

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: a- **ALTERNATE PATH**

TASK NUMBER: U-068-NO-04

TASK TITLE: Recirc Pump Shutdown Plant NOT in MODE 1

K/A NUMBER: 202001 A4.02 K/A RATING: RO 3.5 SRO 3.4

TASK STANDARD: Shutdown Reactor Recirc Pump B and when opening discharge valve to maintain the idle loop temperature the idle pump will rotate requiring the discharge valve to be closed.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-OI-68

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are a Unit Operator. 2B Recirc Pump needs to be shutdown for a minor repair. It is NOT desired to fully isolate Recirc Pump 2B.

**INITIATING CUES:** The US directs you to shutdown 2B Recirc Pump in accordance with 2-OI-68. Precautions and Limitations have been reviewed.

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

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**INITIAL CONDITIONS:** You are a Unit Operator. 2B Recirc Pump needs to be shutdown for a minor repair. It is NOT desired to fully isolate Recirc Pump 2B.

**INITIATING CUES:** The US directs you to shutdown 2B Recirc Pump in accordance with 2-OI-68. Precautions and Limitations have been reviewed.

START TIME \_\_\_\_\_

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Performance Step 1:\*Critical ☒ Not Critical**7.1 Recirc Pump Shutdown (Plant NOT in Mode 1)****CAUTIONS**

- 1) Recirc System operation is restricted by criteria in Unit 2 Power to Flow Map (ICS or Station Reactor Engineering, 0-TI-248) and Illustration 1.
- 2) The Recirc System should be operated such that recirc loops with forced flow have balanced jet pump flows to reduce hydraulic forces and vibration stresses on jet pumps and retainers.

**NOTES**

- 1) Section 7.2 provides instructions for stopping a recirc pump during power operation.
- 2) All operations are performed from Panel 2-9-4 unless noted otherwise.
- 3) One pump may be removed from service to conserve power, minimize heat input into the Reactor, for maintenance or for testing.
- 4) The Unit Supervisor may authorize the removal of one recirc pump from service while cooling down.
- 5) When depressing the switches which control the Recirc Drives, these switches must be firmly depressed to ensure all the contacts are made-up.

[1] **REVIEW** Section 3.0, Precautions and Limitations.[2] **VERIFY** in service recirc pump(s) are operating at 345 RPM to 480 RPM pump speed.Standard:

\*Using Section 7.1 of 2-OI-68 is the critical portion of this step.

Step 1 is given in initial conditions and step 2 the 2A pump is operating at 480 RPM

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_



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Performance Step 2:Critical ☐ Not Critical ☒

- [3] **MAINTAIN** at least one recirc pump operating at minimum speed (approximately 345 RPM to 480 RPM) until the shutdown cooling system is flushed and ready for operation or until the Reactor is at the desired shutdown condition.

Standard:

2A RR Pump will remain in operation

SAT\_\_\_ UNSAT\_\_\_ N/A \_\_\_ COMMENTS:\_\_\_\_\_

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Performance Step 3:Critical ☒ Not Critical**CAUTION**

To prevent damage to the recirc pump seals, do not isolate a recirc pump (Suction and Discharge valves CLOSED) with the CRD seal supply isolation valve open. Ensure applicable single loop requirements are satisfied if only one recirc pump is in service.

- [5] **IF** desired to shut down Recirc Drive 2B, **THEN** (Otherwise N/A):

[5.1] **FIRMLY DEPRESS** RECIRC DRIVE 2B SHUTDOWN, 2-HS-96-20.

Standard:

Operator depresses 2-HS-96-20 to shutdown RR Pump 2B

SAT\_\_\_ UNSAT\_\_\_ N/A \_\_\_ COMMENTS:\_\_\_\_\_

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Performance Step 4:Critical\_ Not Critical X

[5.2] **IF** drive speed is greater than 345 rpm, **THEN VERIFY** lowering drive speed to 345 rpm.

[5.3] **CHECK** DRIVE RUNNING, 2-IL-96-40, is extinguished and drive shuts down.

Standard:

Operator verifies lowering drive speed and 2-IL-96-40 extinguished

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:Critical X Not Critical**CAUTION**

The closure circuit for RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-HS-68-3A(79A) is a seal-in and is **NOT** to be held in the CLOSE position unless specifically directed. If the handswitch is held to the close position ( $\approx 2.5$  seconds) after the valve has reached its full close valve position this will allow the reclosure circuit to engage. This reclosure causes the motor to re-engage at a rapid rate ( $\approx 10$  times a second), which can cause the motor to heat and also to exceed the recommended valve seat loading.

[6] **WHEN** RECIRC LOOP A(B) DIFF PRESS LOW 2-PDA-68-65(82) "ALARMS"  
**THEN CLOSE**, RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-HS-68-3A(79A).

Standard:

Operator closes RR Pump 2B Discharge Valve 2-HS-68-79A after DP Low Alarm is received. If the operator holds the handswitch in the close position for greater than 3 seconds after the valve indicates full closed (Red light off and green light on) this would constitute a failure due to the caution above.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**CUE: IF Asked:** State that LCO 3.4.1 requirements have been implemented.

**CUE: It is desired to maintain temperature in the idle loop**

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Performance Step 6:

Critical ☒ Not Critical

[7] **IF** desired to throttle open Recirc Pump 2A(2B) discharge valve to maintain temperature in the idle loop, **THEN** (Otherwise N/A):

[7.1] **VERIFY** the recirc pump discharge valve has been closed for at least five minutes.

[7.2] **OPEN** as necessary, RECIRC PUMP 2A(2B) DISCHARGE VALVE, 2-HS-68-3A(79A), to maintain Recirc Loop temperature.

Standard:

Operator waits five minutes prior to opening RR Pump 2B discharge valve

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

**CUE: TIME COMPRESSION, Five minutes has elapsed**

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 Driver when RR Pump B discharge valve has been almost fully opened insert batch file nrcjpma.bat

**Alternate Path starts here based on a failure of the Kingsbury Thrust Bearing to seat after 5 minutes**

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Performance Step 7: Critical ☒ Not Critical

[8] IF Reactor Pressure is between 250 and 400 psig with Recirc Pump discharge valve open on the idle recirc loop, **THEN**

**MONITOR** the idle RECIRC PUMP speed to identify if reverse rotation is occurring.

Standard:

Operator determines discharge pressure is in this band and reverse rotation is occurring

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

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Performance Step 8: Critical ☒ Not Critical

[9] IF an idle Recirc Pump is rotating, **THEN**

**CLOSE** the idle RECIRC PUMP's discharge valve **AND NOTIFY** the Unit Supervisor, **INITIATE** a PER.

Standard:

Operator closes RR Pump 2B Discharge Valve when they observe rotation on 2B RR Pump. If the operator holds the handswitch in the close position for greater than 3 seconds after the valve indicates full closed (Red light off and green light on) this would constitute a failure due to the caution above.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE:** Another operator will initiate the SR.  
 It is desired to maintain temperature in the idle Recirc Loop

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Performance Step 9:Critical X Not Critical

[10] **IF** desired to throttle open Recirc Pump 2B discharge valve to maintain temperature in the idle loop, **THEN**

**OPEN RECIRC PUMP 2B DISCHARGE VALVE 2-HS-68-79A**, as necessary to maintain Recirc Loop temperature.

Standard:

Operator throttles open RR Pump 2B Discharge Valve

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

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Performance Step 10:Critical\_\_ Not Critical X

[12] **IF** fully isolating the Recirc Pump 2B is desired, **THEN**

(Otherwise N/A):

Standard:

Step is NA, Idle loop temperature is to be maintained

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

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END OF TASK

**STOP TIME** \_\_\_\_

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: a- **ALTERNATE PATH**

TASK NUMBER: U-068-NO-04

TASK TITLE: Recirc Pump Shutdown Plant NOT in MODE 1

K/A NUMBER: 202001 A4.02 K/A RATING: RO 3.5 SRO 3.4

TASK STANDARD: Shutdown Reactor Recirc Pump B and when opening discharge valve to maintain the idle loop temperature the idle pump will rotate requiring the discharge valve to be closed.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-OI-68

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
5/22/13

**INITIAL CONDITIONS:** You are a Unit Operator. 3B Recirc Pump needs to be shutdown for a minor repair. It is NOT desired to fully isolate Recirc Pump 3B.

**INITIATING CUES:** The US directs you to shutdown 3B Recirc Pump in accordance with 3-OI-68. Precautions and Limitations have been reviewed.

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit Operator. 3B Recirc Pump needs to be shutdown for a minor repair. It is NOT desired to isolate Recirc Pump 3B.

**INITIATING CUES:** The US directs you to shutdown 3B Recirc Pump in accordance with 3-OI-68. Precautions and Limitations have been reviewed.



START TIME \_\_\_\_\_

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Performance Step 1:\*Critical ☒ Not Critical**7.1 Recirc Pump Shutdown (Plant NOT in Mode 1)****CAUTIONS**

- 1) Recirc System operation is restricted by criteria in Unit 3 Power to Flow Map (ICS or Station Reactor Engineering, 0-TI-248) and Illustration 1.
- 2) The Recirc System should be operated such that recirc loops with forced flow have balanced jet pump flows to reduce hydraulic forces and vibration stresses on jet pumps and retainers.

**NOTES**

- 1) Section 7.2 provides instructions for stopping a recirc pump during power operation.
- 2) All operations are performed from Panel 3-9-4 unless noted otherwise.
- 3) One pump may be removed from service to conserve power, minimize heat input into the Reactor, for maintenance or for testing.
- 4) The Unit Supervisor may authorize the removal of one recirc pump from service while cooling down.
- 5) When depressing the switches which control the Recirc Drives, these switches must be firmly depressed to ensure all the contacts are made-up.

[1] **REVIEW** Section 3.0, Precautions and Limitations.[2] **VERIFY** in service recirc pump(s) are operating at 345 RPM to 480 RPM pump speed.Standard:

\*Using Section 7.1 of 3-OI-68 is the critical portion of this step.

Step 1 is given in initial conditions and step 2 the 3A pump is operating at 480 RPM

SAT\_\_\_ UNSAT\_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 2:Critical ☐ Not Critical ☒

- [3] **MAINTAIN** at least one recirc pump operating at minimum speed (approximately 345 RPM to 480 RPM) until the shutdown cooling system is flushed and ready for operation or until the Reactor is at the desired shutdown condition.

Standard:

3A RR Pump will remain in operation

SAT\_\_\_ UNSAT\_\_\_ N/A \_\_\_ COMMENTS:\_\_\_\_\_

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Performance Step 3:Critical ☒ Not Critical**CAUTION**

To prevent damage to the recirc pump seals, do not isolate a recirc pump (Suction and Discharge valves CLOSED) with the CRD seal supply isolation valve open. Ensure applicable single loop requirements are satisfied if only one recirc pump is in service.

- [5] To shutdown Recirc Drive 3B:  
**PERFORM** the following: (Otherwise N/A)

[5.1] **DEPRESS RECIRC PUMP 3B SHUTDOWN**, 3-HS-96-20.

Standard:

Operator depresses 3-HS-96-20 to shutdown RR Pump 3B

SAT\_\_\_ UNSAT\_\_\_ N/A \_\_\_ COMMENTS:\_\_\_\_\_

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Performance Step 4:Critical\_\_ Not Critical X

[5.2] IF drive speed is greater than 345 rpm, THEN VERIFY lowering drive speed to 345 rpm.

[5.3] CHECK DRIVE RUNNING, 3-IL-96-40, is extinguished and drive shuts down.

Standard:

Operator verifies lowering drive speed and 3-IL-96-40 extinguished

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 5:Critical X Not Critical**CAUTION**

The closure circuit for RECIRC PUMP 3A(3B) DISCHARGE VALVE, 3-HS-68-3A(79A) is a seal-in and is **NOT** to be held in the CLOSE position unless specifically directed. If the handswitch is held to the close position (approx. 2.5 seconds) after the valve has reached its full close valve position this will allow the reclosure circuit to engage. This reclosure causes the motor to re-engage at a rapid rate ( $\approx 10$  times a second), which can cause the motor to heat and also to exceed the recommended valve seat loading.

[6] **WHEN** RECIRC LOOP A(B) DIFF PRESS LOW 3-PDA-68-65(82) "ALARMS"  
**THEN CLOSE**, RECIRC PUMP 3A(3B) DISCHARGE VALVE, 3-HS-68-3A(79A).

Standard:

Operator closes RR Pump 3B Discharge Valve 3-HS-68-79A after DP Low Alarm is received. If the operator holds the handswitch in the close position for greater than 3 seconds after the valve indicates full closed (Red light off and green light on) this would constitute a failure due to the caution above.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE: IF Asked:** State that LCO 3.4.1 requirements have been implemented.

**CUE: It is desired to maintain temperature in the idle loop**

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Performance Step 6:

Critical ☒ Not Critical

[7] **IF** desired to throttle open Recirc Pump 3A(3B) discharge valve to maintain temperature in the idle loop, **THEN:**

After the Recirc Pump discharge valve has been closed for at least five minutes, **OPEN** as necessary, RECIRC PUMP 3A(3B) DISCHARGE VALVE, 3-HS-68-3A(79A), to maintain Recirc Loop temperature. (Otherwise N/A)

Standard:

Operator waits five minutes prior to opening RR Pump 3B discharge valve

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE: TIME COMPRESSION, Five minutes has elapsed**

\*\*\*\*\*  
 Driver when RR Pump B discharge valve has been almost fully opened insert batch file nrcjpma.bat

**Alternate Path starts here based on a failure of the Kingsbury Thrust Bearing to seat after 5 minutes**

\*\*\*\*\*  
Performance Step 7: Critical X Not Critical

[8] IF Reactor Pressure is between 250 and 400 psig with Recirc Pump discharge valve open on the idle recirc loop, **THEN**

**MONITOR** the idle RECIRC PUMP speed to identify if reverse rotation is occurring.

Standard:

Operator determines discharge pressure is in this band and reverse rotation is occurring

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

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Performance Step 8: Critical X Not Critical

[9] IF an idle Recirc Pump is rotating, **THEN**

**CLOSE** RECIRC PUMP 3B DISCHARGE VALVE, 3-HS-68-79A and initiate a SR.

Standard:

Operator closes RR Pump 3B Discharge Valve when they observe rotation on 3B RR Pump. If the operator holds the handswitch in the close position for greater than 3 seconds after the valve indicates full closed (Red light off and green light on) this would constitute a failure due to the caution above.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** Another operator will initiate the SR.  
 It is desired to maintain temperature in the idle Recirc Loop

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Performance Step 9:Critical X Not Critical

[10] **IF** desired to throttle open Recirc Pump 3B discharge valve to maintain temperature in the idle loop, **THEN**

**OPEN RECIRC PUMP 3B DISCHARGE VALVE 3-HS-68-79A**, as necessary to maintain Recirc Loop temperature.

Standard:

Operator throttles open RR Pump 3B Discharge Valve

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

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Performance Step 10:Critical\_\_ Not Critical X

[12] **IF** isolating Recirc Pump 3B:

**PERFORM** the following: (Otherwise N/A)

Standard:

Step is NA, Idle loop temperature is to be maintained

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

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END OF TASK

**STOP TIME** \_\_\_\_

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: b

TASK NUMBER: U-000-EM-44

TASK TITLE: 2-EOI Appendix-7K Alternate RPV Injection System – Fire Systems

K/A NUMBER: 295031 EA1.08 K/A RATING: RO 3.8 SRO 3.9

TASK STANDARD: Injects with Fire System in accordance with 2-EOI Appendix-7K

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-7K

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
5/22/13

### **INITIAL CONDITIONS:**

You are a Unit Operator. Due to an unisolable leak and equipment failures the Unit Supervisor is operating in 2-C-1 Alternate Level Control.

- Reactor Level and Pressure have lowered to their current value.
- Fire Pumps A, B, C and Diesel Fire Pump are operating
- 0-FCV-25-32 and 70, RSW Storage Tank Isolation Valves are closed.
- 1-FCV-23-57, Standby Coolant Valve from RHRSW is open.
- Breaker for 2-FCV-74-100 has been closed.

### **INITIATING CUE:**

The Unit Supervisor directs you to Align and Inject with the Fire System through BOTH RHR Loops in accordance with 2-EOI Appendix-7K, ALTERNATE RPV INJECTION SYSTEM LINEUP FIRE SYSTEM.



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

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### **INITIAL CONDITIONS:**

You are a Unit Operator. Due to an unisolable leak and equipment failures the Unit Supervisor is operating in 2-C-1 Alternate Level Control.

- Reactor Level and Pressure have lowered to their current value.
- Fire Pumps A, B, C and Diesel Fire Pump are operating
- 0-FCV-25-32 and 70, RSW Storage Tank Isolation Valves are closed.
- 1-FCV-23-57, Standby Coolant Valve from RHRSW is open.
- Breaker for 2-FCV-74-100 has been closed.

### **INITIATING CUE:**

The Unit Supervisor directs you to Align and Inject with the Fire System through BOTH RHR Loops in accordance with 2-EOI Appendix-7K, ALTERNATE RPV INJECTION SYSTEM LINEUP FIRE SYSTEM.

START TIME \_\_\_\_\_

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Performance Step 1:Critical Not Critical X

NOTE: With AC power NOT available, valve manipulations are manual and performed locally.

1. IF ALL AC Power is NOT available, THEN **REFER TO** Attachment 1 and **DISPATCH** personnel to manually operate the listed valves while performing the following steps.

Standard:

Step is NA, AC power is available

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 2:Critical Not Critical X

2. **NOTIFY** Unit 1 Operator to perform the following:
  - a. **VERIFY** at least one electric or the diesel driven fire pump running (Unit 1, Panel 9-20).
  - b. IF The diesel fire pump is running, THEN **DISPATCH** personnel to diesel fire pump as soon as possible to check proper operation.
  - c. **VERIFY CLOSED** the following valves (Unit 1, Panel 9-20):
    - 0-FCV-25-32, RSW STRG TNK ISOLATION VALVE
    - 0-FCV-25-70, RSW STRG TNK ISOLATION VALVE
  - d. **OPEN** 1-FCV-23-57, STANDBY COOLANT VALVE FROM RHRSW (Unit 1, Panel 9-3).
  - e. **DISPATCH** Unit 1 personnel to **CLOSE** 2-BKR-074-0100, RHR SYS I U-1 DISCH XTIE, (480V RMOV Board 1B Compartment 19A.)

Standard:

Given in Initial Conditions that these steps are complete

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 3:Critical Not Critical X

3. **VERIFY** RHR pumps 2A and 2C shut down (Unit 2, Panel 9-3).

Standard:

Verifies RHR Pumps 2A and 2C are secured

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 4:Critical X Not Critical

4. **OPEN** 2-FCV-74-100, RHR SYS I U-1 DISCH XTIE, (Unit 2, Panel 9-3).

Standard:

OPENS 2-FCV-74-100 with 2-HS-74-100A

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 5:Critical Not Critical X

5. **VERIFY CLOSED** 2-FCV-23-52, RHR HX 2D RHRSW OUTLET VLV (Unit 2, Panel 9-3).

Standard:

Verifies closed 2-FCV-23-52

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 6:\*Critical X Not Critical6. **VERIFY OPEN** the following valves (Unit 2, Panel 9-3):

- 2-FCV-74-52, RHR SYS I LPCI OUTBD INJECT VALVE
- \*2-FCV-74-53, RHR SYS I LPCI INBD INJECT VALVE.

Standard:

Verifies Open 2-FCV-74-52 and \*OPENS 2-FCV-74-53.

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

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Performance Step 7:Critical\_\_ Not Critical X7. IF Additional injection flow is required, THEN **INJECT** using RHR System II as follows:

- a. **VERIFY** RHR pumps 2B and 2D shut down (Unit 2, Panel 9-3).

Standard:

Verifies RHR Pumps 2B and 2D are secured

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

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Performance Step 8:Critical ☒ Not Critical

- b. **OPEN** 2-FCV-23-57, STANDBY COOLANT VLV FROM RHRSW,  
(Unit 2, Panel 9-3).

Standard:

Opens 2-FCV-23-57 with 2-HS-23-57A

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 9:Critical ☒ Not Critical

- c. **DISPATCH** personnel to **CLOSE** 480V ACB to 2-FCV-74-101, RHR SYS II  
U-3 DISCH XTIE (480V RMOV Board 3B Compartment 19E).

Standard:

Dispatches personnel to CLOSE the breaker for 2-FCV-74-101

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

CUE: Inform operator 2-BKR-074-0101 is closed  
Driver: Delete override for 3-FCV-74-101 valve or change to NORM

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Performance Step 10:Critical ☒ Not Critical

- d. **OPEN** 2-FCV-74-101, RHR SYS II U-3 DISCH XTIE (Unit 2, Panel 9-3).

Standard:

OPENS 2-FCV-74-101 with 2-HS-74-101A

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

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Performance Step 11:Critical Not Critical X

5. **VERIFY CLOSED** 2-FCV-23-46, RHR HX 2B RHRSW OUTLET VLV (Unit 2, Panel 9-3).

Standard:

Verifies closed 2-FCV-23-46

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

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Performance Step 12:\*Critical X Not Critical

6. **VERIFY OPEN** the following valves (Unit 2, Panel 9-3):

- \*2-FCV-74-67, RHR SYS I LPCI INBD INJECT VALVE
- 2-FCV-74-66, RHR SYS I LPCI OUTBD INJECT VALVE.

Standard:

\*OPENS 2-FCV-74-67 and verifies open 2-FCV-74-66.

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

END OF TASK

STOP TIME \_\_\_\_

JPM c

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: c

TASK NUMBER: U-000-EM-58

TASK TITLE: 2-EOI Appendix-11F Alternate RPV Pressure Control Systems RFPT On Minimum Flow

K/A NUMBER: 295007 AA2.01 K/A RATING: RO 4.1 SRO 4.1

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

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-11F

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
5/22/11

**INITIAL CONDITIONS:** You are an Operator. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-11. Reactor water level control is in automatic on RFPT 2C.

**INITIATING CUE:** The Unit Supervisor directs you to place 2A and 2B RFPT in alternate pressure control, as directed by 2-EOI Appendix-11F, and lower Reactor Pressure to 600 psig.



\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are an Operator. The Unit 2 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-11. Reactor water level control is in automatic on RFPT 2C.

**INITIATING CUE:** The Unit Supervisor directs you to place 2A and 2B RFPT in alternate pressure control, as directed by 2-EOI Appendix-11F, and lower Reactor Pressure to 600 psig.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:Critical \_ Not Critical X

1. IF BOTH of the following exist:

Emergency RPV Depressurization is required,

**AND**Group 1 Isolation Signal exists, THEN **EXIT** this procedure and **ENTER** EOI Appendix 11H.Standard:

Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve.

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 2:Critical \_ Not Critical X2. **VERIFY** MSIVs open.Standard:

Verifies MSIVs OPEN

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical\_\_ Not Critical X

3. **VERIFY** Hotwell Pressure at or below -7 in. Hg.

Standard:

Verifies Hotwell Pressure at or below -7 in. Hg

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical\_\_ Not Critical X

4. **PLACE** RFPTs in service as follows:

a. **VERIFY** the following:

- 1) At least one condensate pump running.
- 2) At least one condensate booster pump running.
- 3) Condensate System aligned to supply suction to RFPs.

Standard:

Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs.

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical\_\_ Not Critical X

b. **VERIFY** Main Oil Pump running for EACH RFPT to be started.

Standard:

Verifies main oil pump running for RFPT 2A and 2B

SAT \_\_ UNSAT \_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical X Not Critical

c. **VERIFY CLOSED** 2-FCV-3-19(12), RFP 2A(2B) DISCHARGE VALVE.

Standard:

Closes 2-FCV-3-19 RFP 2A Discharge Valve

Closes 2-FCV-3-12 RFP 2B Discharge Valve

SAT \_\_ UNSAT \_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

\*Critical X Not Critical

- d. \***DEPRESS** 2-HS-46-8A(9A), RFPT 2A(2B) SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.

Standard:

Depresses 2-HS-46-8A and 9A

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

- e. **DEPRESS** 2-HS-3-124A(150A), RFPT 2A(2B) TRIP RESET.

Standard:

Depresses 2-HS-3-124A and 150A and resets RFPT Trip

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical X Not Critical

- f. **PLACE** 2-HS-46-112A(138A), RFPT 2A(2B) START/LOCAL ENABLE, in START.

Standard:

Places 2-HS-46-112A and 138A in start

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical\_ Not Critical X

g. **CHECK** RFPT 2A(2B) speed increases to approximately 600 rpm.

Standard:

Verifies RFPT 2A and 2B speed increases to approximately 600 rpm

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical\_ Not Critical X

h. **VERIFY OPEN** 2-FCV-3-20(13), RFP 2A(2B) MIN FLOW VALVE.

Standard:

Verifies 2-FCV-3-20 and 13 OPEN

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical X Not Critical

**CAUTION**

RFPT discharge pressure is limited to below 1250 psig to avoid system damage.

- i. **PLACE** 2-HS-46-8A(9A), RFPT 2A(2B) SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.

Standard:

Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure < 1250 psig as indicated on 2-PI-3-16A, RFPT 2A and 2-PI-3-9A RFPT 2B (Only Critical if exceeds 1250 psig, any pressure < 1250 psig is acceptable).

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical X Not Critical

5. **REPEAT** Steps 4.b through 4.i as necessary.

Standard:

If RFPT 2B was not placed in pressure control will go back to step 4.b and place RFPT 2B in pressure control mode in accordance with steps 4.b through 4.i.

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

END OF TASK

**STOP TIME**

JPM c

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: c

TASK NUMBER: U-000-EM-58

TASK TITLE: 3-EOI Appendix-11F Alternate RPV Pressure Control Systems RFPT On Minimum Flow

K/A NUMBER: 295007 AA2.01 K/A RATING: RO 4.1 SRO 4.1

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

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-EOI Appendix-11F

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER



**INITIAL CONDITIONS:** You are an Operator. The Unit 3 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-11. Reactor water level control is in automatic on RFPT 3C.

**INITIATING CUE:** The Unit Supervisor directs you to place 3A and 3B RFPT in alternate pressure control, as directed by 3-EOI Appendix-11F, and lower Reactor Pressure to 600 psig.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are an Operator. The Unit 3 reactor has scrammed and the turbine bypass valves are not responding for pressure control due to a loss of EHC fluid. EOI-1 has been followed to RC/P-11. Reactor water level control is in automatic on RFPT 3C.

**INITIATING CUE:** The Unit Supervisor directs you to place 3A and 3B RFPT in alternate pressure control, as directed by 3-EOI Appendix-11F, and lower Reactor Pressure to 600 psig.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical ☐ Not Critical ☒

1. IF BOTH of the following exist:

Emergency RPV Depressurization is required,

**AND**

Group 1 Isolation Signal exists, THEN **EXIT** this procedure and **ENTER** EOI Appendix 11H.

Standard:

Verifies that a Group 1 Isolation signal Does Not exist by observing illuminated RED PCIS Group I lights and/or Verified MSIVs are open by observing illuminated RED valve position indicating lights for each valve.

SAT ☐ UNSAT ☐ N/A ☐ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical ☐ Not Critical ☒

2. **VERIFY** MSIVs open.

Standard:

Verifies MSIVs OPEN

SAT ☐ UNSAT ☐ N/A ☐ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical\_\_ Not Critical X

3. **VERIFY** Hotwell Pressure at or below -7 in. Hg.

Standard:

Verifies Hotwell Pressure at or below -7 in. Hg

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical\_\_ Not Critical X

4. **PLACE** RFPTs in service as follows:

a. **VERIFY** the following:

- 1) At least one condensate pump running.
- 2) At least one condensate booster pump running.
- 3) Condensate System aligned to supply suction to RFPs.

Standard:

Verifies one condensate pump and one condensate booster pump running, verifies condensate system aligned to supply suction to RFPs.

SAT \_\_\_\_ UNSAT \_\_\_\_ N/A \_\_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical\_ Not Critical X

b. **VERIFY** Main Oil Pump running for EACH RFPT to be started.

Standard:

Verifies main oil pump running for RFPT 3A and 3B

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical X Not Critical

c. **VERIFY CLOSED** 3-FCV-3-19(12), RFP 3A(3B) DISCHARGE VALVE.

Standard:

Closes 3-FCV-3-19 RFP 3A Discharge Valve

Closes 3-FCV-3-12 RFP 3B Discharge Valve

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

\*Critical X Not Critical

- d. \***DEPRESS** 3-HS-46-8A(9A), RFPT 3A(3B) SPEED CONT RAISE/LOWER, and **VERIFY** amber light is illuminated.

Standard:

Depresses 3-HS-46-8A and 9A

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

- e. **DEPRESS** 3-HS-3-124A(150A), RFPT 3A(3B) TRIP RESET.

Standard:

Depresses 3-HS-3-124A and 150A and resets RFPT Trip

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical X Not Critical

- f. **PLACE** 3-HS-46-112A(138A), RFPT 3A(3B) START/LOCAL ENABLE, in START.

Standard:

Places 3-HS-46-112A and 138A in start

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical\_ Not Critical X

g. **CHECK** RFPT 3A(3B) speed increases to approximately 600 rpm.

Standard:

Verifies RFPT 3A and 3B speed increases to approximately 600 rpm

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical\_ Not Critical X

h. **VERIFY OPEN** 3-FCV-3-20(13), RFP 3A(3B) MIN FLOW VALVE.

Standard:

Verifies 3-FCV-3-20 and 13 OPEN

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 12:Critical X Not Critical**CAUTION**

RFP discharge pressure is limited to below 1250 psig to avoid system damage.

- i. **PLACE** 3-HS-46-8A(9A), RFPT 3A(3B) SPEED CONT RAISE/LOWER in RAISE to raise RFPT speed, maintaining discharge pressure less than 1250 psig.

Standard:

Raises RFPT speed using Manual Speed Control Handswitch, maintaining discharge pressure < 1250 psig as indicated on 3-PI-3-16A, RFPT 3A and 3-PI-3-9A RFPT 3B (Only Critical if exceeds 1250 psig, any pressure < 1250 psig is acceptable).

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:Critical X Not Critical

5. **REPEAT** Steps 4.b through 4.i as necessary.

Standard:

If RFPT 3B was not placed in pressure control will go back to step 4.b and place RFPT 3B in pressure control mode in accordance with steps 4.b through 4.i.

SAT \_\_\_ UNSAT \_\_\_ N/A \_\_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

END OF TASK

**STOP TIME**



JPM d

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: d

TASK NUMBER: 0-74-AB-01

TASK TITLE: Loss of Shutdown Cooling

K/A NUMBER: 295021 AA1.02 K/A RATING: RO 3.5 SRO 3.5

TASK STANDARD: Restores shutdown cooling following an inadvertent RPS actuation, will restore shutdown cooling with RHR Pump 3B and establish a cooldown IAW 3-AOI-74-1.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-AOI-99 and 3-AOI-74-1

VALIDATION TIME: 20 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
5/22/11

**INITIAL CONDITIONS:** You are a Unit 3 operator.

- Unit 3 entered Mode 4 25 minutes ago.
- RHR Loop II using 3B RHR Pump was in shutdown cooling.
- An inadvertent loss of 3B RPS bus resulted in an isolation of RHR shutdown cooling.
- RPS 3B has been energized on the alternate supply.
- An Assistant Unit Operator is standing by for 3B RHR Pump start.
- The current heatup rate is 105° F/hr
- Unit 1 is carrying 1500 gpm for RHRSW Pumps 'B2' and 'D2'.

**INITIATING CUE:** The Unit Supervisor directs you to restore RPS and shutdown cooling in accordance with 3-AOI-99 step 4.2[12] and establish < 90° F/hr cooldown rate.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 3 operator.

- Unit 3 entered Mode 4 25 minutes ago.
- RHR Loop II using 3B RHR Pump was in shutdown cooling.
- An inadvertent loss of 3B RPS bus resulted in an isolation of RHR shutdown cooling.
- RPS 3B has been energized on the alternate supply.
- An Assistant Unit Operator is standing by for 3B RHR Pump start.
- The current heatup rate is 105° F/hr
- Unit 1 is carrying 1500 gpm for RHRSW Pumps 'B2' and 'D2'.

**INITIATING CUE:** The Unit Supervisor directs you to restore RPS and shutdown cooling in accordance with 3-AOI-99 step 4.2[12] and establish < 90° F/hr cooldown rate.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

\*Critical ☒ Not Critical

[12] RESET the RPS trip logic half SCRAM at Panel 3-9-5 as follows:

[12.1] **MOMENTARILY PLACE** SCRAM RESET, 3-HS-99-5A-S5, as follows:

\*[12.2] RESET FIRST position. (Group 2/3)

\*[12.3] RESET SECOND position. (Group 1/4)

[12.4] NORMAL position.

Standard:

On Panel 3-9-5, RESETS the half SCRAM by taking 3-HS-99-5A-S5 to the group2/3 position and then the group 1/4 position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical    Not Critical X

[13]    **CHECK** the following conditions:[13.1] All eight SCRAM SOLENOID GROUP A/B LOGIC RESET lights  
ILLUMINATED.

[13.2] The following four lights ILLUMINATED:

[13.2.1]        SYSTEM A BACKUP SCRAM VALVE, 3-IL-99-5A/AB.

[13.2.2]        SYSTEM B BACKUP SCRAM VALVE, 3-IL-99-5A/CD.

[13.3] Scram Discharge Volume vent and drain valves indicate OPEN.

[13.4] Points SOE033 (Channel A3 manual scram) and SOE035 (Channels A1&A2  
Auto Scram) on ICS computer or on the First Out Printer reads "NOT TRIP" for  
RPS "A".[13.5] Points SOE034 (Channel B3 manual scram) and SOE036 (Channels B1&B2 Auto  
Scram) on ICS computer or on the First Out Printer reads "NOT TRIP" for RPS  
"B".Standard:

On Panel 3-9-5 verifies scram reset by verifying above indications

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 3:\*Critical X Not Critical

[14] RESET PCIS trip logic at Panel 3-9-4 as follows:

\*[14.1] **MOMENTARILY PLACE** PCIS DIV I RESET, 3-HS-64-16A-S32, to left and right RESET positions.[14.2] **CHECK** the following red lights ILLUMINATED:

[14.2.1] MSIV GROUP A1, 3-IL-64-A1

[14.2.2] MSIV GROUP B1, 3-IL-64-B1

Standard:

On Panel 3-9-4 resets PCIS Div 1 by placing 3-HS-64-16A-S32 to left and right positions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 4:\*Critical X Not Critical\*[14.3] **MOMENTARILY PLACE** PCIS DIV II RESET, 3-HS-64-16A-S33, to left and right RESET positions.[14.4] **CHECK** the following red lights ILLUMINATED:

[14.4.1] MSIV GROUP A2, 3-IL-64-A2

[14.4.2] MSIV GROUP B2, 3-IL-64-B2

Standard:

On Panel 3-9-4 resets PCIS Div 2 by placing 3-HS-64-16A-S33 to left and right positions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical    Not Critical X

- [15]    **IF** Unit 3 was in Shutdown Cooling prior to the loss of one RPS Bus, **THEN**  
      **REFER** to Loss of Shutdown Cooling, 3-AOI-74-1.

Standard:

At this point Operator proceeds to restoring Shutdown Cooling IAW 3-AOI-74-1

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

- [9]    **IF** the loss of Shutdown Cooling is due to Group 2 PCIS isolation,  
      **THEN**

**WHEN** conditions permit resetting Group 2 PCIS isolation are met, **PERFORM**  
the following:

- [9.1]    **RESET** Group 2 isolation by momentarily PLACING PCIS DIV I  
          RESET, 3-HS-64-16A-S32, and PCIS DIV II RESET,  
          3-HS-64-16A-S33, in reset.

Standard:

This step was performed in 3-AOI-99

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 7:Critical X Not Critical

- [9.2] **MOMENTARILY DEPRESS** RHR SYS I(II) SD CLG INBD INJECT ISOL RESET, 3-XS-74-126 and 3-XS-74-132. **VERIFY** 3-IL-74-126 and 3-IL-74-132 extinguished.

Standard:

Momentarily Depresses RHR SYS I SD CLG INBD INJECT ISOL RESET, 3-XS-74-132 and verifies 3-IL-74-132 extinguished.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 8:Critical Not Critical X

- [10] **IF** the loss of Shutdown Cooling is due to Group 2 PCIS **AND** the isolation signal fails to reset, or remain reset due to invalid and/or sporadic signals, **THEN** (Otherwise N/A)

Standard:

N/As all Step 4.2[10], the PCIS signal is reset in step 9.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 9:Critical X Not Critical

- [11] **IF** the Group 2 PCIS Isolation has been reset, **THEN RETURN** the affected loop of RHR to Shutdown Cooling as follows:

[11.1] **CLOSE** RHR SYS II LPCI OUTBD INJECT VALVE, 3-FCV-74-66.

Standard:

Closes 3-FCV-74-66 with 3-HS-74-66A

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_



\*\*\*\*\*

Performance Step 10:

Critical    Not Critical X

[11.2] **OPEN** RHR SYS II LPCI INBD INJECT VALVE, 3-FCV-74-67.

Standard:

Opens 3-FCV-74-67 with 3-HS-74-67A

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical    Not Critical X

[11.3] **VERIFY** RHR SYSTEM II MIN FLOW INHIBIT switch,  
3-HS-74-149 in INHIBIT

Standard:

Verifies 3-HS-74-149 in INHIBIT.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical    Not Critical X

[11.4] **VERIFY CLOSED** RHR SYSTEM II MIN FLOW VALVE,  
3-FCV-74-30.

Standard:

Verifies 3-FCV-74-30 is closed.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

\*\*\*\*\*

Performance Step 13:Critical    Not Critical X

[11.5] **VERIFY CLOSED** RHR PUMP 3B and 3D SUPPR POOL SUCT VLVs,  
3-FCV-74-24 and 3-FCV-74-35.

Standard:

Verifies 3-FCV-74-24 & 35 are closed.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 14:Critical    Not Critical X

[11.6] **VERIFY OPEN** RHR PUMP 3B and 3D SD COOLING SUCT VLVs,  
3-FCV-74-25 and 3-FCV-74-36.

Standard:

Verifies 3-FCV-74-25 & 36 are open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 15:\*Critical X    Not Critical

[11.7] **OPEN** RHR SHUTDOWN COOLING SUCT OUTBD and INBD ISOL  
VLVs, 3-FCV-74-47 and 3-FCV-74-48.

Standard:

Opens \*3-HS-74-47 with 3-HS-74-47A and verifies 3-FCV-74-48 open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 16:Critical X Not Critical[11.8] **RESTART RHR PUMP 3B** using 3-HS-74-28A.Standard:

Starts 3B RHR Pump

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

CUE: Unit Supervisor authorizes restart of RHR Pump 3B.

\*\*\*\*\*

Performance Step 17:Critical X Not Critical

[11.9] **THROTTLE RHR SYS II LPCI OUTBD INJECT VALVE**,  
 3-FCV-74-66, to establish and maintain RHR flow as indicated by  
 3-FI-74-64, RHR SYS II FLOW, as follows:

| <b>RHR Pumps in Operation</b>                                 | <b>1</b>            | <b>2</b>             |
|---|---------------------|----------------------|
| Loop Flow   | 7,000 to 10,000 gpm | 14,000 to 20,000 gpm |
| Loop Flow<br>(1 or more fuel<br>bundles removed<br>from core) | 6,000 to 6,500 gpm  | N/A                  |

Standard:

Manipulates 3-HS-74-66 to obtain RHR System II Loop flow between 7,000 and 10,000 gpm on 3-FI-74-64.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**RHR Flow Established Time** \_\_\_\_\_RHR SYSTEM Minimum Flow Guidance:

To minimize system vibration, RHR pump operation should be minimized below 7,000 gpm or above 10,000 gpm, for more than 3 minutes at minimum flow.

\*\*\*\*\*

Performance Step 18:

Critical    Not Critical X

[11.10] **WHEN** time permits after RHR pump is started, **THEN**

**VERIFY** RHR Pump Breaker charging spring recharged by observing  
amber breaker spring charged light is on and closing spring target indicates  
charged.

Standard:

Dispatched personnel to verify RHR Pump 3B breaker closing spring recharged.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE: If requested, Acknowledge and state Operator in route**

\*\*\*\*\*

Performance Step 19:

Critical    Not Critical X

[11.11] **VERIFY** inservice RHRSW pump for the appropriate header.  
**REFER TO 0-OI-23.**

Standard:

Verifies RHRSW Pump D2 in Service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

JPM d

\*\*\*\*\*

Performance Step 20:

Critical ☒ Not Critical

[11.12] **SLOWLY THROTTLE RHR HX 3D RHRSW OUTLET VALVE, 3-FCV-23-52, to obtain desired cooldown rate.**

Standard:

Throttles 3-FCV-23-52 open to commence a cooldown not to exceed 90° F/hr. Must throttle 3-FCV-23-52 further open then currently set at for a cooldown to be in progress. Monitors for a cooldown using ICS screens RHRHEX or HUR1 or 2 or Recirc Loop Temperature recorder 3-XR-68-2/5, or 3-TR-74-80 RHR/Fuel Pool Cooling Temperature recorder. Must establish a cooldown rate not to exceed 90° F/hr (NOT a heatup rate).

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

**CUE: That completes this task.**

**END OF TASK**

**STOP TIME:** \_\_\_\_\_

JPM d

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: d

TASK NUMBER: 0-74-AB-01

TASK TITLE: Loss of Shutdown Cooling

K/A NUMBER: 295021 AA1.02 K/A RATING: RO 3.5 SRO 3.5

TASK STANDARD: Restores shutdown cooling following an inadvertent RPS actuation, will restore shutdown cooling with RHR Pump 2B and establish a cooldown IAW 2-AOI-74-1.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-AOI-99, 2-AOI-74-1

VALIDATION TIME: 20 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are a Unit 2 operator.

- Unit 2 entered Mode 4 25 minutes ago.
- RHR Loop II using 2B RHR Pump was in shutdown cooling.
- An inadvertent loss of 2B RPS bus resulted in an isolation of RHR shutdown cooling.
- RPS 2B has been energized on the alternate supply.
- An Assistant Unit Operator is standing by for 2B RHR Pump start.
- The current heatup rate is 105° F/hr
- Unit 1 is carrying 1500 gpm for RHRSW Pumps 'B2' and 'D2'.

**INITIATING CUE:** The Unit Supervisor directs you to restore RPS and shutdown cooling in accordance with 2-AOI-99 step 4.2[12] and establish < 90° F/hr cooldown rate.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 2 operator.

- Unit 2 entered Mode 4 25 minutes ago.
- RHR Loop II using 2B RHR Pump was in shutdown cooling.
- An inadvertent loss of 2B RPS bus resulted in an isolation of RHR shutdown cooling.
- RPS 2B has been energized on the alternate supply.
- An Assistant Unit Operator is standing by for 2B RHR Pump start.
- The current heatup rate is 105° F/hr
- Unit 1 is carrying 1500 gpm for RHRSW Pumps 'B2' and 'D2'.

**INITIATING CUE:** The Unit Supervisor directs you to restore RPS and shutdown cooling in accordance with 2-AOI-99 step 4.2[12] and establish < 90° F/hr cooldown rate.



START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

\*Critical ☒ Not Critical

[12] RESET the RPS trip logic half SCRAM at Panel 3-9-5 as follows:

[12.1] **MOMENTARILY PLACE** SCRAM RESET, 2-HS-99-5A-S5, as follows:

\*[12.2] RESET FIRST position. (Group 2/3)

\*[12.3] RESET SECOND position. (Group 1/4)

[12.4] NORMAL position.

Standard:

On Panel 2-9-5, RESETS the half SCRAM by taking 2-HS-99-5A-S5 to the group2/3 position and then the group 1/4 position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical    Not Critical X

[13]    **CHECK** the following conditions:[13.1] All eight SCRAM SOLENOID GROUP A/B LOGIC RESET lights  
ILLUMINATED.

[13.2] The following four lights ILLUMINATED:

[13.2.1]        SYSTEM A BACKUP SCRAM VALVE, 2-IL-99-5A/AB.

[13.2.2]        SYSTEM B BACKUP SCRAM VALVE, 2-IL-99-5A/CD.

[13.3] Scram Discharge Volume vent and drain valves indicate OPEN.

[13.4] Points SOE033 (Channel A3 manual scram) and SOE035 (Channels A1&A2  
Auto Scram) on ICS computer or on the First Out Printer reads "NOT TRIP" for  
RPS "A".[13.5] Points SOE034 (Channel B3 manual scram) and SOE036 (Channels B1&B2 Auto  
Scram) on ICS computer or on the First Out Printer reads "NOT TRIP" for RPS  
"B".Standard:

On Panel 2-9-5 verifies scram reset by verifying above indications

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:\*Critical ☒ Not Critical

[14] RESET PCIS trip logic at Panel 2-9-4 as follows:

\*[14.1] **MOMENTARILY PLACE** PCIS DIV I RESET, 2-HS-64-16A-S32, to left and right RESET positions.[14.2] **CHECK** the following red lights ILLUMINATED:

[14.2.1] MSIV GROUP A1

[14.2.2] MSIV GROUP B1

Standard:

On Panel 2-9-4 resets PCIS Div 1 by placing 2-HS-64-16A-S32 to left and right positions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:\*Critical ☒ Not Critical\*[14.3] **MOMENTARILY PLACE** PCIS DIV II RESET, 2-HS-64-16A-S33, to left and right RESET positions.[14.4] **CHECK** the following red lights ILLUMINATED:

[14.4.1] MSIV GROUP A2

[14.4.2] MSIV GROUP B2

Standard:

On Panel 2-9-4 resets PCIS Div 2 by placing 2-HS-64-16A-S33 to left and right positions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical    Not Critical X

- [15]    **IF** Unit 3 was in Shutdown Cooling prior to the loss of one RPS Bus, **THEN**  
**REFER** to Loss of Shutdown Cooling, 2-AOI-74-1.

Standard:

At this point Operator proceeds to restoring Shutdown Cooling IAW 2-AOI-74-1

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

- [12]    **IF** the loss of Shutdown Cooling is due to Group 2 PCIS isolation, **WHEN** conditions  
 which permit resetting Group 2 PCIS isolation are met, **THEN** (Otherwise N/A)

**PERFORM** the following:

- [12.1] **RESET** Group 2 isolation by momentarily PLACING PCIS DIV I  
 RESET, 2-HS-64-16A-S32, and PCIS DIV II RESET,  
 2-HS-64-16A-S33, in reset.

Standard:

This step was performed in 2-AOI-99

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*  
Performance Step 7: Critical X Not Critical

- [12.2] **MOMENTARILY DEPRESS** RHR SYS I(II) SD CLG INBD INJECT ISOL RESET, 2-XS-74-126 and 2-XS-74-132. **VERIFY** 2-IL-74-126 and 2-IL-74-132 extinguished.

Standard:

Momentarily Depresses RHR SYS I SD CLG INBD INJECT ISOL RESET, 2-XS-74-132 and verifies 2-IL-74-132 extinguished.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*  
Performance Step 8: Critical Not Critical X

- [13] **IF** the loss of Shutdown Cooling is due to Group 2 PCIS **AND** the isolation signal fails to reset, or remain reset due to invalid and/or sporadic signals, **THEN** (Otherwise N/A)

Standard:

N/As all Step 4.2[13], the PCIS signal is reset in step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*  
Performance Step 9: Critical X Not Critical

- [14] **IF** the Group 2 PCIS Isolation has been reset, **THEN** (otherwise N/A)

**RETURN** the affected loop of RHR to Shutdown Cooling as follows:

- [14.1] **CLOSE** RHR SYS II LPCI OUTBD INJECT VALVE, 2-FCV-74-66.

Standard:

Closes 2-FCV-74-66 with 2-HS-74-66A

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*  
Performance Step 10: Critical Not Critical X

[14.2] **OPEN** RHR SYS II LPCI INBD INJECT VALVE, 2-FCV-74-67.

Standard:

Opens 2-FCV-74-67 with 2-HS-74-67A

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
Performance Step 11: Critical Not Critical X

[14.3] **VERIFY** RHR SYSTEM II MIN FLOW INHIBIT switch,  
2-HS-74-149 in INHIBIT

Standard:

Verifies 2-HS-74-149 in INHIBIT.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
Performance Step 12: Critical Not Critical X

[14.4] **VERIFY CLOSED** RHR SYSTEM II MIN FLOW VALVE,  
2-FCV-74-30.

Standard:

Verifies 2-FCV-74-30 is closed.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 13:Critical    Not Critical X

[14.5] **VERIFY CLOSED** RHR PUMP 2B and 2D SUPPR POOL SUCT VLVs,  
2-FCV-74-24 and 2-FCV-74-35.

Standard:

Verifies 2-FCV-74-24 & 35 are closed.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 14:Critical    Not Critical X

[14.6] **VERIFY OPEN** RHR PUMP 2B and 2D SD COOLING SUCT VLVs,  
2-FCV-74-25 and 2-FCV-74-36.

Standard:

Verifies 2-FCV-74-25 & 36 are open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 15:\*Critical X    Not Critical

[14.7] **OPEN** RHR SHUTDOWN COOLING SUCT OUTBD and INBD ISOL  
VLVs, 2-FCV-74-47 and 2-FCV-74-48.

Standard:

Opens \*2-HS-74-47 with 2-HS-74-47A and verifies 2-FCV-74-48 open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 16:Critical X Not Critical

- [14.8] **IF** the tripped pump has been determined to be in operating condition and with Unit Supervisor permission,  
**THEN: RESTART** tripped RHR pump(s) RHR PUMP 2B using  
 2-HS-74-28A

Standard:

Starts 2B RHR Pump

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

CUE: Unit Supervisor authorizes restart of RHR Pump 2B.

\*\*\*\*\*

Performance Step 17:Critical X Not Critical

- [14.9] **THROTTLE** RHR SYS II LPCI OUTBD INJECT VALVE,  
 2-FCV-74-66, to establish and maintain RHR flow as indicated by  
 2-FI-74-64, RHR SYS I FLOW, as follows:

| <b>RHR Pumps in Operation</b>                                 | <b>1</b>            | <b>2</b>             |
|---|---------------------|----------------------|
| Loop Flow   | 7,000 to 10,000 gpm | 14,000 to 20,000 gpm |
| Loop Flow<br>(1 or more fuel<br>bundles removed<br>from core) | 6,000 to 6,500 gpm  | N/A                  |

Standard:

Manipulates 2-HS-74-66 to obtain RHR System I Loop flow between 7,000 and 10,000 gpm on 2-FI-74-64.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**RHR Flow Established Time** \_\_\_\_\_RHR SYSTEM Minimum Flow Guidance:

To minimize system vibration, RHR pump operation should be minimized below 7,000 gpm or above 10,000 gpm, for more than 3 minutes at minimum flow.



\*\*\*\*\*

Performance Step 18:Critical    Not Critical X[14.10] **WHEN** time permits after RHR pump is started, **THEN**

**VERIFY** RHR Pump Breaker charging spring recharged by observing  
amber breaker spring charged light is on and closing spring target indicates  
charged.

Standard:

Dispatched personnel to verify RHR Pump 2A breaker closing spring recharged.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE: If requested, Acknowledge and state Operator in route**

\*\*\*\*\*

Performance Step 19:Critical    Not Critical X

[14.11] **VERIFY** inservice RHRSW pump for the appropriate header.  
**REFER TO 0-OI-23.**

Standard:

Verifies RHRSW Pump D2 in service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 20:Critical X Not Critical

[14.12] **SLOWLY THROTTLE** RHR HX 2D RHRSW OUTLET  
VALVE, 2-FCV-23-52, to obtain desired cooldown rate.

Standard:

Throttles 2-FCV-23-52 open to commence a cooldown not to exceed 90° F/hr. Must throttle 2-FCV-23-52 further open then currently set at for a cooldown to be in progress. Monitors for a cooldown using ICS screens RHRHEX or HUR1 or 2 or Recirc Loop Temperature recorder 2-XR-68-2/5, or 2-TR-74-80 RHR/Fuel Pool Cooling Temperature recorder. Must establish a cooldown rate not to exceed 90° F/hr (NOT a heatup rate).

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE: That completes this task.****END OF TASK****STOP TIME:** \_\_\_\_\_

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: e-**ALTERNATE PATH**

TASK NUMBER: U-064-AB-06

TASK TITLE: TIP Isolation Failure

K/A NUMBER: 223002 A2.03 K/A RATING: RO 3.0 SRO 3.3

PRA:

TASK STANDARD: The TIPs are manually driven in, for TIP E that does not retract in manual the TIP shear valve is activated. For TIPs A, B, and D the Ball valves are manually closed, after the TIP is in the In-Shield position.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-AOI-64-2E

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are an Operator. Traversing Incore Probe (TIP) operations were in progress on Unit 2 while in Mode 1. High Drywell pressure caused a Reactor Scram. The Unit Supervisor has entered EOI-1 and 2.

**INITIATING CUES:** Unit Supervisor directs you to verify a Group 8 Isolation in accordance with 2-AOI-64-2E, Traversing Incore Probe Isolation.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are an Operator. Traversing Incore Probe (TIP) operations were in progress on Unit 2 while in Mode 1. High Drywell pressure caused a Reactor Scram. The Unit Supervisor has entered EOI-1 and 2.

**INITIATING CUES:** Unit Supervisor directs you to verify a Group 8 Isolation in accordance with 2-AOI-64-2E, Traversing Incore Probe Isolation.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1: Critical Not Critical X

Traversing Incore Probe Isolation 2-AOI-64-2E

4.1 Immediate Actions

None.

4.2 Subsequent Actions

[1] IF any EOI entry condition is met, THEN  
ENTER appropriate EOI(s). (Otherwise N/A)

Standard:

Given in initial conditions that Unit Supervisor has entered EOIs

SAT\_\_ UNSAT\_\_ N/A \_\_COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 2: Critical Not Critical X

[2] MONITOR TIP detector to ensure it stops at its shield chamber limit and the ball valve closes.  
[2.1] IF detector does NOT stop, THEN PLACE Mode Switch in OFF. (Otherwise N/A)

Standard:

Step is NA, detectors are not moving

SAT\_\_ UNSAT\_\_ N/A \_\_COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical Not Critical X

[3] **VERIFY** automatic actions. (N/A for guide tube leak)

Standard:

Verifies four of the TIP detectors A, B, D and E failed to retract and their associated ball valves failed to close.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE: NO Guide Tube Leak**

\*\*\*\*\*

Performance Step 4:

Critical X Not Critical

[4] **IF** a guide tube leak is detected or detector is stuck, **THEN PERFORM** the following for any TIP channel with an open ball valve. (Otherwise N/A)

[4.1] **VERIFY** MODE switch in MAN.

Standard:

Places Mode Switch in Manual for TIPs A, B, D and E

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical X Not Critical

[4.2] **PLACE** MANUAL switch in REV.

Standard:

Places MANUAL switch in REV for TIPS A, B, D and E and verifies that TIPS A, B, and D retract. Identifies that TIP E fails to retract.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical Not Critical X

[4.3] **WHEN** detector reaches IN-SHIELD position, **THEN PLACE** MANUAL switch to OFF. (N/A if detector does not reach IN-SHIELD)

Standard:

Places MANUAL switch to OFF for TIPS A, B, and D when the detector reaches it's retract position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

Critical X Not Critical

[4.4] **PLACE** MAN VALVE CONTROL Switch to CLOSED. (N/A if detector does not reach IN-SHIELD)

Standard:

Places MAN VALVE CONTROL switch to CLOSED for TIPS A, B, and D.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_



\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

[4.5] **IF** TIP detector does not retract and associated ball valve close, **THEN**  
**PERFORM** the following to activate the TIP shear valves

[4.5.1] **OBTAIN** Shift Manager permission and key PA 235.

Standard:

Obtains key PA 235, (Key PA 235 is a TYPE of key, located on key hook #8)

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** If Asked Shift Manager permission is granted

\*\*\*\*\*

Performance Step 9:

Critical X Not Critical

[4.5.2] **INSERT** key into keylock of TIP panel for TIP that has not fully  
withdrawn.

2-XS-94-507 SHEAR VALVE INDEX E

Standard:

Inserts key into keylock of TIP panel for TIP E

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

\*Critical X Not Critical

[4.5.3] **TURN** key to \*FIRE position then to MONITOR position.

2-XS-94-507 SHEAR VALVE INDEX E

Standard:

Turns key to Fire position for TIP E is Critical, returning key to Monitor position is not critical

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical Not Critical X

[4.5.4] **WITHDRAW** key and Return to Shift Manager.

[4.5.5] **PLACE** Hold Order on channel with fired shear valve.

[4.6] **ISOLATE** leak with a Hold Order. (N/A if not a leak)

[4.7] **INITIATE** WO on channel to correct problem.

Standard:

Withdraws key, requests a Hold Order, Initiate WO

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

**CUE:** HOLD order is being written, another operator will initiate WO

\*\*\*\*\*

Performance Step 12:

Critical Not Critical X

[5] **PLACE** all 5 TIP MAN VALVE CONTROL switches in the CLOSED position (Panel 2-9-13).

Standard:

Places Manual Valve Control switches in closed for TIPS C and E

SAT\_\_ UNSAT\_\_ N/A\_\_ COMMENTS:\_\_\_\_\_

END OF TASK

**STOP TIME** \_\_\_\_

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: f

TASK NUMBER: U-085-SU-02

TASK TITLE: 2-SR-3.3.2.1.2 RWM Functional Test for Startup

K/A NUMBER: 201006 A2.05 K/A RATING: RO 3.1 SRO 3.5

TASK STANDARD: Complete 2-SR-3.3.2.1.2 RWM Functional Test for Startup

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-SR-3.3.2.1.2 completed to step 7.0[5]  
Ensure 2-SR-3.1.3.5(A) is open to Group 1 rods

VALIDATION TIME: 15 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

*Mei's  
5/22/12*

**INITIAL CONDITIONS:** You are an Operator on Unit 2. Unit 2 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 2-OI-85. Reactor Engineering has performed 2-SR-3.3.2.1.7.

**INITIATING CUES:** The Unit Supervisor has directed you to complete 2-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are an Operator on Unit 2. Unit 2 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 2-OI-85. Reactor Engineering has performed 2-SR-3.3.2.1.7.

**INITIATING CUES:** The Unit Supervisor has directed you to complete 2-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical \_ Not Critical X

## 7.0 PROCEDURE STEPS

[1] **VERIFY** that the following initial conditions are satisfied:

[1.1] **ALL** precautions **AND** limitations in Section 3.0 have been reviewed.

[1.2] **ALL** prerequisites in Section 4.0 are satisfied

Standard:

Reviews precautions and limitations and verifies initial conditions are satisfied

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical \_ Not Critical X

[2] **OBTAIN** authorization from Unit Supervisor (US) to perform this test procedure on the Surveillance Task Sheet, (STS).

[3] **NOTIFY** Unit Operator (UO) before commencing this 2-SR-3.3.2.1.2 test procedure.

[4] **RECORD** the start date and time, and any pretest remarks on STS.

Standard:

Already completed

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**Examiner Note:** Applicant must place the CRD power switch to OFF first

\*\*\*\*\*

Performance Step 3:

Critical X Not Critical

**NOTE**

**ALL** operations are performed on Panel 2-9-5 in the main Control Room unless otherwise noted.

- [5] **PLACE** the Control Rod Drive (CRD) POWER switch (2-HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON.

Standard:

Places the CRD Power switch to OFF and then ON

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical \_ Not Critical X

- [6] **VERIFY ALL** control rods are deselected on the rod select matrix.

Standard:

Verifies all control rods are deselected

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_



\*\*\*\*\*

Performance Step 5:

Critical \_ Not Critical X

[7] **PERFORM** the RWM Functional Test as follows:

[7.1] **VERIFY OR PLACE** the RWM in operation per 2-OI-85.

[7.2] **REQUEST** Reactor Engineering to **PERFORM** 2-SR-3.3.2.1.7  
**OR VERIFY** performance of 2-SR-3.3.2.1.7.

Standard:

Given in initial conditions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical X Not Critical

[7.3] **REFER** to the Control Rod Movement Data Sheet from  
2-SR-3.1.3.5(A) to identify a rod from RWM Group 02.

[7.4] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_

Standard:

Refers to 2-SR-3.1.3.5(A) and chooses a rod from Group 2, records identified rod (can be ANY control rod from RWM Group 2 (A2 Startup Sequence) – (02-31, 26-07, 58-23, 42-55, 10-39, 42-07, 58-39, 26-55, 10-23, 50-15, 50-47, 18-47, 18-15, 50-31, 34-47, 18-31, 34-15, 42-39, 26-39, 26-23, 42-23, or 34-31)

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

\*Critical X Not Critical

\*[7.5]        **SELECT** the rod recorded in Step 7.0[7.4].

[7.6]        **VERIFY** the SELECT ERROR status block on the RWM display  
is in alarm (red background).

Standard:

Selects the rod previously recorded and verifies select error in alarm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 8:

\*Critical X Not Critical

\*[7.7]        **NOTCH** the selected rod to position 02.

[7.8]        **VERIFY** that the rod moved to position 02 is identified as a  
withdraw error on the RWM display.

Standard:

Notches the rod to position 02 and verifies a withdraw error on the display

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

\*Critical ☒ Not Critical

\*[7.9] **PLACE** the CRD Control switch (2-HS-85-48) to ROD OUT NOTCH **AND VERIFY** the following:

- [7.9.1] The selected control rod does **NOT** withdraw.
- [7.9.2] The WITHDRAW BLOCK status block on the RWM display is in alarm (red background).
- [7.9.3] RWM ROD BLOCK (2-XA-55-5B, Window 35) is in ALARM.

Standard:

Places the CRD control switch to ROD OUT NOTCH and verifies rod does not withdraw. Verifies withdraw block status block on RWM display is in alarm as well as RWM Rod Block alarm 2-XA-55-5B, window 35.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical ☒ Not Critical

[7.10] **INSERT** the selected rod from position 02 to 00.

Standard:

Inserts the selected rod from position 02 to 00

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical X Not Critical

[7.11] **REFER** to the Control Rod Movement Data Sheet from 2-SR-3.1.3.5(A) to identify a rod from RWM Group 01.

[7.12] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_

Standard:

Refers to 2-SR-3.1.3.5(A) and chooses a rod from Group 1, records identified rod (can be ANY control rod from RWM Group 1 (A2 Startup Sequence) – (58-31, 34-07, 02-23, 18-55, 50-39, 19-07, 02-39, 34-55, 50-23, 10-15, 10-47, 42-47, 42-15, 10-31, 26-47, 42-31, 26-15, 18-39, 34-39, 34-23, 18-23, or 26-31)

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical X Not Critical

[7.13] **SELECT** the rod recorded in Step 7.0[7.12].

Standard:

Selects the rod recorded previously

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical \_ Not Critical X

- [7.14]      **VERIFY** the WITHDRAW BLOCK status block on the RWM display is **NOT** in alarm.
- [7.15]      **VERIFY** RWM ROD BLOCK (2-XA-55-5B, Window 35) will RESET.
- [7.16]      **VERIFY** that rod Group 01 is indicated as the latched group on the RWM Panel.

Standard:

Verifies the Withdraw Block status block on the RWM display is not in alarm and resets alarm window 35 on 2-XA-55-5B. Verifies that Group 1 is indicated as the latched Group on the RWM panel

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

\*\*\*\*\*

Performance Step 14:

\*Critical X Not Critical

**NOTE**

RWM Rod Withdraw Block may be received whenever deselecting rod.

- \*[7.17]      **PLACE** the Control Rod Drive (CRD) Power switch (2- HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON.
- [7.18]      **VERIFY ALL** control rods are deselected on the rod select matrix.

Standard:

Places the CRD Power switch to OFF and then ON and verifies all control rods are deselected on the rod select matrix

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_  
\_\_\_\_\_

\*\*\*\*\*

Performance Step 15:

Critical \_ Not Critical X

- [8] **NOTIFY** the UO that this SR test procedure is complete.
- [9] **NOTIFY** the US that this SR test procedure is complete and obtain Acceptance Criteria Review on STS.

Standard:

Notifies personnel of completion and requests US review Acceptance Criteria from STS

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

END OF TASK

**STOP TIME** \_\_\_\_





**Browns Ferry Nuclear Plant**

**Unit 2**

**Surveillance Procedure**

**2-SR-3.3.2.1.2**

**RWM Functional Test for Startup**

**Revision 0004**

**Quality Related**

**Level of Use: Continuous Use**

**Level of Use or Other Information: P2311**

**Effective Date: 03-25-2011**

**Responsible Organization: RXE, Reactor Engineering**

**Prepared By: William Hayes @4743**

**Approved By: J. Mike Keck**



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### Current Revision Description

Pages Affected: 2, 7-10

Type of Change: Revision

Tracking Number: 005

Revision 0004. Revised to reflect software change to RWM and replace attachment 1 with Surveillance Task Sheet.

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## 1.0 INTRODUCTION

### 1.1 Purpose

This Surveillance Procedure performs the channel functional test for Rod Worth Minimizer (RWM) function for startup. This procedure demonstrates operability of the RWM in conformance with the requirements specified in Technical Specification (TS) Surveillance Requirement (SR) 3.3.2.1.2.

### 1.2 Scope

The channel functional test is performed for the RWM to demonstrate that the entire system will perform its intended function. The channel functional test is performed by attempting to withdraw a control rod **NOT** in compliance with the prescribed sequence and verifying a control rod block occurs. This test is performed as soon as possible after the applicable conditions are entered. This test fully satisfies the requirements of Technical Specification SR 3.3.2.1.2. It may also be used to partially satisfy the requirements of Technical Specification SR 3.10.8.2.

Normally, this Surveillance Procedure will be performed during reactor startup after entering Mode 2 just prior to control rod withdrawals for the purpose of making the reactor critical.

### 1.3 Frequency

Once every 92 days. **NOT** required to be performed until 1 hour after any control rod is withdrawn at  $\leq 10\%$  Rated Thermal Power (RTP) in MODE 2.

### 1.4 Applicability

Modes 1 and 2 with THERMAL POWER  $\leq 10\%$  RTP (SR 3.3.2.1.2).

Mode 5 with the reactor mode switch in the startup/hot standby position (SR 3.10.8.2).

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## 2.0 REFERENCES

### 2.1 Unit 2 Technical Specifications

- A. Section 3.3.2.1, Control Rod Block Instrumentation.
- B. Section 3.10.2, Reactor Mode Switch Interlock Testing.
- C. Section 3.10.8, SHUTDOWN MARGIN (SDM) Test - Refueling.

### 2.2 Updated Final Safety Analysis Report (UFSAR)

- A. Section 7.7, Reactor Manual Control System.
- B. Section 7.16, Plant Process Computer.

### 2.3 Drawings

- A. 2-729E857, Rod Worth Minimizer System Elementary Diagram.
- B. 2-730E321, Reactor Manual Control System Elementary Diagram.

### 2.4 Other Documents

- A. 2-SR-3.1.3.5(A), Control Rod Coupling Integrity Check.
- B. 2-SR-3.3.2.1.7, RWM Program Verification.
- C. 2-GOI-100-1A, Unit Startup and Power Operation.
- D. 2-OI-85, Control Rod Drive System.

## 3.0 PRECAUTIONS AND LIMITATIONS

- A. Whenever **ANY** step is failed, the Reactor Engineer (RE) **OR** Shift Technical Advisor (STA) should be notified for assistance.
- B. Refer to 2-OI-85 whenever moving control rods.

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#### 4.0 PREREQUISITES

☒ [1] This copy of 2-SR-3.3.2.1.2 is verified to be the most current revision.

OP

☒ [2] The following personnel are available to perform this Surveillance Procedure:

One (1) UO **AND**  
One (1) RE.

OP

☒ [3] The reactor is in Mode 2.

OP

#### 5.0 SPECIAL TOOLS AND EQUIPMENT RECOMMENDED

None

#### 6.0 ACCEPTANCE CRITERIA

A. Responses which fail to satisfy the following Acceptance Criteria (AC) constitute unsatisfactory Surveillance Procedure results **AND** require immediate notification of the Unit Supervisor (US) at the time of the failure:

1. The rod block function of the RWM for an out-of-sequence rod shall be verified by attempting to move an out of sequence control rod **AND** verifying a control rod block occurs.

B. Steps which determine the above criteria are designated by (AC) next to the signoff blank.

|                             |  |   |
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## 7.0 PROCEDURE STEPS

- [1] **VERIFY** that the following initial conditions are satisfied:
  - [1.1] **ALL** precautions **AND** limitations in Section 3.0 have been reviewed. \_\_\_\_\_
  - [1.2] **ALL** prerequisites in Section 4.0 are satisfied. \_\_\_\_\_
- [2] **OBTAIN** authorization from Unit Supervisor (US) to perform this test procedure on the Surveillance Task Sheet, (STS). \_\_\_\_\_
- [3] [NRC/C] **NOTIFY** Unit Operator (UO) before commencing this 2-SR-3.3.2.1.2 test procedure. [RPT 82-16, LER 259/8232]. \_\_\_\_\_
- [4] **RECORD** the start date and time, and any pretest remarks on STS. \_\_\_\_\_

### NOTE

**ALL** operations are performed on Panel 2-9-5 in the main Control Room unless otherwise noted.

- [5] **PLACE** the Control Rod Drive (CRD) POWER switch (2-HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON. \_\_\_\_\_
- [6] **VERIFY ALL** control rods are deselected on the rod select matrix. \_\_\_\_\_

|                                     |   |  |
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## 7.0 PROCEDURE STEPS (continued)

[7] **PERFORM** the RWM Functional Test as follows:

[7.1] **VERIFY OR PLACE** the RWM in operation per 2-OI-85.

[7.2] [NER/C] **REQUEST** Reactor Engineering to  
**PERFORM 2-SR-3.3.2.1.7 OR VERIFY** performance of  
2-SR-3.3.2.1.7. [INPO SOER 84-002]

RE

[7.3] **REFER** to the Control Rod Movement  
Data Sheet from 2-SR-3.1.3.5(A) to identify a rod from  
RWM Group 02.

[7.4] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_

[7.5] **SELECT** the rod recorded in Step 7.0[7.4].

[7.6] **VERIFY** the SELECT ERROR status block on the  
RWM display is in alarm (red background).

[7.7] **NOTCH** the selected rod to position 02.

[7.8] **VERIFY** that the rod moved to position 02 is identified  
as a withdraw error on the RWM display.

[7.9] **PLACE** the CRD Control switch (2-HS-85-48) to  
ROD OUT NOTCH **AND VERIFY** the following:

[7.9.1] The selected control rod does **NOT** withdraw.

\_\_\_\_(AC)

[7.9.2] The WITHDRAW BLOCK status block on the  
RWM display is in alarm (red background).

\_\_\_\_(AC)

[7.9.3] RWM ROD BLOCK (2-XA-55-5B, Window 35) is in  
ALARM.

[7.10] **INSERT** the selected rod from position 02 to 00.

[7.11] **REFER** to the Control Rod Movement  
Data Sheet from 2-SR-3.1.3.5(A) to identify a rod from  
RWM Group 01.

|                             |  |   |
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## 7.0 PROCEDURE STEPS (continued)

[7.12] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_ \_\_\_\_\_

[7.13] **SELECT** the rod recorded in Step 7.0[7.12]. \_\_\_\_\_

[7.14] **VERIFY** the WITHDRAW BLOCK status block on the RWM display is **NOT** in alarm. \_\_\_\_\_

[7.15] **VERIFY** RWM ROD BLOCK (2-XA-55-5B, Window 35) will RESET. \_\_\_\_\_

[7.16] **VERIFY** that rod Group 01 is indicated as the latched group on the RWM Panel. \_\_\_\_\_

### NOTE

RWM Rod Withdraw Block may be received whenever deselecting rod.

[7.17] **PLACE** the Control Rod Drive (CRD) Power switch (2-HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON. \_\_\_\_\_

[7.18] **VERIFY ALL** control rods are deselected on the rod select matrix. \_\_\_\_\_

[8] **NOTIFY** the UO that this SR test procedure is complete. \_\_\_\_\_

[9] **NOTIFY** the US that this SR test procedure is complete and **OBTAIN** Acceptance Criteria Review on STS. \_\_\_\_\_

## 8.0 ILLUSTRATIONS/ATTACHMENTS

None



OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: f

TASK NUMBER: U-085-SU-02

TASK TITLE: 3-SR-3.3.2.1.2 RWM Functional Test for Startup

K/A NUMBER: 201006 A2.05 K/A RATING: RO 3.1 SRO 3.5

TASK STANDARD: Complete 3-SR-3.3.2.1.2 RWM Functional Test for Startup

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-SR-3.3.2.1.2 completed to step 7.0[1]  
Ensure 3-SR-3.1.3.5(A) is open to Group 1 rods

VALIDATION TIME: 15 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are an Operator on Unit 3. Unit 3 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 3-OI-85. Reactor Engineering has performed 3-SR-3.3.2.1.7.

**INITIATING CUES:** The Unit Supervisor has directed you to complete 3-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are an Operator on Unit 3. Unit 3 is making preparations for startup using the A2 Startup Sequence. The RWM is in operation per 3-OI-85. Reactor Engineering has performed 3-SR-3.3.2.1.7.

**INITIATING CUES:** The Unit Supervisor has directed you to complete 3-SR-3.3.2.1.2, RWM Functional Test for Startup, a Reactor Engineer is present and monitoring as needed

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical \_ Not Critical X

## 7.0 PROCEDURE STEPS

[1] **VERIFY** that the following initial conditions are satisfied:

[1.1] **ALL** precautions **AND** limitations in Section 3.0 have been reviewed.

[1.2] **ALL** prerequisites in Section 4.0 are satisfied

Standard:

Reviews precautions and limitations and verifies initial conditions are satisfied

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical \_ Not Critical X

[2] **OBTAIN** authorization from Unit Supervisor (US) to perform this test procedure on the Surveillance Task Sheet, (STS).

[3] **NOTIFY** Unit Operator (UO) before commencing this 3-SR-3.3.2.1.2 test procedure.

[4] **RECORD** the start date and time, and any pretest remarks on STS.

Standard:

Already completed

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**Examiner Note:** Applicant must place the CRD power switch to OFF first

\*\*\*\*\*

Performance Step 3:

Critical X Not Critical

**NOTE**

**ALL** operations are performed on Panel 3-9-5 in the main Control Room unless otherwise noted.

- [5] **PLACE** the Control Rod Drive (CRD) POWER switch (3-HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON.

Standard:

Places the CRD Power switch to OFF and then ON

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical \_ Not Critical X

- [6] **VERIFY ALL** control rods are deselected on the rod select matrix.

Standard:

Verifies all control rods are deselected

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical \_ Not Critical X

[7] **PERFORM** the RWM Functional Test as follows:

[7.1] **VERIFY OR PLACE** the RWM in operation per 3-OI-85.

[7.2] **REQUEST** Reactor Engineering to **PERFORM** 3-SR-3.3.2.1.7  
**OR VERIFY** performance of 3-SR-3.3.2.1.7.

Standard:

Given in initial conditions

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical X Not Critical

[7.3] **REFER** to the Control Rod Movement Data Sheet from  
3-SR-3.1.3.5(A) to identify a rod from RWM Group 02.

[7.4] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_

Standard:

Refers to 3-SR-3.1.3.5(A) and chooses a rod from Group 2, records identified rod (can be ANY control rod from RWM Group 2 (A2 Startup Sequence) – (02-31, 26-07, 58-23, 42-55, 10-39, 42-07, 58-39, 26-55, 10-23, 50-15, 50-47, 18-47, 18-15, 50-31, 34-47, 18-31, 34-15, 42-39, 26-39, 26-23, 42-23, or 34-31)

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

\*Critical X Not Critical

- \*[7.5]        **SELECT** the rod recorded in Step 7.0[7.4].
- [7.6]        **VERIFY** the SELECT ERROR status block on the RWM display  
is in alarm (red background).

Standard:

Selects the rod previously recorded and verifies select error in alarm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 8:

\*Critical X Not Critical

- \*[7.7]        **NOTCH** the selected rod to position 02.
- [7.8]        **VERIFY** that the rod moved to position 02 is identified as a  
withdraw error on the RWM display.

Standard:

Notches the rod to position 02 and verifies a withdraw error on the display

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

\*Critical X Not Critical

\*[7.9] **PLACE** the CRD Control switch (3-HS-85-48) to ROD OUT NOTCH AND **VERIFY** the following:

- [7.9.1] The selected control rod does **NOT** withdraw.
- [7.9.2] The WITHDRAW BLOCK status block on the RWM display is in alarm (red background).
- [7.9.3] RWM ROD BLOCK (3-XA-55-5B, Window 35) is in ALARM.

Standard:

Places the CRD control switch to ROD OUT NOTCH and verifies rod does not withdraw. Verifies withdraw block status block on RWM display is in alarm as well as RWM Rod Block alarm 3-XA-55-5B, window 35.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 10:

Critical X Not Critical

[7.10] **INSERT** the selected rod from position 02 to 00.

Standard:

Inserts the selected rod from position 02 to 00

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---



\*\*\*\*\*

Performance Step 11:

Critical X Not Critical

[7.11] **REFER** to the Control Rod Movement Data Sheet from 3-SR-3.1.3.5(A) to identify a rod from RWM Group 01.

[7.12] **RECORD** below the rod chosen:

Rod Number: \_\_\_\_ - \_\_\_\_

Standard:

Refers to 3-SR-3.1.3.5(A) and chooses a rod from Group 1, records identified rod (can be ANY control rod from RWM Group 1 (A2 Startup Sequence) – (58-31, 34-07, 02-23, 18-55, 50-39, 19-07, 02-39, 34-55, 50-23, 10-15, 10-47, 42-47, 42-15, 10-31, 26-47, 42-31, 26-15, 18-39, 34-39, 34-23, 18-23, or 26-31)

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical X Not Critical

[7.13] **SELECT** the rod recorded in Step 7.0[7.12].

Standard:

Selects the rod recorded previously

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical \_ Not Critical X

- [7.14] **VERIFY** the WITHDRAW BLOCK status block on the RWM display is **NOT** in alarm.
- [7.15] **VERIFY** RWM ROD BLOCK (3-XA-55-5B, Window 35) will RESET.
- [7.16] **VERIFY** that rod Group 01 is indicated as the latched group on the RWM Panel.

Standard:

Verifies the Withdraw Block status block on the RWM display is not in alarm and resets alarm window 35 on 3-XA-55-5B. Verifies that Group 1 is indicated as the latched Group on the RWM panel

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 14:

\*Critical X Not Critical

**NOTE**

RWM Rod Withdraw Block may be received whenever deselecting rod.

- \*[7.17] **PLACE** the Control Rod Drive (CRD) Power switch (3-HS-85-46) momentarily to OFF **AND** next **SWITCH** to ON.
- [7.18] **VERIFY ALL** control rods are deselected on the rod select matrix.

Standard:

Places the CRD Power switch to OFF and then ON and verifies all control rods are deselected on the rod select matrix

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 15:

Critical \_ Not Critical X

- [8] **NOTIFY** the UO that this SR test procedure is complete.
- [9] **NOTIFY** the US that this SR test procedure is complete and obtain Acceptance Criteria Review on STS.

Standard:

Notifies personnel of completion and requests US review Acceptance Criteria from STS

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

END OF TASK

**STOP TIME** \_\_\_\_

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: g - **ALTERNATE PATH**

TASK NUMBER: U-000-EM-61

TASK TITLE: 2-EOI Appendix-12 Primary Containment Venting

K/A NUMBER: 261000 A2.14 K/A RATING: RO 3.0 SRO 3.2

TASK STANDARD: Vent Primary Containment IAW 2-EOI Appendix-12, after the first Suppression Chamber Vent path is established and fails, operator secures the vent path and establishes the second vent path. Once established operator adjusts flow rate in order to lower Standby Gas Treatment System suction pressure.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-12

VALIDATION TIME: 15 minutes

MAX. TIME ALLOWED:

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

rec'd  
5/20/17

**INITIAL CONDITIONS:** You are a Unit 2 Operator. Unit 2 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 2-EOI Appendix-12.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 2 Operator. Unit 2 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 2-EOI Appendix-12.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical Not Critical X

**CAUTION**

Stack release rates exceeding  $1.4 \times 10^7 \mu\text{Ci/s}$ , or 0-SI-4.8.B.1.a.1 release fraction above 1.0 will result in ODCM release limits being exceeded.

1. **VERIFY** at least one SGTS train in service.

Standard:

Verifies SGTS in service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical Not Critical X

2. **VERIFY CLOSED** the following valves (Panel 2-9-3 or Panel 2-9-54):

- 2-FCV-64-31, DRYWELL INBOARD ISOLATION VLV,
- 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 2-FCV-64-34, SUPPR CHBR INBOARD ISOLATION VLV,
- 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical Not Critical X

3. IF While executing this procedure to vent the Suppression Chamber, Suppression Pool water level can not be determined to be below 20 ft, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

Verifies Suppression Pool Level below 20 feet

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical Not Critical X

4. IF While executing this procedure, the desired vent path is lost or can not be established, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical Not Critical X

5. IF While executing this procedure, CAD addition per SAMG-2, Step G-4 OR G-9, is to begin, THEN BEFORE CAD is initiated, **PERFORM** Step 13 to secure the vent path.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**CUE:** CAD addition is not required



\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

NOTE: Venting may be accomplished using EITHER:

- 2-FIC-84-19, PATH B VENT FLOW CONT,
- OR**
- 2-FIC-84-20, PATH A VENT FLOW CONT.

NOTE: Unless the TSC recommends otherwise, venting the Drywell DIRECTLY should be performed ONLY if the Suppression Chamber can NOT be vented.

6. IF ANY of the following exists:

- Suppression Pool water level can not be determined to be below 20 ft,
- OR**
- Suppression Chamber can NOT be vented,
- OR**
- SRO orders DIRECT drywell venting,

THEN **CONTINUE** in this procedure at:

- Step 10 to vent the Drywell through 2-FCV-84-19,
- OR**
- Step 11 to vent the Drywell through 2-FCV-84-20.

Standard:

Verifies Suppression Pool Level below 20 feet and proceeds to step 7

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

Critical Not Critical X

7. **CONTINUE** in this procedure at:

- Step 8 to vent the Suppression Chamber through 2-FCV-84-19,
- OR**
- Step 9 to vent the Suppression Chamber through 2-FCV-84-20.

Standard:

Continues at Step 8

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NRC:** Candidate will start at step 8, which starts below at performance step 8. Securing the vent path will occur in accordance with EOI Appendix step 4 starts at performance step 15. Aligning the second vent path commences at performance step 20.

**Below is the Vent path that will be established through 84-19**

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

8. **VENT** the Suppression Chamber using 2-FIC-84-19, PATH B VENT FLOW CONT, as follows:

- a. **PLACE** keylock switch 2-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 2-9-54).

Standard:

Places 2-HS-84-35 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical Not Critical X

- b. **VERIFY OPEN** 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE  
(Panel 2-9-54).

Standard:

Verifies 2-FCV-64-32 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical X Not Critical

- c. **PLACE** 2-FIC-84-19, PATH B VENT FLOW CONT, in AUTO with setpoint at  
100 scfm (Panel 2-9-55).

Standard:

Places 2-FIC-84-19 Path B Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical X Not Critical

- d. **PLACE** keylock switch 2-HS-84-19, 2-FCV-84-19 CONTROL, in OPEN (Panel  
2-9-55).

Standard:

Places 2-HS-84-19 in Open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical ☒ Not Critical

- e. **VERIFY** 2-FIC-84-19, PATH B VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical ☒ Not Critical

- f. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**Driver: Just prior to the operator adjusting Vent Path flow or at the direction of the NRC fail the first vent path valve closed either 84-19.**

\*\*\*\*\*

Performance Step 14:

Critical Not Critical X

12. **ADJUST** 2-FIC-84-19, PATH B VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,  
**AND**
- 2-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,  
**AND**
- Release rates as determined below:
  - i. IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
  - ii. IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
  - iii. IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
    - Stack release rate of  $1.4 \times 10^7$   $\mu\text{Ci/s}$   
**AND**
    - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Operator notices unstable flow and 2-PA-84-21 alarm light illuminated. Operator will begin to adjust the controller for the Vent Path that is aligned to stabilize flow AND to maintain 2-PA-84-21, alarm light extinguished. Just as the applicant is adjusting the vent valve for the Vent Path that was initially established the valve will fail closed. The operator will proceed to step 13.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NOTE: Below is the start of securing the vent path**

\*\*\*\*\*

Performance Step 15:

\*Critical X Not Critical

13. WHEN ANY of the following exists:

- Venting is no longer required,
- Pressure in the space being vented approaches zero,
- Directed by SRO,

**OR**

- Directed by Step 3, 4, or 5,

THEN **SECURE** venting as follows:

a. **VERIFY** the following keylock switches in OFF (Panel 2-9-54):

- \*• 2-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT,
- 2-HS-84-36, SUPPR CHBR / DW VENT ISOL BYP SELECT.

Standard:

Step 4 directs securing venting if the desired path is lost, and to secure in accordance with step 13 and to re-enter this procedure if further venting is required. Operator Places \*2-HS-84-35 in OFF and verifies 2-HS-84-36 in OFF.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 16:

Critical Not Critical X

- b. **VERIFY** keylock switch 2-HS-84-20, 2-FCV-84-20 ISOLATION BYPASS, in NORMAL (Panel 2-9-55).

Standard:

Verifies 2-HS-84-20 in Normal

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 17:

Critical ☒ Not Critical

- c. **VERIFY** keylock switch 2-HS-84-19, 2-FCV-84-19 CONTROL, in CLOSE  
(Panel 2-9-55).

Standard:

Places 2-HS-84-19 in Close

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 18:

Critical Not Critical ☒

- d. **VERIFY CLOSED** the following valves (Panel 2-9-3 or Panel 2-9-54):

- 2-FCV-64-31, DRYWELL INBD ISOLATION VLV,
- 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 2-FCV-64-34, SUPPR CHBR INBD ISOLATION VLV,
- 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 19:

Critical Not Critical X

- e. **VERIFY CLOSED** 2-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 2-9-3).

Standard:

Verifies 2-FCV-64-141 Closed

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**NOTE: Below is the start of the vent path through 84-20**

\*\*\*\*\*

Performance Step 20:

Critical X Not Critical

9. **VENT** the Suppression Chamber using 2-FIC-84-20, PATH A VENT FLOW CONT, as follows:

- a. **VERIFY OPEN** 2-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 2-9-3).

Standard:

Opens 2-FCV-64-141

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_



\*\*\*\*\*

Performance Step 21:

Critical X Not Critical

- b. **PLACE** keylock switch 2-HS-84-36, SUPPR CHBR/DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 2-9-54).

Standard:

Places 2-HS-84-36 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 22:

Critical Not Critical X

- c. **VERIFY OPEN** 2-FCV-64-34, SUPPR CHBR INBD ISOL VALVE (Panel 2-9-54).

Standard:

Verifies 2-FCV-64-34 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 23:

Critical Not Critical X

- d. **VERIFY** 2-FIC-84-20, PATH A VENT FLOW CONT, in AUTO with setpoint at 100 scfm (Panel 2-9-55).

Standard:

Verifies 2-FIC-84-20 Path A Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 24:

Critical ☒ Not Critical

- e. **PLACE** keylock switch 2-HS-84-20, 2-FCV-84-20 ISOLATION BYPASS, in BYPASS (Panel 2-9-55).

Standard:

Places 2-HS-84-20 in Bypass.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 25:

Critical ☒ Not Critical

- f. **VERIFY** 2-FIC-84-20, PATH A VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 26:

Critical ☒ Not Critical

- g. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 27:

Critical X Not Critical

12. **ADJUST** 2-FIC-84-20, PATH A VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,  
**AND**
- 2-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,  
**AND**
- Release rates as determined below:
  - i. IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
  - ii. IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
  - iii. IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
    - Stack release rate of  $1.4 \times 10^7$   $\mu\text{Ci/s}$   
**AND**
    - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Adjusts the controller for the Vent Path that is aligned to stabilize flow AND to maintain 2-PA-84-21, alarm light extinguished.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE:** Primary Containment Flooding and SAMG are not being executed

**STOP TIME** \_\_\_\_\_

END OF TASK

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: g - **ALTERNATE PATH**

TASK NUMBER: U-000-EM-61

TASK TITLE: 2-EOI Appendix-12 Primary Containment Venting

K/A NUMBER: 261000 A2.14 K/A RATING: RO 3.0 SRO 3.2

TASK STANDARD: Vent Primary Containment IAW 2-EOI Appendix-12, after the first Suppression Chamber Vent path is established and fails, operator secures the vent path and establishes the second vent path. Once established operator adjusts flow rate in order to lower Standby Gas Treatment System suction pressure.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 2-EOI Appendix-12

VALIDATION TIME: 15 minutes

MAX. TIME ALLOWED:

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are a Unit 2 Operator. Unit 2 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 2-EOI Appendix-12.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 2 Operator. Unit 2 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 2-EOI Appendix-12.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical Not Critical X

**CAUTION**

Stack release rates exceeding  $1.4 \times 10^7 \mu\text{Ci/s}$ , or 0-SI-4.8.B.1.a.1 release fraction above 1.0 will result in ODCM release limits being exceeded.

1. **VERIFY** at least one SGTS train in service.

Standard:

Verifies SGTS in service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical Not Critical X

2. **VERIFY CLOSED** the following valves (Panel 2-9-3 or Panel 2-9-54):

- 2-FCV-64-31, DRYWELL INBOARD ISOLATION VLV,
- 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 2-FCV-64-34, SUPPR CHBR INBOARD ISOLATION VLV,
- 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical Not Critical X

3. IF While executing this procedure to vent the Suppression Chamber, Suppression Pool water level can not be determined to be below 20 ft, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

Verifies Suppression Pool Level below 20 feet

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical Not Critical X

4. IF While executing this procedure, the desired vent path is lost or can not be established, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical Not Critical X

5. IF While executing this procedure, CAD addition per SAMG-2, Step G-4 OR G-9, is to begin, THEN BEFORE CAD is initiated, **PERFORM** Step 13 to secure the vent path.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

**CUE:** CAD addition is not required



\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

NOTE: Venting may be accomplished using EITHER:

- 2-FIC-84-19, PATH B VENT FLOW CONT,
- OR**
- 2-FIC-84-20, PATH A VENT FLOW CONT.

NOTE: Unless the TSC recommends otherwise, venting the Drywell DIRECTLY should be performed ONLY if the Suppression Chamber can NOT be vented.

6. IF ANY of the following exists:

- Suppression Pool water level can not be determined to be below 20 ft,
- OR**
- Suppression Chamber can NOT be vented,
- OR**
- SRO orders DIRECT drywell venting,

THEN **CONTINUE** in this procedure at:

- Step 10 to vent the Drywell through 2-FCV-84-19,
- OR**
- Step 11 to vent the Drywell through 2-FCV-84-20.

Standard:

Verifies Suppression Pool Level below 20 feet and proceeds to step 7

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

Critical Not Critical X

7. **CONTINUE** in this procedure at:

- Step 8 to vent the Suppression Chamber through 2-FCV-84-19,
- OR**
- Step 9 to vent the Suppression Chamber through 2-FCV-84-20.

Standard:

Continues at step 9

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**NRC:** Candidate will start at step 9, which starts below at performance step 8. Securing the vent path will occur in accordance with EOI Appendix step 4 starts at performance step 16. Aligning the second vent path commences at performance step 21.

**Below is the Vent path that will be established through 84-20**

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

9. **VENT** the Suppression Chamber using 2-FIC-84-20, PATH A VENT FLOW CONT, as follows:

- a. **VERIFY OPEN** 2-FCV-64-141, DRYWELL DP COMP BYPASS VALVE (Panel 2-9-3).

Standard:

Opens 2-FCV-64-141

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical ☒ Not Critical

- b. **PLACE** keylock switch 2-HS-84-36, SUPPR CHBR/DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 2-9-54).

Standard:

Places 2-HS-84-36 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical Not Critical ☒

- c. **VERIFY OPEN** 2-FCV-64-34, SUPPR CHBR INBD ISOL VALVE (Panel 2-9-54).

Standard:

Verifies 2-FCV-64-34 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical Not Critical ☒

- d. **VERIFY** 2-FIC-84-20, PATH A VENT FLOW CONT, in AUTO with setpoint at 100 scfm (Panel 2-9-55).

Standard:

Verifies 2-FIC-84-20 Path A Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

\*\*\*\*\*

Performance Step 12:

Critical X Not Critical

- e. **PLACE** keylock switch 2-HS-84-20, 2-FCV-84-20 ISOLATION BYPASS, in BYPASS (Panel 2-9-55).

Standard:

Places 2-HS-84-20 in Bypass.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical X Not Critical

- f. **VERIFY** 2-FIC-84-20, PATH A VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 14:

Critical X Not Critical

- g. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Driver: Just prior to the operator adjusting Vent Path flow or at the direction of the NRC fail the first vent path valve closed 84-20.**

\*\*\*\*\*

Performance Step 15:

Critical X Not Critical

12. **ADJUST** 2-FIC-84-20, PATH A VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,  
**AND**
- 2-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,  
**AND**
- Release rates as determined below:
  - i. IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
  - ii. IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
  - iii. IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
    - Stack release rate of  $1.4 \times 10^7 \mu\text{Ci/s}$   
**AND**
    - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Operator notices unstable flow and 2-PA-84-21 alarm light illuminated. Operator will begin to adjust the controller for the Vent Path that is aligned to stabilize flow AND to maintain 2-PA-84-21, alarm light extinguished. Just as the applicant is adjusting the vent valve for the Vent Path that was initially established the valve will fail closed. The operator will proceed to step 13.

SAT\_\_ UNSAT\_\_ N/A\_\_ COMMENTS: \_\_\_\_\_

**NOTE: Below is the start of securing the vent path**

\*\*\*\*\*

Performance Step 16:

\*Critical X Not Critical

13. WHEN ANY of the following exists:

- Venting is no longer required,
- Pressure in the space being vented approaches zero,
- Directed by SRO,

**OR**

- Directed by Step 3, 4, or 5,

THEN **SECURE** venting as follows:

a. **VERIFY** the following keylock switches in OFF (Panel 2-9-54):

- 2-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT,
- \*• 2-HS-84-36, SUPPR CHBR / DW VENT ISOL BYP SELECT.

Standard:

Step 4 directs securing venting if the desired path is lost, and to secure in accordance with step 13 and to re-enter this procedure if further venting is required. Operator verifies 2-HS-84-35 in OFF and places \*2-HS-84-36 in OFF.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 17:

Critical X Not Critical

b. **VERIFY** keylock switch 2-HS-84-20, 2-FCV-84-20 ISOLATION BYPASS, in NORMAL (Panel 2-9-55).

Standard:

Places 2-HS-84-20 in Normal

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 18:

Critical Not Critical X

- c. **VERIFY** keylock switch 2-HS-84-19, 2-FCV-84-19 CONTROL, in CLOSE  
(Panel 2-9-55).

Standard:

Verifies 2-HS-84-19 in Close

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 19:

Critical Not Critical X

- d. **VERIFY CLOSED** the following valves (Panel 2-9-3 or Panel 2-9-54):

- 2-FCV-64-31, DRYWELL INBD ISOLATION VLV,
- 2-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 2-FCV-64-34, SUPPR CHBR INBD ISOLATION VLV,
- 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 20:

Critical ☒ Not Critical

- e. **VERIFY CLOSED** 2-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 2-9-3).

Standard:

Verifies 2-FCV-64-141 Closed

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NOTE: Below is the start of the second vent path through 84-19**

\*\*\*\*\*

Performance Step 21:

Critical ☒ Not Critical

8. **VENT** the Suppression Chamber using 2-FIC-84-19, PATH B VENT FLOW CONT, as follows:

- a. **PLACE** keylock switch 2-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP  
SELECT, to SUPPR-CHBR position (Panel 2-9-54).

Standard:

Places 2-HS-84-35 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_



\*\*\*\*\*

Performance Step 22:

Critical Not Critical X

- b. **VERIFY OPEN** 2-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE  
(Panel 2-9-54).

Standard:

Verifies 2-FCV-64-32 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 23:

Critical X Not Critical

- c. **PLACE** 2-FIC-84-19, PATH B VENT FLOW CONT, in AUTO with setpoint at  
100 scfm (Panel 2-9-55).

Standard:

Places 2-FIC-84-19 Path B Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 24:

Critical X Not Critical

- d. **PLACE** keylock switch 2-HS-84-19, 2-FCV-84-19 CONTROL, in OPEN (Panel  
2-9-55).

Standard:

Places 2-HS-84-19 in Open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 25:

Critical ☒ Not Critical

- e. **VERIFY** 2-FIC-84-19, PATH B VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 26:

Critical ☒ Not Critical

- f. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 27:

Critical X Not Critical

12. **ADJUST** 2-FIC-84-19, PATH B VENT FLOW CONT, to maintain ALL of the following:

- Stable flow as indicated on controller,  
**AND**
- 2-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,  
**AND**
- Release rates as determined below:
  - i. IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
  - ii. IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
  - iii. IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
    - Stack release rate of  $1.4 \times 10^7$   $\mu\text{Ci/s}$   
**AND**
    - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Adjusts the controller for the Vent Path that is aligned to stabilize flow AND to maintain 2-PA-84-21, alarm light extinguished.

SAT\_\_ UNSAT\_\_ N/A\_\_ COMMENTS:\_\_\_\_\_

**CUE:** Primary Containment Flooding and SAMG are not being executed

**STOP TIME** \_\_\_\_\_

END OF TASK

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: g- **ALTERNATE PATH**

TASK NUMBER: U-000-EM-61

TASK TITLE: 3-EOI Appendix-12 Primary Containment Venting

K/A NUMBER: 261000 A2.14 K/A RATING: RO 3.0 SRO 3.2

TASK STANDARD: Vent Primary Containment IAW 3-EOI Appendix-12, after the first Suppression Chamber Vent path is established and fails, operator secures the vent path and establishes the second vent path. Once established operator adjusts flow rate in order to lower Standby Gas Treatment System suction pressure.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-EOI Appendix-12

VALIDATION TIME: 15 minutes

MAX. TIME ALLOWED:

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are a Unit 3 Operator. Unit 3 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 3-EOI Appendix-12.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 3 Operator. Unit 3 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 3-EOI Appendix-12.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical Not Critical X

**CAUTION**

Stack release rates exceeding  $1.4 \times 10^7 \mu\text{Ci/s}$ , or 0-SI-4.8.B.1.a.1 release fraction above 1.0 will result in ODCM release limits being exceeded.

1. **VERIFY** at least one SGTS train in service.

Standard:

Verifies SGTS in service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical Not Critical X

2. **VERIFY CLOSED** the following valves (Panel 3-9-3 or Panel 3-9-54):

- 3-FCV-64-31, DRYWELL INBOARD ISOLATION VLV,
- 3-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 3-FCV-64-34, SUPPR CHBR INBOARD ISOLATION VLV,
- 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical Not Critical X

3. IF While executing this procedure to vent the Suppression Chamber, Suppression Pool water level can not be determined to be below 20 ft, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

Verifies Suppression Pool Level below 20 feet

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical Not Critical X

4. IF While executing this procedure, the desired vent path is lost or can not be established, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical Not Critical X

5. IF While executing this procedure, CAD addition per SAMG-2, Step G-4 OR G-9, is to begin, THEN BEFORE CAD is initiated, **PERFORM** Step 13 to secure the vent path.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

**CUE:** CAD addition is not required



\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

NOTE: Venting may be accomplished using EITHER:

- 3-FIC-84-19, PATH B VENT FLOW CONT,
- OR**
- 3-FIC-84-20, PATH A VENT FLOW CONT.

NOTE: Unless the TSC recommends otherwise, venting the Drywell DIRECTLY should be performed ONLY if the Suppression Chamber can NOT be vented.

6. IF ANY of the following exists:

- Suppression Pool water level can not be determined to be below 20 ft,
- OR**
- Suppression Chamber can NOT be vented,
- OR**
- SRO orders DIRECT drywell venting,

THEN **CONTINUE** in this procedure at:

- Step 10 to vent the Drywell through 3-FCV-84-19,
- OR**
- Step 11 to vent the Drywell through 3-FCV-84-20.

Standard:

Verifies Suppression Pool Level below 20 feet and proceeds to step 7

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

Critical Not Critical X

7. **CONTINUE** in this procedure at:

- Step 8 to vent the Suppression Chamber through 3-FCV-84-19,  
**OR**
- Step 9 to vent the Suppression Chamber through 3-FCV-84-20.

Standard:

Continues at Step 8 or 9

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**NRC:** Candidate will start at step 8, which starts below at performance step 8. Securing the vent path will occur in accordance with EOI Appendix step 4 starts at performance step 15. Aligning the second vent path commences at performance step 20.

**Below is the first Vent path that will be established through 84-19**

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

8. **VENT** the Suppression Chamber using 3-FIC-84-19, PATH B VENT FLOW CONT, as follows:

- a. **PLACE** keylock switch 3-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 3-9-54).

Standard:

Places 3-HS-84-35 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical Not Critical X

- b. **VERIFY OPEN** 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE  
(Panel 3-9-54).

Standard:

Verifies 3-FCV-64-32 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 10:

Critical X Not Critical

- c. **PLACE** 3-FIC-84-19, PATH B VENT FLOW CONT, in AUTO with setpoint at  
100 scfm (Panel 3-9-55).

Standard:

Places 3-FIC-84-19 Path B Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 11:

Critical X Not Critical

- d. **PLACE** keylock switch 3-HS-84-19, 3-FCV-84-19 CONTROL, in OPEN (Panel  
3-9-55).

Standard:

Places 3-HS-84-19 in Open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 12:

Critical ☒ Not Critical

- e. **VERIFY** 3-FIC-84-19, PATH B VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical ☒ Not Critical

- f. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

**Driver: Just prior to the operator adjusting Vent Path flow or at the direction of the NRC fail the first vent path valve closed 84-19**

\*\*\*\*\*

Performance Step 14:

Critical X Not Critical

12. **ADJUST** 3-FIC-84-19, PATH B VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,

**AND**

- 3-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,

**AND**

- Release rates as determined below:

- IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
- IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
- IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
  - Stack release rate of  $1.4 \times 10^7$   $\mu\text{Ci/s}$

**AND**

- 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Operator notices unstable flow and 3-PA-84-21 alarm light illuminated. Operator will begin to adjust the controller for the Vent Path that is aligned to stabilize flow AND to maintain 3-PA-84-21, alarm light extinguished. Just as the applicant is adjusting the vent valve for the Vent Path that was initially established the valve will fail closed. The operator will proceed to step 13 to secure the vent path alignment.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NOTE: Below is the start of securing the vent path**

\*\*\*\*\*

Performance Step 15:

\*Critical X Not Critical

13. WHEN ANY of the following exists:

- Venting is no longer required,
- Pressure in the space being vented approaches zero,
- Directed by SRO,

**OR**

- Directed by Step 3, 4, or 5,

THEN **SECURE** venting as follows:

a. **VERIFY** the following keylock switches in OFF (Panel 3-9-54):

- \*• 3-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT,
- 3-HS-84-36, SUPPR CHBR / DW VENT ISOL BYP SELECT.

Standard:

Step 4 directs securing venting if the desired path is lost, and to secure in accordance with step 13 and to re-enter this procedure if further venting is required. Operator Places \*3-HS-84-35 in OFF and verifies 3-HS-84-36 in OFF.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 16:

Critical Not Critical X

- b. **VERIFY** keylock switch 3-HS-84-20, 3-FCV-84-20 ISOLATION BYPASS, in NORMAL (Panel 3-9-55).

Standard:

Verifies 3-HS-84-20 in Normal

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 17:

Critical ☒ Not Critical

- c. **VERIFY** keylock switch 3-HS-84-19, 3-FCV-84-19 CONTROL, in CLOSE  
(Panel 3-9-55).

Standard:

Places 3-HS-84-19 in Close

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 18:

Critical Not Critical ☒

- d. **VERIFY CLOSED** the following valves (Panel 3-9-3 or Panel 3-9-54):

- 3-FCV-64-31, DRYWELL INBD ISOLATION VLV,
- 3-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 3-FCV-64-34, SUPPR CHBR INBD ISOLATION VLV,
- 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 19:

Critical Not Critical X

- e. **VERIFY CLOSED** 3-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 3-9-3).

Standard:

Verifies 3-FCV-64-141 Closed

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**NOTE: Below is the start of the second vent path or the 84-20 Vent Path**

\*\*\*\*\*

Performance Step 20:

Critical X Not Critical

9. **VENT** the Suppression Chamber using 3-FIC-84-20, PATH A VENT FLOW CONT, as follows:

- a. **VERIFY OPEN** 3-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 3-9-3).

Standard:

Opens 3-FCV-64-141

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_



\*\*\*\*\*

Performance Step 21:

Critical X Not Critical

- b. **PLACE** keylock switch 3-HS-84-36, SUPPR CHBR/DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 3-9-54).

Standard:

Places 3-HS-84-36 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 22:

Critical Not Critical X

- c. **VERIFY OPEN** 3-FCV-64-34, SUPPR CHBR INBD ISOL VALVE (Panel 3-9-54).

Standard:

Verifies 3-FCV-64-34 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 23:

Critical Not Critical X

- d. **VERIFY** 3-FIC-84-20, PATH A VENT FLOW CONT, in AUTO with setpoint at 100 scfm (Panel 3-9-55).

Standard:

Verifies 3-FIC-84-20 Path A Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 24:

Critical X Not Critical

- e. **PLACE** keylock switch 3-HS-84-20, 3-FCV-84-20 ISOLATION BYPASS, in BYPASS (Panel 3-9-55).

Standard:

Places 3-HS-84-20 in Bypass.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 25:

Critical X Not Critical

- f. **VERIFY** 3-FIC-84-20, PATH A VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 26:

Critical X Not Critical

- g. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

---

\*\*\*\*\*

Performance Step 27:

Critical X Not Critical

12. **ADJUST** 3-FIC-84-20, PATH A VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,

**AND**

- 3-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,

**AND**

- Release rates as determined below:

- IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
- IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
- IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
  - Stack release rate of  $1.4 \times 10^7 \mu\text{Ci/s}$

**AND**

  - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Adjusts the controller for the Vent Path that is aligned to stabilize flow AND to maintain 3-PA-84-21, alarm light extinguished.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** Primary Containment Flooding and SAMG are not being executed

**STOP TIME** \_\_\_\_\_

END OF TASK

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: g- **ALTERNATE PATH**

TASK NUMBER: U-000-EM-61

TASK TITLE: 3-EOI Appendix-12 Primary Containment Venting

K/A NUMBER: 261000 A2.14 K/A RATING: RO 3.0 SRO 3.2

TASK STANDARD: Vent Primary Containment IAW 3-EOI Appendix-12, after the first Suppression Chamber Vent path is established and fails, operator secures the vent path and establishes the second vent path. Once established operator adjusts flow rate in order to lower Standby Gas Treatment System suction pressure.

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 3-EOI Appendix-12

VALIDATION TIME: 15 minutes

MAX. TIME ALLOWED:

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are a Unit 3 Operator. Unit 3 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 3-EOI Appendix-12.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit 3 Operator. Unit 3 reactor has scrammed due to a large LOCA. EOI-2 has been followed to PC/H-4. Hydrogen Concentration in Primary Containment is greater than 2.4% on Control Room indicators.

**INITIATING CUE:** The Unit Supervisor directs you to vent the pressure suppression chamber in accordance with 3-EOI Appendix-12.

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical Not Critical X

**CAUTION**

Stack release rates exceeding  $1.4 \times 10^7 \mu\text{Ci/s}$ , or 0-SI-4.8.B.1.a.1 release fraction above 1.0 will result in ODCM release limits being exceeded.

1. **VERIFY** at least one SGTS train in service.

Standard:

Verifies SGTS in service

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 2:

Critical Not Critical X

2. **VERIFY CLOSED** the following valves (Panel 3-9-3 or Panel 3-9-54):

- 3-FCV-64-31, DRYWELL INBOARD ISOLATION VLV,
- 3-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 3-FCV-64-34, SUPPR CHBR INBOARD ISOLATION VLV,
- 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:

Critical Not Critical X

3. IF While executing this procedure to vent the Suppression Chamber, Suppression Pool water level can not be determined to be below 20 ft, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

Verifies Suppression Pool Level below 20 feet

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 4:

Critical Not Critical X

4. IF While executing this procedure, the desired vent path is lost or can not be established, THEN **PERFORM** step 13 to secure the vent path and reenter this procedure if further venting is required.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 5:

Critical Not Critical X

5. IF While executing this procedure, CAD addition per SAMG-2, Step G-4 OR G-9, is to begin, THEN BEFORE CAD is initiated, **PERFORM** Step 13 to secure the vent path.

Standard:

NA

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

**CUE:** CAD addition is not required



\*\*\*\*\*

Performance Step 6:

Critical    Not Critical X

NOTE: Venting may be accomplished using EITHER:

- 3-FIC-84-19, PATH B VENT FLOW CONT,
- OR**
- 3-FIC-84-20, PATH A VENT FLOW CONT.

NOTE: Unless the TSC recommends otherwise, venting the Drywell DIRECTLY should be performed ONLY if the Suppression Chamber can NOT be vented.

6. IF ANY of the following exists:

- Suppression Pool water level can not be determined to be below 20 ft,
- OR**
- Suppression Chamber can NOT be vented,
- OR**
- SRO orders DIRECT drywell venting,

THEN **CONTINUE** in this procedure at:

- Step 10 to vent the Drywell through 3-FCV-84-19,
- OR**
- Step 11 to vent the Drywell through 3-FCV-84-20.

Standard:

Verifies Suppression Pool Level below 20 feet and proceeds to step 7

SAT\_\_\_ UNSAT\_\_\_ N/A\_\_\_COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 7:

Critical Not Critical X

7. **CONTINUE** in this procedure at:

- Step 8 to vent the Suppression Chamber through 3-FCV-84-19,
- OR**
- Step 9 to vent the Suppression Chamber through 3-FCV-84-20.

Standard:

Continues at Step 8 or 9

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**NRC:** Candidate will start at step 9, which starts below at performance step 8. Securing the vent path will occur in accordance with EOI Appendix step 4 starts at performance step 16. Aligning the second vent path commences at performance step 21.

**Below is the first Vent path that will be established through 84-20**

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

9. **VENT** the Suppression Chamber using 3-FIC-84-20, PATH A VENT FLOW CONT, as follows:

- a. **VERIFY OPEN** 3-FCV-64-141, DRYWELL DP COMP BYPASS VALVE (Panel 3-9-3).

Standard:

Opens 3-FCV-64-141

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 9:

Critical ☒ Not Critical

- b. **PLACE** keylock switch 3-HS-84-36, SUPPR CHBR/DW VENT ISOL BYP SELECT, to SUPPR-CHBR position (Panel 3-9-54).

Standard:

Places 3-HS-84-36 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 10:

Critical Not Critical ☒

- c. **VERIFY OPEN** 3-FCV-64-34, SUPPR CHBR INBD ISOL VALVE (Panel 3-9-54).

Standard:

Verifies 3-FCV-64-34 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 11:

Critical Not Critical ☒

- d. **VERIFY** 3-FIC-84-20, PATH A VENT FLOW CONT, in AUTO with setpoint at 100 scfm (Panel 3-9-55).

Standard:

Verifies 3-FIC-84-20 Path A Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 12:

Critical ☒ Not Critical

- e. **PLACE** keylock switch 3-HS-84-20, 3-FCV-84-20 ISOLATION BYPASS, in BYPASS (Panel 3-9-55).

Standard:

Places 3-HS-84-20 in Bypass.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 13:

Critical ☒ Not Critical

- f. **VERIFY** 3-FIC-84-20, PATH A VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 14:

Critical ☒ Not Critical

- g. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**Driver: Just prior to the operator adjusting Vent Path flow or at the direction of the NRC fail the first vent path valve closed 84-20.**

\*\*\*\*\*

Performance Step 15:

Critical X Not Critical

12. **ADJUST** 3-FIC-84-20, PATH A VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,

**AND**

- 3-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,

**AND**

- Release rates as determined below:

- IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
- IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
- IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
  - Stack release rate of  $1.4 \times 10^7 \mu\text{Ci/s}$

**AND**

- 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Operator notices unstable flow and 3-PA-84-21 alarm light illuminated. Operator will begin to adjust the controller for the Vent Path that is aligned to stabilize flow AND to maintain 3-PA-84-21, alarm light extinguished. Just as the applicant is adjusting the vent valve for the Vent Path that was initially established the valve will fail closed. The operator will proceed to step 13 to secure the vent path alignment.

SAT\_\_ UNSAT\_\_ N/A\_\_ COMMENTS: \_\_\_\_\_

**NOTE: Below is the start of securing the vent path**

\*\*\*\*\*

Performance Step 16:

\*Critical X Not Critical

13. WHEN ANY of the following exists:

- Venting is no longer required,
- Pressure in the space being vented approaches zero,
- Directed by SRO,

**OR**

- Directed by Step 3, 4, or 5,

THEN **SECURE** venting as follows:

a. **VERIFY** the following keylock switches in OFF (Panel 3-9-54):

- 3-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP SELECT,
- \*• 3-HS-84-36, SUPPR CHBR / DW VENT ISOL BYP SELECT.

Standard:

Step 4 directs securing venting if the desired path is lost, and to secure in accordance with step 13 and to re-enter this procedure if further venting is required. Operator verifies 3-HS-84-35 in OFF and Places \*3-HS-84-36 in OFF.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 17:

Critical X Not Critical

b. **VERIFY** keylock switch 3-HS-84-20, 3-FCV-84-20 ISOLATION BYPASS, in NORMAL (Panel 3-9-55).

Standard:

Places 3-HS-84-20 in Normal

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 18:

Critical Not Critical X

- c. **VERIFY** keylock switch 3-HS-84-19, 3-FCV-84-19 CONTROL, in CLOSE (Panel 3-9-55).

Standard:

Verifies 3-HS-84-19 in Close

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 19:

Critical Not Critical X

- d. **VERIFY CLOSED** the following valves (Panel 3-9-3 or Panel 3-9-54):

- 3-FCV-64-31, DRYWELL INBD ISOLATION VLV,
- 3-FCV-64-29, DRYWELL VENT INBD ISOL VALVE,
- 3-FCV-64-34, SUPPR CHBR INBD ISOLATION VLV,
- 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE.

Standard:

Verifies closed the above listed valves

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 20:

Critical ☒ Not Critical

- e. **VERIFY CLOSED** 3-FCV-64-141, DRYWELL DP COMP BYPASS VALVE  
(Panel 3-9-3).

Standard:

Places 3-FCV-64-141 in Close

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**NOTE: Below is the start of the second vent path or the 84-19 Vent Path**

\*\*\*\*\*

Performance Step 21:

Critical ☒ Not Critical

8. **VENT** the Suppression Chamber using 3-FIC-84-19, PATH B VENT FLOW CONT, as follows:

- a. **PLACE** keylock switch 3-HS-84-35, SUPPR CHBR / DW VENT ISOL BYP  
SELECT, to SUPPR-CHBR position (Panel 3-9-54).

Standard:

Places 3-HS-84-35 in the SUPPR-CHBR position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_



\*\*\*\*\*

Performance Step 22:

Critical Not Critical X

- b. **VERIFY OPEN** 3-FCV-64-32, SUPPR CHBR VENT INBD ISOL VALVE  
(Panel 3-9-54).

Standard:

Verifies 3-FCV-64-32 Open

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 23:

Critical X Not Critical

- c. **PLACE** 3-FIC-84-19, PATH B VENT FLOW CONT, in AUTO with setpoint at  
100 scfm (Panel 3-9-55).

Standard:

Places 3-FIC-84-19 Path B Vent Flow Controller in Auto with setpoint set at 100 scfm

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 24:

Critical X Not Critical

- d. **PLACE** keylock switch 3-HS-84-19, 3-FCV-84-19 CONTROL, in OPEN (Panel  
3-9-55).

Standard:

Places 3-HS-84-19 in Open.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\*\*\*\*\*

Performance Step 25:

Critical ☒ Not Critical

- e. **VERIFY** 3-FIC-84-19, PATH B VENT FLOW CONT, is indicating approximately 100 scfm.

Standard:

Verifies Vent flow, operator notices flow is extremely erratic.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 26:

Critical ☒ Not Critical

- f. **CONTINUE** in this procedure at step 12.

Standard:

Operator continues at step 12.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

\*\*\*\*\*

Performance Step 27:

Critical X Not Critical

12. **ADJUST** 3-FIC-84-19, PATH B VENT FLOW CONT, as applicable, to maintain ALL of the following:

- Stable flow as indicated on controller,  
**AND**
- 3-PA-84-21, VENT PRESS TO SGT HIGH, alarm light extinguished,  
**AND**
- Release rates as determined below:
  - i. IF PRIMARY CONTAINMENT FLOODING per C-1, Alternate Level Control, is in progress, THEN **MAINTAIN** release rates below those specified in Attachment 2.
  - ii. IF Severe Accident Management Guidelines are being executed, THEN **MAINTAIN** release rates below those specified by the TSC SAM Team.
  - iii. IF Venting for ANY other reason than items i or ii above, THEN **MAINTAIN** release rates below
    - Stack release rate of  $1.4 \times 10^7 \mu\text{Ci/s}$   
**AND**
    - 0-SI-4.8.B.1.a.1 release fraction of 1.

Standard:

Adjusts the controller for the Vent Path that is aligned to stabilize flow AND to maintain 3-PA-84-21, alarm light extinguished.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**CUE:** Primary Containment Flooding and SAMG are not being executed

**STOP TIME** \_\_\_\_\_

END OF TASK

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: h- **ALTERNATE PATH**

TASK NUMBER: S-000-NO-054

TASK TITLE: USST 1B Transformer Tap Changer Auto Checks

K/A NUMBER: 262001 A4.05 K/A RATING RO 3.3 SRO 3.3

TASK STANDARD: Completes Auto Checks of USST 1B Tap Changer

LOCATION OF PERFORMANCE: Simulator

REFERENCES/PROCEDURES NEEDED: 0-GOI-300-4

VALIDATION TIME: 10 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

*Rec'd  
5/22/1*

**INITIAL CONDITIONS:** You are a Unit Operator.

**INITIATING CUE:** The Unit Supervisor directs you to perform USST 1B Transformer Tap Changer (LTC) Auto checks, in accordance with 0-GOI-300-4, Switchyard Manual section 6.7.2.

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are a Unit Operator.

**INITIATING CUE:** The Unit Supervisor directs you to perform USST 1B Transformer Tap Changer (LTC) Auto checks, in accordance with 0-GOI-300-4, Switchyard Manual section 6.7.2.

## START TIME

\*\*\*\*\*

Performance Step 1:

Critical X Not Critical

### NOTES

- 1) Red light 1-IL-243-1BA above the raise/lower control switch 1-HS-243-1BA is illuminated only when tap changer position is being changed.
- 2) Section 6.7.2 is performed on Panel 0-9-23-3.
- 3) Sections 6.7.2, 6.7.3, and 6.7.4 may be performed in any order.
- 4) Place LTC Control Switch 1-HS-243-1BA to the LEFT to RAISE and RIGHT to LOWER LTC position.
- 5) Tap Changer position is read from 1-ZI-243-1B USST 1B TAP CHANGER POSITION

### 6.7.2 USST 1B Transformer Tap Changer (LTC) "Auto" Checks

- [1] **PLACE** load tap changer control selector switch 1-HS-243-1BC, USST 1B LTC CONTROL SEL in MANUAL.

#### Standard:

Places 1-HS-243-1BC in Manual

SAT\_\_ UNSAT\_\_ N/A\_\_ COMMENTS:\_\_\_\_\_

**Simulator Driver:** GO TO Plant Systems Index – PSI – ED and Simulation Diagram when the applicant has placed 1-HS-243-1BC in MANUAL select “FAIL AS IS”  
Ensure failure remains in MANUAL

\*\*\*\*\*

Performance Step 2:

Critical X Not Critical

- [2] **PLACE** 1-HS-243-1BA USST 1B LTC CONTROL to the RAISE position and raise the tap changer one tap and **OBSERVE** the resultant voltage.

Standard:

Places 1-HS-243-1BA to raise (turns to the left) raises the tap changer one tap.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---

\*\*\*\*\*

Performance Step 3:

Critical X Not Critical

- [3] **IF** the voltage is less than 4275, **THEN RAISE** the tap changer one more tap as per step 6.7.2[2].

Standard:

Checks voltage and determines voltage is less than 4275 and places 1-HS-243-1BA to raise (turns to the left) raises the tap changer one more tap.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

---



\*\*\*\*\*

Performance Step 4:

Critical ☐ Not Critical ☒

**NOTES**

- 1) The tap changer will probably return a full two taps to its original position, but a one-tap return is acceptable.
- 2) The tap changer may return to its original position and overshoot one tap or overshoot one tap and return to its original position. This is acceptable if the resulting voltage is acceptable.
- [4] **PLACE** 1-HS-243-1BC USST 1B LTC CONTROL SEL in AUTO and **CHECK** the tap changer returns at least one tap in the direction of its original position.

Standard:

Places 1-HS-243-1BC to Auto, and checks the TAP changer, determines that the TAP changer failed to change. Determines step 5 is required.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Simulator Driver:**

When the applicant places 1-HS-243-1BC to back to MANUAL in the next step. Delete the override FAIL AS IS on the handswitch.

\*\*\*\*\*

Performance Step 5:

Critical ☒ Not Critical

[5] **IF** the tap changer does not automatically at least one tap in the direction of its original position, **THEN PERFORM** the following: (Otherwise N/A)

[5.1] **PLACE** 1-HS-243-1BC USST 1B LTC CONTROL SEL in MANUAL.

Standard:

Places 1-HS-243-1BC to Manual

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 6:

Critical ☒ Not Critical

[5.2] **PLACE** 1-HS-243-1BA USST 1B LTC CONTROL to the RAISE position and **RAISE** the tap changer a maximum of one more tap unless the voltage is already over 4,300V.

Standard:

Determines voltage is less than 4300 volts, and places 1-HS-243-1BA to raise (turns to the left) raises the tap changer one tap.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

**EXAMINER NOTE:** If for any reason the Applicant raises the TAP 4 times Overvoltage alarms on Panel 0-9-23-7 for 4160V SD BD A and B will alarm. If these overvoltage alarms are received due to raising the TAP to many times this would be a failure.

\*\*\*\*\*

Performance Step 7:

Critical X Not Critical

- [5.3] **PLACE** 1-HS-243-1BC USST 1B LTC CONTROL SEL in AUTO and **CHECK** the tap changer returns at least one tap in the direction of its original position.

Standard:

Places 1-HS-243-1BC to Auto and checks the TAP changer returns at least one TAP in the direction of its original position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

END OF TASK

**STOP TIME**

OPERATOR: \_\_\_\_\_

RO \_\_\_\_ SRO \_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: i

TASK NUMBER: A-082-NO-09

TASK TITLE: Emergency Shutdown at Diesel Engine

K/A NUMBER: 264000 K4.07 K/A RATING: RO 3.3 SRO 3.4

TASK STANDARD: Shutdown at Diesel Engine Control Cabinet and emergency shutdown at Diesel Engine.

LOCATION OF PERFORMANCE: Plant

REFERENCES/PROCEDURES NEEDED: 3-OI-82

VALIDATION TIME: 15 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_ NO \_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_ UNSATISFACTORY \_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:**

You are an Auxiliary Unit Operator.

- Diesel Generator 3D Lube Oil Abnormal Alarm is in on panel 3-9-23D.
- Low Low Lube Oil pressure light is illuminated.
- 3D Diesel Generator failed to shutdown from panel 3-9-23.

**INITIATING CUES:**

The Unit Supervisor directs you to perform emergency shutdown at the 3D Diesel Engine.

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

\*\*\*\*\*

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

\*\*\*\*\*

#### **INITIAL CONDITIONS:**

You are an Auxiliary Unit Operator.

- Diesel Generator 3D Lube Oil Abnormal Alarm is in on panel 3-9-23D.
- Low Low Lube Oil pressure light is illuminated.
- 3D Diesel Generator failed to shutdown from panel 3-9-23.

#### **INITIATING CUES:**

The Unit Supervisor directs you to perform emergency shutdown at the 3D Diesel Engine.

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

START TIME\_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical ☒ Not Critical

### 7.5 Emergency Shutdown at Diesel Engine

#### CAUTION

If diesel engine speed rises to greater than 1035 RPM, the Diesel Generator room should be evacuated immediately due to the potential for personnel injury.

#### NOTES

- 1) This section should only be performed during an emergency condition which requires the Diesel Generator to be stopped immediately. The Diesel Generator will be made inoperable as a result of performing this section. REFER TO Technical Specification 3.8.1 and 3.8.2, Operation With Inoperable Equipment.
- 2) When time permits, all manipulations of the Diesel Generator Logic Breaker are required to be logged in the Narrative Log.
- [1] **PULL and HOLD** the Injector Control Lever in the No Fuel position until the diesel engine comes to a complete stop.

Standard:

Simulates pulling out and holding the Injector Control Lever in the No Fuel position.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

CUE: The Sound of the Diesel Engine remains unchanged.

\*\*\*\*\*

Performance Step 2:

Critical X Not Critical

[2] IF the diesel engine does **NOT** stop, **THEN PERFORM** the following:

- [2.1] **PLACE** 3-BKR-254-000D/06, DSL GEN 3D LOGIC RELAY PANEL (LOGIC BREAKER), in OFF on 3-BDGG-254-0003D, 125 VDC DSL SYS BAT BOARD D.

Standard:

Simulates placing 3-BKR-254-000D/06 in OFF

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE:** 3-BKR-254-000D/06 is in OFF.

\*\*\*\*\*

Performance Step 3:

Critical X Not Critical

- [2.2] **DEPRESS both** ENGINE STOP push-buttons simultaneously on the Engine Control Cabinet to initiate the shutdown sequence (this will also stop the Priming Fuel Pump).

Standard:

Simulates depressing both engine stop push buttons.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**CUE:** Engine Stop push buttons depressed, The Sound of the Diesel Engine remains unchanged.



\*\*\*\*\*

Performance Step 4:

Critical X Not Critical

[2.3] **CLOSE** ENGINE DRIVEN FUEL PMP SUCT, 0-SHV-18-0664-3D.

Standard:

Simulates closing 0-SHV-18-0664-3D, by rotating handwheel in close direction.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

CUE: When operator simulates closing 0-SHV-18-0664-3D valve is closed and Engine Sound is lowering.

\*\*\*\*\*

Performance Step 5:

Critical X Not Critical

[2.4] **PLACE** both DG 3D START CIRCUIT 1 CONT POWER BKR,  
3-BKR-082-003D 35W1 and DG 3D START CIRCUIT 2 CONT POWER BKR,  
3-BKR-082-003D 35W2 in the OFF position at the Electrical Control Cabinet.

Standard:

Simulates placing 3-BKR-082-003D 35W1 and 3-BKR-082-003D 35W2 in off.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

CUE: 3-BKR-082-003D 35W1 is in off and 3-BKR-082-003D 35W2 is in off.

END OF TASK

STOP TIME \_\_\_\_

JPM j

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: j

TASK NUMBER: U-57C-AB-06

TASK TITLE: Manual Operation of 3-FCV-85-11A, using 3-PCV-85-11

K/A NUMBER: 201001 A2.03 K/A RATING: RO 3.0 SRO 3.1

TASK STANDARD: Perform field actions to manually operate 3-FCV-85-11A using 3-PCV-85-11 due to a loss of Unit Preferred 120VAC.

LOCATION OF PERFORMANCE: Plant – Reactor Building 565

REFERENCES/PROCEDURES NEEDED: 3-AOI-57-4 and 3-OI-85

VALIDATION TIME: 15 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

**INITIAL CONDITIONS:** You are Auxiliary Unit Operator. Unit 3 has entered 3-AOI-57-4, Loss of Unit Preferred. CRD seal temperatures have risen to the alarm setpoint and the Unit Preferred system will not be restored within one hour. Precautions and Limitations have been reviewed.

**INITIATING CUE:** The Unit Supervisor directs you to perform subsequent action [4] [4.2] of 3-AOI-57-4 and manually open 3-FCV-85-11A.

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

\*\*\*\*\*

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

\*\*\*\*\*

**INITIAL CONDITIONS:** You are Auxiliary Unit Operator. Unit 3 has entered 3-AOI-57-4, Loss of Unit Preferred. CRD seal temperatures have risen to the alarm setpoint and the Unit Preferred system will not be restored within one hour. Precautions and Limitations have been reviewed.

**INITIATING CUE:** The Unit Supervisor directs you to perform subsequent action [4] [4.2] of 3-AOI-57-4 and manually open 3-FCV-85-11A.

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

START TIME \_\_\_\_\_

\*\*\*\*\*

Performance Step 1:Critical ☒ Not Critical**3-AOI-57-4 Loss of Unit Preferred****NOTE**

CRD Flow Control Valve 3-FCV-85-11(A/B) closes on a loss of power to Unit Preferred or Unit Non-preferred resulting in a loss of normal cooling water flow to CRD seals. CRD temperatures should be monitored and operation with 3-FCV-85-11(A/B) closed limited to less than 1 hour. If necessary, 3-FCV-85-11(A/B) can be manually opened. **REFER TO 3-OI-85.**

[4] **PERFORM** the following for the CRD system:

[4.2] **IF** CRD seal temperatures rise to the alarm setpoint, **OR** the Unit Preferred system cannot be restored within one hour, **THEN DISPATCH** personnel to manually OPEN 3-FCV-85-11(A/B). **REFER TO 3-OI-85.**

Standard:

Operator obtains 3-OI-85 section 8.24

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When operator determines that 3-OI-85 section 8.24 is the procedure that is required provide operator with a copy.

\*\*\*\*\*

Performance Step 2:Critical Not Critical X**8.24 Manual Operation of 3-FCV-85-11A(B) Using 3-PCV-85-11**

- [1] **VERIFY** manual operation of 3-FCV-85-11A is required due to loss of unit preferred 120 VAC, malfunction of 3-FIC-85-11, or maintenance.
- [2] **REVIEW** Precautions and Limitations Section 3.6.

Standard:

Verifies manual operation is required and reviews Precautions and Limitations Section 3.6

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\*\*\*\*\*

Performance Step 3:Critical X Not Critical

- [3] **PERFORM** the following for the Flow Control Valve being placed in manual using 3-PCV-85-11:

**NOTE**

- 1) All steps are performed locally, El. 565 NE RX Bldg.
- 2) Erratic operation of CRD SYSTEM FLOW CONTROL, 3-FIC-85-11, may be observed during refueling/shutdown operations when larger  $\Delta$ P exists due to low reactor pressure and CRD pressure.

[3.1] **VERIFY OPEN** FCV-85-11A INLET SOV, 3-SHV-085-0563.Standard:

Operator simulates opening 3-SHV-085-0563

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** FCV -85-11A Inlet SOV, 3-SHV-085-0563 is AS Found or Closed, when operator simulates opening 3-SHV-085-0563, the valve is OPEN

JPM j

\*\*\*\*\*

Performance Step 4:

Critical X Not Critical

[3.2] **VERIFY OPEN** FCV-85-11A OUTLET SOV, 3-SHV-085-0564.

Standard:

Operator simulates opening 3-SHV-085-0564

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** FCV -85-11B Outlet SOV, 3-SHV-085-0564 is As Found or CLOSED, when operator simulates opening 3-SHV-085-0564, the valve is OPEN

\*\*\*\*\*

Performance Step 5:

Critical Not Critical X

[3.3] **CHECK OPEN** PCV-85-11 SOV, 3-SHV-085-0247.

Standard:

Operator simulates turning handwheel clockwise ¼ turn and then counter clockwise.

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated checking open 3-SHV-085-0247, valve is open

\*\*\*\*\*

Performance Step 6:Critical X Not Critical

- [3.4] **IF** 3-FCV-85-11A is being transferred from auto to manual mode of operation with no system flow, **THEN**

**ADJUST** 3-PCV-85-11 as required to obtain an air pressure of  $\leq 3$  psig, as indicated on 3-PI-85-92, to ensure that 3-FCV-85-11A is closed initially when air is aligned for manual positioning.

Standard:

Simulates adjusting 3-PCV-85-11 to obtain less than 3 psig on 3-PI-85-92

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** Air Pressure is AS Found or 9 psig on 3-PI-85-92, as operator adjusts 3-PCV-85-11 air pressure lowers to less than 3 psig

\*\*\*\*\*

Performance Step 7:Critical Not Critical X

- [3.5] **IF** 3-FCV-85-11A is being transferred from auto to manual mode of operation with system flow already established, **THEN**

**ADJUST** 3-PCV-85-11 to obtain a reading on 3-PI-85-92 that is equal to the pressure indicated on PRESS INDICATOR FOR PIC-85-11B, 3-PI-85-507.

Standard:

Step is NA, 3-FCV-85-11A is being transferred with NO system flow

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_



JPM j

\*\*\*\*\*

Performance Step 8:

Critical X Not Critical

**NOTE**

The performance of the following step will bypass 3-FM-85-11A(B) and align air for manual positioning of 3-FCV-85-11A(B).

- [3.6] **PLACE** FCV-85-11A THREE WAY ISOL 3-SHV-085-0251 valve handle in HORIZONTAL position to bypass 3-FIC-85-11A and align air to positioner on 3-FCV-85-11A.

Standard:

Simulates placing 3-SHV-085-0251 valve handle to horizontal position

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** When simulated 3-SHV-085-0251 valve handle is horizontal

\*\*\*\*\*

Performance Step 9:

Critical X Not Critical

- [3.7] **SLOWLY ADJUST** 3-PCV-85-11 to set 3-FCV-85-11A to desired position.

Standard:

Simulates adjusting 3-PCV-85-11 to obtain desired position, may adjust to a control room MARK or may return air pressure to 9 psig the initial reading on 3-PI-85-92

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** When simulated adjusting 3-PCV-85-11, operator will return air pressure to the pressure before of 9 psig or will coordinate with control room to raise air pressure. Air pressure is rising and / or if communicating with control room CRD parameters are approaching normal and eventually CRD Parameters are restored.

**STOP TIME** \_\_\_\_\_

END OF TASK

JPM k

OPERATOR: \_\_\_\_\_

RO \_\_\_\_\_ SRO \_\_\_\_\_ DATE: \_\_\_\_\_

JPM NUMBER: k

TASK NUMBER: U-000-EM-37

TASK TITLE: Alternate RPV Injection Standby Liquid Control System

K/A NUMBER: 295031 EA1.08 K/A RATING: RO 3.8 SRO 3.9

TASK STANDARD: Perform field actions to Line Up for Injection with SLC.

LOCATION OF PERFORMANCE: Plant – Unit 3 Reactor Building

REFERENCES/PROCEDURES NEEDED: 3-EOI Appendix-7B

VALIDATION TIME: 20 minutes

PERFORMANCE TIME:

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Additional comment sheets attached? YES \_\_\_\_\_ NO \_\_\_\_\_

RESULTS: SATISFACTORY \_\_\_\_\_ UNSATISFACTORY \_\_\_\_\_

SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_  
EXAMINER

Rec'd  
5/22/1

**INITIAL CONDITIONS:**

You are an AUO. 3-EOI-C-1, Alternate Level Control, is being implemented on Unit 3. Alternate RPV injection via the SLC Boron Tank was in progress in accordance with 3-EOI-Appendix-7B. The SLC Boron Tank level has lowered to 0% and the SLC Pumps have been stopped at Step 13.

**INITIATING CUE:**

You have been directed to perform 3-EOI-Appendix-7B, beginning at Step 14, to lineup the SLC Test Tank for injection to the RPV.

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

\*\*\*\*\*

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

\*\*\*\*\*

#### **INITIAL CONDITIONS:**

You are an AUO. 3-EOI-C-1, Alternate Level Control, is being implemented on Unit 3. Alternate RPV injection via the SLC Boron Tank was in progress in accordance with 3-EOI-Appendix-7B. The SLC Boron Tank level has lowered to 0% and the SLC Pumps have been stopped at Step 13.

#### **INITIATING CUE:**

You have been directed to perform 3-EOI-Appendix-7B, beginning at Step 14, to lineup the SLC Test Tank for injection to the RPV.

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

JPM k

**START TIME**\_\_\_\_\_

\*\*\*\*\*

Performance Step 1:

Critical X Not Critical

14. **DISPATCH** personnel to Unit 3 SLC pump area to line up SLC Test Tank and isolate SLC Boron Tank as follows (RB NE, El 639 ft):

- a. **REFER** TO Attachment 1 and **OBTAIN** 25-ft section of 3/4 in. rubber hose from EOI Equipment Storage Cabinet (RB, El 621 ft, elevator area).

Standard:

Simulates obtaining 25 feet of 3/4 inch rubber hose from EOI Equipment Box

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** When box is located and simulated you have the hose

\*\*\*\*\*

Performance Step 2:

Critical X Not Critical

- b. **CONNECT** hose to 3-SHV-002-1292, DEMIN WTR SERVICE CONN (wall near SLC pumps), and **ROUTE** into top of SLC Test Tank.

Standard:

Simulates connecting the hose to 3-SHV-002-1292 and routes into top of SLC Test Tank

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** When simulated hose is connected to 3-SHV-002-1292 and routed into top of SLC Test Tank

\*\*\*\*\*

Performance Step 3:Critical ☒ Not Critical

- c. **VERIFY OPEN** 3-SHV-002-1293, SLC DEMIN WTR SPLY VLV (on wall next to SLC pumps).

Standard:

Simulates turning valve handwheel to the left 3-SHV-002-1293, Opens valve

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated valve handwheel rotates, 3-SHV-002-1293 is Open

\*\*\*\*\*

Performance Step 4:Critical ☒ Not Critical

- d. **UNLOCK** and **OPEN** the following valves:

- 1) 3-SHV-063-0502, SLC SYSTEM SUCTION DEMIN WATER SHUTOFF VALVE.
- 2) 3-SHV-063-0509, 3A SLC PUMP SUCTION DEMIN WATER SHUTOFF VALVE.
- 3) 3-SHV-063-0511, 3B SLC PUMP SUCTION DEMIN WATER SHUTOFF VALVE.

Standard:

Simulates unlocking and rotating handwheel to the left and opening valves  
3-SHV-063-0502, 3-SHV-063-0509, and 3-SHV-063-0511

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated valve is unlocked and handwheel rotating, 3-SHV-063-0502,  
3-SHV-063-0509, and 3-SHV-063-0511 are open

\*\*\*\*\*

Performance Step 5:

Critical X Not Critical

- e. **OPEN** 3-SHV-063-0532, SLC TEST TANK DEMIN WATER SHUTOFF VALVE.

Standard:

Simulates rotating handwheel to the left and opens valve 3-SHV-063-0532

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated valve handwheel rotating, 3-SHV-063-0532 is open

\*\*\*\*\*

Performance Step 6:

Critical X Not Critical

- f. **OPEN** 3-SHV-063-0014, SLC TEST TANK SHUTOFF VALVE.

Standard:

Simulates rotating handwheel to the left and opens valve 3-SHV-063-0014

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated valve handwheel rotating, 3-SHV-063-0014 is open

JPM k

\*\*\*\*\*

Performance Step 7:

Critical X Not Critical

g. **OPEN** 3-SHV-002-1292, DEMIN WTR SERVICE CONN.

Standard:

Simulates rotating handwheel to the left and opens valve 3-SHV-002-1292

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** When simulated valve handwheel rotating, 3-SHV-002-1292 is open. Test Tank water level is rising

\*\*\*\*\*

Performance Step 8:

Critical \_ Not Critical X

h. **THROTTLE** 3-SHV-002-1292, DEMIN WTR SERVICE CONN, as necessary to maintain Test Tank level.

Standard:

Step is NA until Test Tank is full, Operator may simulate lowering flow

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS:\_\_\_\_\_

**Cue:** If operator simulates lowering flow, valve is positioned Test Tank water level rising.



JPM k

\*\*\*\*\*

Performance Step 9:

Critical X Not Critical

i. **UNLOCK** and **CLOSE** 3-SHV-063-0500, SLC STORAGE TANK OUTLET SHUTOFF VALVE.

Standard:

Simulates Unlocking and then rotating handwheel to the right and closes valve 3-SHV-063-0500

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** When simulated valve handwheel is unlocked and rotating, 3-SHV-063-0500 is closed.

\*\*\*\*\*

Performance Step 10:

Critical \_ Not Critical X

j. **NOTIFY** Unit Operator that SLC pumps have been aligned to the test tank.

Standard:

Notifies Unit Operator that SLC Pumps have been aligned to test tank

SAT\_\_ UNSAT\_\_ N/A \_\_ COMMENTS: \_\_\_\_\_

**Cue:** Acknowledge notification

**STOP TIME** \_\_\_\_\_

END OF TASK