT		
NOTE	**EVALUATOR NOTE:** The Unit 4 Reactor Trip Breakers are normally racked out **EVALUATOR NOTE:** This Step is NOT critical because the Initial Conditions indicate that the Reactor Trip Bypass Breakers are already open; therefore, would not require operator actions.	

STEP 4 √	Open A/B MG set generator output breakers. (4-EOP-FR-S.1, RNO Step 7.a., Bullet 3)	SAT _____ UNSAT _____
STANDARD	Applicant describes that the green light should be OFF and the red light should be ON initially. Applicant places the GENERATOR 4A control switch for the 4A MG set to the TRIP position. Explains that the green light should be ON and the red light should be OFF. Applicant places the GENERATOR 4B control switch for the 4A MG set to the TRIP position. Explains that the green light should be ON and the red light should be OFF.	
CUE	After Applicant explains the initial status of the generator output breaker, inform the Applicant that the green light is OFF and the red light is ON. When the Applicant explains expected conditions when the GENERATOR 4A/4B control switches are operated, inform the Applicant that the green lights are ON and the red lights are OFF.	
COMMENT		

STEP 5 √	Open A/B MG set motor input breakers. (4-EOP-FR-S.1, RNO Step 7.a., Bullet 4)	SAT _____ UNSAT _____
STANDARD	Applicant describes that the green light should be OFF and the red light should be ON initially. Applicant places the MOTOR 4A control switch for the 4A MG set to the TRIP position. Explains that the green light should be ON and the red light should be OFF. Applicant places the MOTOR 4B control switch for the 4A MG set to the TRIP position. Explains that the green light should be ON and the red light should be OFF.	
CUE	After Applicant explains the initial status of the motor input breaker, inform the Applicant that the green light is OFF and the red light is ON. When the Applicant explains expected conditions when the MOTOR 4A/4B control switches are operated, inform the Applicant that the green lights are ON and the red lights are OFF.	
COMMENT		

STEP 5 √	Locally trip turbine at turbine front standard. (4-EOP-FR-S.1, RNO Step 7.b)	SAT _____ UNSAT _____
STANDARD	Applicant describes that, to trip the Main turbine; the orange, RESET/TRIP lever is rotated clockwise to the TRIP position. Indications of a turbine trip include, but are not limited to: • Sound of turbine rolling down. • Indications of lowering shaft rpm. • Lowering bearing oil pressure. • Turbine stop and control valves going closed.	
CUE	**EVALUATOR CUE:** After Applicant explains the initial trip method and provides some indications of the trip occurring, inform Applicant that the Main Turbine is slowing down and bearing oil pressure is decreasing. **TERMINATING CUE:** **The task is complete when the Applicant returns the JPM Briefing Sheet to the examiner.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 14028009501

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- 4-EOP-FR-S.1, *Response to Nuclear Power Generation/ATWS*, is in progress on UNIT 4.

Initiating Cues:

- You have been directed to proceed to the Unit 4B MCC room and take local actions to trip the Unit 4 Reactor per 4-EOP-FR-S.1, RNO Step 7.a.

- You are then directed to trip the Main Turbine locally per 4-EOP-FR-S.1, RNO Step 7.b.

Acknowledge to the examiner when you are ready to begin.

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

CAUTION

If an SI signal exists or occurs and the reactor is subcritical, proper safeguards equipment alignment is required to be verified using Attachment 3 of 4-EOP-E-0, REACTOR TRIP OR SAFETY INJECTION, while continuing with this procedure.

7 Check If The Following Trips Have Occurred

a. Reactor trip	a. In 4B MCC room, locally trip reactor as follows: • Open 4A and 4B Reactor Trip Breakers. • Open 4A and 4B Reactor Trip Bypass Breakers. • Open A/B MG set generator output breakers. • Open A/B MG set motor input breakers.
b. Turbine trip	b. Locally trip turbine at turbine front standard.
c. Mid and East GCBs – OPEN (Normally 30 seconds delay)	c. Perform the following: 1) Manually open breakers. 2) **IF** breakers do **NOT** open **THEN** actuate Emergency Gen Bkr Trip Switch for the affected breaker(s). 3) **IF** breaker position indication is **NOT** available **AND** turbine speed is **NOT** decreasing, **THEN** direct Field Operator to perform the following: a) Obtain key 17 from the Shift Manager key locker. b) Locally trip Mid and East GCBs from the switchyard. • 8W88 • 8W65

Rec'd 10/5/11

Facility:	Turkey Point	Task No:	01053002100
Task Title:	JPM: Preparations for Initiating Containment Vent Alternate Air Pressurization	JPM No:	01053002101
K/A Reference:	103 A1.01 RO 3.7 SRO 4.1		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance	X	Actual Performance	
Classroom		Simulator	Plant X

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is at 100%.
- Containment Pressure is -1.5 psig and must be increased.
- The R-11, R-12 Backup Sampler is not installed.

Initiating Cue:

- The US has directed you to make preparations for initiating containment vent alternate air pressurization, per 3-NOP-094, *Containment Post Accident Monitoring System,* Section 5.3.

Rec'd 12/5/11

Task Standard:

- Containment Vent Alternate Air supply is aligned to pressurize containment.

Required Materials:

- 3-NOP-094, *Containment Post Accident Monitoring System.*

General References:

- None

Time Critical Task: No

Validation Time: 20 minutes

Denote critical steps with a check mark (√) **Start Time** _____

STEP 1	Obtain the required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 3-NOP-094, *Containment Post Accident Monitoring Systems*.	
CUE	Provide a copy of 3-NOP-094, *Containment Post Accident Monitoring Systems*. At a minimum, include the Cover Page, Precautions and Limitations, and Section 5.3.	
COMMENT		

STEP 2 √	**PERFORM** one of the following: Outside the Unit 3 BA Evap Room: **REMOVE** the floor cap for MPAS-001, WHT PUMP DISCHARGE TO RADWASTE BUILDING. (3-NOP-094, 5.3.1.A.(1)	SAT _____ UNSAT _____
STANDARD	Applicant locates the floor cap for MPAS-001 outside of the Unit 3A BA Evaporator Room. Rotates the cap counter-clockwise until it is off, and then sets it aside.	
CUE	Applicant describes obtaining the tools from the wall after unlocking them with the key, normally maintained by operators. Inform the Applicant that the cap rotates freely and eventually comes loose.	
COMMENT		

NOTE	**NOTE** Full travel for valve is provided in parentheses. Turning these valves beyond full travel may damage the reach rod assemblies.	
STEP 3 √	**CLOSE** MPAS-001, WHT PUMP DISCHARGE TO RADWASTE BUILDING (1/4 turn). (3-NOP-094, 5.3.1.A.(2)	SAT _____ UNSAT _____
STANDARD	Applicant rotates the reach-rod operator for MPAS-001 clockwise ¼ turn.	
CUE	Inform the Applicant that the valve operator rotates freely.	
COMMENT		
NOTE	**EVALUATOR NOTE:** Because MPAS-001 (this step) and valve 1731 (next step) are in series, there is no adverse effect if both are closed by the Applicant.	

STEP 4 √	At the Waste Evaporator Feed Pump Room in the Radwaste Bldg, **CLOSE** valve 1731, WHT TO RWB WHT ISOL. (3-NOP-094, 5.3.1.B.)	SAT _____ UNSAT _____
STANDARD	Applicant locates valve 1731 in the Waste Evaporator Feed Pump Room and rotates the valve clockwise until it will no longer rotate.	
CUE	Inform the Applicant that the valve operator rotates freely.	
COMMENT		
NOTE	**EVALUATOR NOTE:** Because MPAS-001 (previous step) and valve 1731 (this step) are in series, there is no adverse effect if both are closed by the Applicant.	

STEP 5 √	On the Auxiliary Building roof near the Unit 3 containment wall **PERFORM** the following: **UNLOCK** and **OPEN** MPAS-3-004, CONTAINMENT PURGE AIR RETURN ISOL VLV TO MPAS (3-NOP-094, 5.3.2 & 5.2.A.)	SAT _____ UNSAT _____
STANDARD	Applicant locates MPAS-3-004 on the AB roof near the Unit 3 containment wall, removes the locking device, and rotates the valve counter-clockwise until it will no longer rotate. Notes that the handwheel rises.	
CUE	Inform the Applicant that the valve operator rotates freely.	
COMMENT		

STEP 6 √	**CLOSE** MPAS-3-005, CNTMT INST AIR BLEED TO VENT DUCT. (3-NOP-094, 5.3.3.)	SAT _____ UNSAT _____
STANDARD	Applicant locates MPAS-3-005 and rotates the valve clockwise until it will no longer rotate. Observes the stem retract.	
CUE	Inform the Applicant that the valve operator rotates freely.	
COMMENT		

STEP 7 √	**ALIGN** Unit 3 Containment Vent Alternate Air Supply as follows: **OBTAIN** Containment Vent Alternate Air Supply Hose from the SNPO tool box located in Auxiliary Building Fan Room. (3-NOP-094, 5.3.3 & 5.3.A.)	SAT _____ UNSAT _____
STANDARD	Applicant locates the SNPO tool box located in Auxiliary Building Fan Room and removes the red hose with the tag labeled for UNIT 3 CONTAINMENT VENT ALTERNATE AIR SUPPLY HOSE.	
CUE	**EVALUATOR CUE:** Inform Applicant that the hose is in the tool box.	
COMMENT		

STEP 8	In the North/South hallway by the North end of the Waste Boron Control Panel, **ENSURE** 40-946, INST AIR TO N-S HALLWAY HOSE CONN ISOLATION, is CLOSED. (3-NOP-094, 5.3.B.)	SAT _____ UNSAT _____
STANDARD	Applicant locates 40-946 in the North/South hallway by the North end of the Waste Boron Control Panel and observes that the valve is closed by attempting to rotate the valve in the clockwise direction and noting that it will not rotate.	
CUE	**EVALUATOR CUE:** Inform Applicant that 40-946 will NOT rotate in the CW direction.	
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical because the valve is already closed. There would be NO impact on the task if the Applicant failed to check 40-946.	

STEP 9 √	**CONNECT** Containment Vent Alternate Air Supply Hose to valve 40-946, INST AIR TO N-S HALLWAY HOSE CONN ISOLATION. (3-NOP-094, 5.3.C.)	SAT _____ UNSAT _____
STANDARD	Applicant connects the hose to the hallway connection.	
CUE	Inform the Applicant that there are no problems with connecting the hose.	
COMMENT		

STEP 10	**ENSURE** R-11, R-12 BACKUP AIR SAMPLER is STOPPED. (3-NOP-094, 5.3.D.)	SAT _____ UNSAT _____
STANDARD	Applicant notes that the backup sampler is not installed.	
CUE	Inform Applicant that the backup sampler is not installed.	
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical because the backup sampler is normally STOPPED. There would be NO effect on this task if the Applicant failed to check the backup sampler.	

STEP 11	**ENSURE** 3-11-031, CONTAINMENT R-11/12 GRAB SAMPLE RETURN ISOL, is LOCKED CLOSED. (3-NOP-094, 5.3.E.)	
STANDARD	Applicant locates 3-11-031 and observes that the valve is LOCKED CLOSED by noting that the locking device is properly installed.	
CUE	**EVALUATOR CUE:** Inform the Applicant that the locking device is properly installed.	
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical because 3-11-031 is normally LOCKED CLOSED. There would be NO effect on this task if the Applicant failed to check the valve.	

STEP 12	**ENSURE** 3-11-030, CNMT RAD MON R-3-11 & 12 GRAB SAMPLE SPLY ISOL VLV, is LOCKED CLOSED. (3-NOP-094, 5.3.F.)	SAT _____ UNSAT _____
STANDARD	Applicant locates 3-11-030 and observes that the valve is LOCKED CLOSED by noting that the locking device is properly installed.	
CUE	**EVALUATOR CUE:** Inform the Applicant that the locking device is properly installed.	
COMMENT		
NOTE	**EVALUATOR NOTE:** This Step is NOT critical because 3-11-031 is normally LOCKED CLOSED. There would be NO effect on this task if the Applicant failed to check the valve.	

STEP 13 √	**CONNECT** remaining end of Containment Vent Alternate Air Supply Hose to 3-11-035, PACV ALTERNATE AIR PRESSURIZER valve. (3-NOP-094, 5.3.G.)	SAT _____ UNSAT _____
STANDARD	Applicant connects the hose to 3-11-035.	
CUE	**EVALUATOR CUE:** Inform the Applicant that there are no problems with connecting the hose.	
COMMENT		

STEP 14 √	**OPEN** 3-11-035, PACV ALTERNATE AIR PRESSURIZER valve. (3-NOP-094, 5.3.H.)	SAT _____ UNSAT _____
STANDARD	Applicant locates 3-11-035 and rotates the valve counter-clockwise until it will no longer rotate. Applicant calls the Control Room and informs them that local actions are complete for Section 5.3 of 3-NOP-094.	
CUE	**EVALUATOR CUE:** Inform the Applicant that the valve operator rotates freely. **TERMINATING CUE:** **Evaluator informs the Applicant that another operator will complete the task. The JPM is complete.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 01053002101

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Unit 3 is at 100%.
- Containment Pressure is -1.5 psig and must be increased.
- The R-11, R-12 Backup Sampler is not installed.

Initiating Cue:

- The US has directed you to make preparations for initiating containment vent alternate air pressurization, per 3-NOP-094, *Containment Post Accident Monitoring System,* Section 5.3.

Acknowledge to the examiner when you are ready to begin.

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

FPL

TURKEY POINT UNIT 3

NORMAL OPERATING PROCEDURE

SAFETY RELATED

CONTINUOUS USE

Procedure No.	Revision No.	Effective Date
3-NOP-094	**0**	**02/18/11**

Title:

CONTAINMENT POST ACCIDENT MONITORING SYSTEMS

Responsible Department: **OPERATIONS**

Special Considerations:

This is an Upgraded Procedure. Initial use should include increased awareness because of potential technical and/or sequential changes to the procedure. After initial use of this procedure, provide comments back to the Procedure Upgrade Project.

FOR INFORMATION ONLY
Before use, verify revision and change documentation (if applicable) with a controlled index or document.
DATE VERIFIED_____ INITIAL_____

Revision	Approved By	Approval Date
0	Brian Stamp	12/08/10

UNIT #	UNIT 3
DATE	
DOCT	PROCEDURE
DOCN	3-NOP-094
SYS	
STATUS	COMPLETED
REV	0
# OF PGS	

Rec'd 10/5/11

1.0 PURPOSE

1. This procedure provides instructions for operating:
   - Containment High Radiation Monitors
   - Containment Pressure Monitors
   - Containment Water Level Monitors
   - Post Accident Sample System Heat Tracing
   - Post Accident Hydrogen Monitors
2. This procedure provides instructions for alternate air pressurization of containment to support Severe Accident Management Guidance (SAMG).

2.0 PRECAUTIONS AND LIMITATIONS

2.1 Precautions

1. A Neutron Badge may be required by Radiation Protection when performing valve and system alignments in the PASS Sample Room.

2.2 Limitations

1. If the oxygen gas pressure to the Hydrogen Monitors decreases to less than 20 psi, then the monitors will be non-functional.

5.3 Preparations For Initiating Containment Vent Alternate Air Pressurization

1. **PERFORM** one of the following:

   A. Outside the Unit 3 BA Evap Room:

   (1) **REMOVE** the floor cap for MPAS-001, WHT PUMP DISCHARGE TO RADWASTE BUILDING.

> **NOTE**
>
> Full travel for valve is provided in parentheses. Turning these valves beyond full travel may damage the reach rod assemblies.

   (2) **CLOSE** MPAS-001, WHT PUMP DISCHARGE TO RADWASTE BUILDING (1/4 turn).

   B. At the Waste Evaporator Feed Pump Room in the Radwaste Bldg, **CLOSE** valve 1731, WHT TO RWB WHT ISOL.

2. On the Auxiliary Building roof near the Unit 3 containment wall **PERFORM** the following:

   A. **UNLOCK** and **OPEN** MPAS-3-004, CONTAINMENT PURGE AIR RETURN ISOL VLV TO MPAS

   B. **CLOSE** MPAS-3-005, CNTMT INST AIR BLEED TO VENT DUCT.

3. **ALIGN** Unit 3 Containment Vent Alternate Air Supply as follows:

   A. **OBTAIN** Containment Vent Alternate Air Supply Hose from the SNPO tool box located in Auxiliary Building Fan Room.

   B. In the North/South hallway by the North end of the Waste Boron Control Panel, **ENSURE** 40-946, INST AIR TO N-S HALLWAY HOSE CONN ISOLATION, is CLOSED.

   C. **CONNECT** Containment Vent Alternate Air Supply Hose to valve 40-946, INST AIR TO N-S HALLWAY HOSE CONN ISOLATION.

   D. **ENSURE** R-11, R-12 BACKUP AIR SAMPLER is STOPPED.

   E. **ENSURE** 3-11-031, CONTAINMENT R-11/12 GRAB SAMPLE RETURN ISOL, is LOCKED CLOSED.

5.3 Preparations For Initiating Containment Vent Alternate Air Pressurization (continued)

3. (continued)

F. **ENSURE** 3-11-030, CNMT RAD MON R-3-11 & 12 GRAB SAMPLE SPLY ISOL VLV, is LOCKED CLOSED.

G. **CONNECT** remaining end of Containment Vent Alternate Air Supply Hose to 3-11-035, PACV ALTERNATE AIR PRESSURIZER valve.

H. **OPEN** 3-11-035, PACV ALTERNATE AIR PRESSURIZER valve.

4. **ENSURE** CONTAINMENT ISOLATION PHASE A is RESET.

5. At R-11 and R-12 drawer, **PRESS** PUMP ON/OFF button to turn off the Sample Pump. (light out)

6. **ENSURE** SV-3-2913, SOL VLV FOR CNTMT AIR MONIT INLET ISOL, is CLOSED.

7. **PLACE** SV-3-2911, SOL VLV FOR CNTMT AIR MONIT INLET, hand switch to OPEN.

8. **CHECK** SV-3-2912, SOL VLV FOR CNTMT AIR MONIT SAMPLE RETURN, OPEN.

Facility:	Turkey Point	Task No:	14013005300
Task Title:	JPM: I.A. Dryer Operations During Loss of I.A.	JPM No:	14013005301
K/A Reference:	078 A3.01 RO 3.1 SRO 3.2		
Examinee:		NRC Examiner:	
Facility Evaluator:		Date:	
Method of Testing:			
Simulated Performance	X	Actual Performance	

Classroom _____ Simulator _____ Plant X

HAND JPM BRIEFING SHEET TO EXAMINEE AT THIS TIME!

Read to the examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Reactor Power is 100%
- A loss of Instrument Air is in progress.
- The Unit 3 IA Dryer is in service and is purging excessively.
- The Unit 4 IA Dryer is NOT available.
- The Instrument Air System is in a normal alignment.

Initiating Cue:

- The US has directed you to check the operation of the Instrument Air Dryers per 0-ONOP-013, Loss of Instrument Air, Steps 8 and 9.

Rec'd 10/5/11

Task Standard:

- The Instrument Air Dryers have been aligned per 0-ONOP-013, Loss of Instrument Air, Steps 8 and 9.

Required Materials:

- 0-ONOP-013, Loss of Instrument Air

General References:

Time Critical Task: No

Validation Time: 7 minutes

Denote critical steps with an check mark (√)

Start Time _____

STEP 1	Obtain the required reference materials.	SAT _____ UNSAT _____
STANDARD	Applicant obtains a copy of 0-ONOP-013, Loss of Instrument Air.	
CUE	Provide Applicant with a copy of 0-ONOP-013, Loss of Instrument Air.	
COMMENT		

STEP 2	Check Locally That The Instrument Air Dryers Properly Aligned And NOT Purging Excessively.	SAT _____ UNSAT _____
STANDARD	Applicant determines from the Initial Conditions that the Unit 3 Instrument Air Dryer is purging excessively.	
CUE	Inform Applicant that the dryer is purging excessively.	
COMMENT		

STEP 3	Align the Instrument Air Dryers In accordance with 3/4-OP-013. (0-ONOP-013, RNO Step 8)	SAT _____ UNSAT _____
STANDARD	Applicant notes from the Initial Conditions that the IA System is in a normal alignment.	
CUE	Inform Applicant that the I.A. Dryers are in a normal alignment per 3/4-OP-013.	
COMMENT		

STEP 4 √	**IF** air dryer is excessively purging, **THEN** CLOSE the associated purge exhaust block valve: U-3 (3T9): 3-40-380 U-4 (4T9): 4-40-380 (0-ONOP-013, RNO Step 8)	SAT _____ UNSAT _____
STANDARD	Applicant closes 3-40-380 by rotating the valve handle approximately 90° in the clockwise direction until it no longer rotates.	
CUE	Inform Applicant that 3-40-380 rotates freely in the clockwise direction until it no longer rotates.	
COMMENT		
NOTE	**EVALUATOR NOTE:** 3-40-380 and 4-40-380 are labeled "IA DRYER PURGE EXH BLK VLV."	

NOTE	NOTE • *IAS-3-012 and IAS-4-012 shall be opened AFTER the SM has ensured that System Operations has enabled the NERC load shedding contingency software.*	
STEP 5 √	**Check Locally The Pressure Drop Across The Inservice Instrument Air Dryer To Be Less Than 10 PSID** PI-*-6280 (2 ft off ground back of Instrument Air Dryer) minus PI-*-3423 **OR** PI-*-6280 minus PI-*-3424 (0-ONOP-013, Step 9)	SAT _____ UNSAT _____
STANDARD	Applicant locates PI-3-6280, PI-3-3423, and PI-3-3424 and notes pressure readings. Transitions to the RNO column. This is an Alternate Path aspect of this JPM.	
CUE	Inform Applicant that PI-3-6280 reads 108 psig by pointing to that value on the gauge. Inform Applicant that PI-3-3423 reads 85 psig by pointing to that value on the gauge.	
COMMENT		
NOTE	**EVALUATOR NOTE:** 3-3424 is RIGHT CHAMBER PRESS 3-3423 is LEFT CHAMBER PRESS	

STEP 6	Contact System Operations, ensure NERC load shedding contingency software has been enabled. (0-ONOP-013, RNO Step 9.a)	SAT _____ UNSAT _____
STANDARD	Applicant notes that Systems Operations does NOT need to be contacted since the Unit 4 Air Dryer is out of service.	
CUE	If Applicant attempts to inform System Operations, inform applicant that Systems Operations will be notified by the SM.	
COMMENT		

STEP 7 √	**IF** the air dryer is available on the opposite unit, **THEN** cross-tie the Instrument Air Systems by opening the Instrument Air Cross-tie Valves: IAS-3-012 **AND** IAS-4-012 (0-ONOP-013, RNO Step 9.b)	
STANDARD	Applicant notes from the Initial Conditions that the Unit 4 Air Dryer is NOT available. Goes to next step.	
CUE	**EVALUATOR CUE:** Inform Applicant that the Unit 4 Air Dryer is NOT available due to the temporary IA modification. There is a "CAUTION" tag on IAS-4-012.	
COMMENT		

STEP 8 √	**IF** the Air Dryer on the opposite unit is **NOT** available, **THEN** open the Instrument Air Dryer Bypass Valve to supply air to the affected unit(s). IAS-3-016 **OR** IAS-4-030 (0-ONOP-013, RNO Step 9.c)	
STANDARD	Applicant locates IAS-3-016 and rotates the valve handle approximately 90° in the counterclockwise direction until it stops rotating.	
CUE	**EVALUATOR CUE:** Inform Applicant that IAS-3-016 rotates freely in the counterclockwise direction until it stops rotating. **TERMINATING CUE:** **JPM is terminated when the Applicant returns the JPM Briefing Sheet to the Evaluator.**	
COMMENT		

Stop Time _____

Verification of Completion:

Job Performance Measure No. 14013005301

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question Documentation:

Question:

_____

_____

_____

_____

_____

Response:

_____

_____

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's signature and date: _____ _____

JPM BRIEFING SHEET

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

- Reactor Power is 100%
- A loss of Instrument Air is in progress.
- The Unit 3 IA Dryer is in service and is purging excessively.
- The Unit 4 IA Dryer is NOT available.
- The Instrument Air System is in a normal alignment.

Initiating Cue:

- The US has directed you to check the operation of the Instrument Air Dryers per 0-ONOP-013, Loss of Instrument Air, Steps 8 and 9.

Acknowledge to the examiner when you are ready to begin.

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

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
6	**WHEN It Is Desired To Return An Isolated Instrument Air Compressor To Service, THEN Perform The Following** * For 3CM, OPEN IAC 3CM Discharge Isol Vlv IAS-3-058 * For 3CD, OPEN IAC 3CD Discharge Isol Vlv IAS-3-059 * For 4CM, OPEN IAC 4CM Discharge Isol Vlv IAS-4-058 * For 4CD, OPEN IAC 4CD Discharge Isol Vlv IAS-4-059 IF EC 246991, Unit 4 Instrument Air System Upgrade, is in progress, THEN: * For TC_1 (Unit 3 temporary instrument air compressor)) OPEN IAS-3-037 Supply Line Drain Valve * For TC_2 (Unit 4 temporary instrument air compressor) OPEN VC_2, TC_2 Compressor Discharge Isolation Valve * For TC_3 (Unit 4 temporary instrument air compressor) OPEN VC_3, TC_3 Compressor Discharge Isolation Valve * For TC_4 (Unit 4 temporary instrument air compressor) OPEN VC_4, TC_4 Compressor Discharge Isolation Valve	
7	**Go to Step 11**	
8	**Check Locally That The Instrument Air Dryers Properly Aligned And NOT Purging Excessively**	Align the Instrument Air Dryers In accordance with 0-NOP-013. * IF air dryer is excessively purging, THEN CLOSE the associated purge exhaust block valve: U-3 (3T9): 3-40-380 U-4 (4T9): 4-40-380

Rec'd 10/5/11

STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED

NOTE

- *IAS-3-012 and IAS-4-012 shall be opened **AFTER** the SM has ensured that System Operations has enabled the NERC load shedding contingency software.*

9 **Check Locally The Pressure Drop Across The Inservice Instrument Air Dryer To Be Less Than 10 PSID**

* PI-*-6280 (2 ft off ground back of Instrument Air Dryer) minus PI-*-3423

OR

* PI-*-6280 minus PI-*-3424

Perform the following:

a. Contact System Operations, ensure NERC load shedding contingency software has been enabled.

b. **IF** the air dryer is available on the opposite unit, **THEN** cross-tie the Instrument Air Systems by opening the Instrument Air Cross-tie Valves:

- IAS-3-012

AND

- IAS-4-012

c. **IF** the Air Dryer on the opposite unit is **NOT** available, **THEN** open the Instrument Air Dryer Bypass Valve to supply air to the affected unit(s).

* IAS-3-016

OR

* IAS-4-030

d. Notify the System Engineer to investigate cause of the high DP **AND** to coordinate immediate repairs as required.

e. Refer to 0-ONOP-013.1, INSTRUMENT AIR DRYER MALFUNCTION, for additional local actions while continuing with this procedure.

f. **WHEN** IAS-3-012 or IAS-4-012 have been closed, notify System Operations that the NERC load shedding contingency software can be disabled.