

JOB PERFORMANCE MEASURE SETUP SHEET

System: C71 – Reactor Protection System
 Time Critical: No
 Alternate Path: Yes
 Setting: Simulator
 Applicability: RO/SRO
 Safety Function: 1 – Reactivity Control
 Validated: 19 minutes
 References: SVI-C71-T0051 Rev 12 & ARI-H13-P680-0005 Rev 16
 Tasks: 212-531-02-01 Perform RPS Manual Scram Channel Functional Test
 212-502-01-01 Perform Manual Scram
 Task Standard: Perform RPS Manual Scram Functional Surveillance and respond to rod drift problem.
 Required Material: SVI-C71-T0051, Reactor Protection System Manual Scram Channel Functional
 K / A Data: 295006, SCRAM: AA1.01- Ability to operate and/or monitor the following as they apply to SCRAM: RPS. Importance RO 4.2 / SRO 4.2
 212000, Reactor Protection System: A4 - Ability to manually operate and/or monitor in the control room: A4.02 Perform system functional test(s). Importance RO 3.6 / SRO 3.7; A4.01 - Provide manual SCRAM signal(s). Importance RO 4.6 / SRO 4.6; A4.11 - Scram air header pressure. Importance RO 3.7 / SRO 3.7

1. Simulator Setup Instructions: Reset simulator to full power IC Exam and perform the following:
For 2019 ILO Exam, Reset Simulator to IC-58. Close P52-F200 then load Schedule File JPM-C71-501. Verify Event File JPM-C71-501 loads.
2. Location / Method: Simulator / performance
3. Initial Condition: Plant conditions are as is. An operator is stationed at the back panels to assist you.
4. Initiating Cue: Unit Supervisor directs you as the BOP Reactor Operator to perform SVI-C71-T0051 Reactor Protection System Manual Scram Channel Functional. Prereqs have been completed. Pre-job brief has been completed.

Start Time _____ End Time _____

Operator _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SVI-C71-T0051- Reactor Protection System Manual Scram Channel Functional****5.1 Surveillance Test**

1. Print Lead Test Performers name on Attachment 2.
2. OBTAIN the Reactor Operator's "Test Start Approval" signature on the Test Cover Sheet/Surveillance Order.
3. Detach Attachment 2 and give to RO.

Standard: Operator performs Section 5.1 Steps 1 → 3.

Instructor Cue: If asked, thermography checks on solenoid valves has been completed.

Notes: Sign Test Cover Sheet for 'Test Start Approval'.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

5.1.1 Manual Scram Switch Ch A

1. Confirm the following:
 - a. Annunciator 1/2 SCRAM A/C (P680 05A A9) reset.
 - b. Annunciator RPS MANUAL SCRAM (P680 05A B10) reset.
 - c. Annunciator MAN SCRAM SW ARMED (P680 05A C10) reset.
 - d. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A, AND GP4A [P680 11E1 (L & R)] on.
 - e. RPS CH B&D SCRAM SOL VALVES indicating lights GP1B, GP2B, GP3B, AND GP4B [P680 11E1 (L & R)] on.
 - f. Indicating light RPS LOGIC A ENERGIZED (P691) on.

Standard: Operator confirms annunciators are reset and scram solenoid valve indicating lights are on.

Instructor Cue: When Operator inquires about the RPS LOGIC A ENERGIZED light on P691, respond that it is ON.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

2. Place RPS MANUAL SCRAM CH A switch 1C71A S3A (P680 11E1) collar to ARMED position.

Critical Step: Operator places RPS MANUAL SCRAM CH A switch collar to ARMED position.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

3. Confirm annunciator MAN SCRAM SW ARMED (P680 05A C10) on.
4. Be notified the following step will result in RPS Channel A Half Scram.

Standard: Operator confirms annunciator alarms.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

5. Depress and hold RPS MANUAL SCRAM CH A pushbutton 1C71A S3A.
6. Confirm Annunciator RPS MANUAL SCRAM (P680 05A B10) on.
7. Release RPS MANUAL SCRAM CH A pushbutton 1C71A S3A.

Critical Step: Operator depresses RPS MANUAL SCRAM CH A pushbutton and confirms annunciator alarms, then releases the pushbutton.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 6

8. Confirm the following:
 - a. Annunciator 1/2 SCRAM A/C (P680 05A A9) on.
 - b. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A AND GP4A [P680 11E1 (L & R)] off.
 - c. Integrated Computer System (ICS) point C71EC001 CHANNEL SCRAM A STATUS indicates SCRAM.
 - d. Indicating light RPS LOGIC A ENERGIZED (P691) off.
9. IF RCIS is functional AND RCIS Display SCRAM VALVES is backlit red, THEN perform the following:

Standard: Operator confirms the above for Step 8.

Step 9 is N/A.

Instructor Cue: When Operator inquires about the RPS LOGIC A ENERGIZED light on P691, respond that it is OFF.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 7

10. Press SCRAM RESET CH A RESET switch 1C71A S5A.

Critical Step: Operator presses CH A Reset pushbutton.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 8

11. Confirm the following:
- a. Annunciator 1/2 SCRAM A/C (P680 05A A9) reset.
 - b. Annunciator RPS MANUAL SCRAM (P680 05A B10) reset.
 - c. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A, AND GP4A [P680 11E1 (L & R)] on.
 - d. RPS CH B&D SCRAM SOL VALVES indicating lights GP1B, GP2B, GP3B, AND GP4B [P680 11E1 (L & R)] on.
 - e. Indicating light RPS LOGIC A ENERGIZED (P691) on.
 - f. ICS point C71EC001 CHANNEL SCRAM A STATUS indicates NORMAL.

Standard: Operator confirms annunciators are reset and scram solenoid valve indicating lights are on.

Instructor Cue: When Operator inquires about the RPS LOGIC A ENERGIZED light on P691, respond that it is ON.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 9

12. Place RPS MANUAL SCRAM CH A switch 1C71A S3A collar to DISARM position.
13. Confirm annunciator MAN SCRAM SW ARMED (P680 05A C10) reset.

Standard: Operator places Scram switch collar to DISARM and confirms annunciator is reset.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 10

5.1.2 Manual Scram Switch Ch C

1. Confirm the following:
 - a. Annunciator 1/2 SCRAM A/C (P680 05A A9) reset.
 - b. Annunciator RPS MANUAL SCRAM (P680 05A B10) reset.
 - c. Annunciator MAN SCRAM SW ARMED (P680 05A C10) reset.
 - d. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A, AND GP4A [P680 11E1 (L & R)] on.
 - e. RPS CH B&D SCRAM SOL VALVES indicating lights GP1B, GP2B, GP3B, AND GP4B [P680 11E1 (L & R)] on.
 - f. Indicating light RPS LOGIC C ENERGIZED (P693) on.

Standard: Operator confirms annunciators are reset and scram solenoid valve indicating lights are on.

Instructor Cue: When Operator inquires about the RPS LOGIC C ENERGIZED light on P693, respond that it is ON.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 11

2. Place RPS MANUAL SCRAM CH C switch 1C71A S3C (P680 11E1) collar to ARMED position.

Critical Step: Operator places RPS MANUAL SCRAM CH C switch collar to ARMED position.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 12

3. Confirm annunciator MAN SCRAM SW ARMED (P680 05A C10) on.
4. Be notified the following step will result in RPS Channel C Half Scram.

Standard: Operator confirms annunciator alarms.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 13

5. Depress and hold RPS MANUAL SCRAM CH C pushbutton 1C71A S3C.
6. Confirm Annunciator RPS MANUAL SCRAM (P680 05A B10) on.
7. Release RPS MANUAL SCRAM CH C pushbutton 1C71A S3C.

Critical Step: Operator depresses RPS MANUAL SCRAM CH C pushbutton and confirms annunciator alarms, then releases the pushbutton.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 14

8. Confirm the following:
- a. Annunciator 1/2 SCRAM A/C (P680 05A A9) on.
 - b. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A AND GP4A [P680 11E1 (L & R)] off.
 - c. Integrated Computer System (ICS) point C71EC003 CHANNEL SCRAM A STATUS indicates SCRAM.
 - d. Indicating light RPS LOGIC C ENERGIZED (P693) off.

Standard: Operator confirms the above for Step 8.

Instructor Cue: When Operator inquires about the RPS LOGIC C ENERGIZED light on P693, respond that it is OFF.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 15

9. Press SCRAM RESET CH C RESET switch 1C71A S5C.

Critical Step: Operator presses CH C Reset pushbutton.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 16

10. Confirm the following:
- a. Annunciator 1/2 SCRAM A/C (P680 05A A9) reset.
 - b. Annunciator RPS MANUAL SCRAM (P680 05A B10) reset.
 - c. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A, AND GP4A [P680 11E1 (L & R)] on.
 - d. RPS CH B&D SCRAM SOL VALVES indicating lights GP1B, GP2B, GP3B, AND GP4B [P680 11E1 (L & R)] on.
 - e. Indicating light RPS LOGIC C ENERGIZED (P693) on.
 - f. ICS point C71EC003 CHANNEL SCRAM C STATUS indicates NORMAL.

Standard: Operator confirms annunciators are reset and scram solenoid valve indicating lights are on.

Instructor Cue: When Operator inquires about the RPS LOGIC C ENERGIZED light on P693, respond that it is ON.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 17

11. Place RPS MANUAL SCRAM CH C switch 1C71A S3C collar to DISARM position.
12. Confirm annunciator MAN SCRAM SW ARMED (P680 05A C10) reset.

Standard: Operator places Scram switch collar to DISARM and confirms annunciator is reset.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 18

5.1.3 Manual Scram Switch Ch B

1. Confirm the following:
 - a. Annunciator 1/2 SCRAM B/D (P680 05A B9) reset.
 - b. Annunciator RPS MANUAL SCRAM (P680 05A B10) reset.
 - c. Annunciator MAN SCRAM SW ARMED (P680 05A C10) reset.
 - d. RPS CH A&C SCRAM SOL VALVES indicating lights GP1A, GP2A, GP3A, AND GP4A [P680 11E1 (L & R)] on.
 - e. RPS CH B&D SCRAM SOL VALVES indicating lights GP1B, GP2B, GP3B, AND GP4B [P680 11E1 (L & R)] on.
 - f. Indicating light RPS LOGIC B ENERGIZED (P692) on.

Standard: Operator confirms annunciators are reset and scram solenoid valve indicating lights are on.

Instructor Cue: When Operator inquires about the RPS LOGIC B ENERGIZED light on P692, respond that it is ON.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 19

2. Place RPS MANUAL SCRAM CH B switch 1C71A S3C (P680 11E1) collar to ARMED position.

Critical Step: Operator places RPS MANUAL SCRAM CH B switch collar to ARMED position.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 20

3. Confirm annunciator MAN SCRAM SW ARMED (P680 05A C10) on.
4. Be notified the following step will result in RPS Channel B Half Scram.

Standard: Operator confirms annunciator alarms.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 21

5. Depress and hold RPS MANUAL SCRAM CH B pushbutton 1C71A S3B.
6. Confirm Annunciator RPS MANUAL SCRAM (P680 05A B10) on.
7. Release RPS MANUAL SCRAM CH B pushbutton 1C71A S3B.

Critical Step: Operator depresses RPS MANUAL SCRAM CH B pushbutton and confirms annunciator alarms, then releases the pushbutton.

Instructor Cue: When Operator depresses the Scram pushbutton, multiple rods will scram in due to failure on RPS A side.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 22

Operator responds to unexpected ROD DRIFT and SCRAM VLV AIR HEADER PRESS LO alarms and recognizes more than 2 control rods drift in combination with a low scram air header pressure alarm.

ARI-H13-P680-0005-D10 – ROD DRIFT**3.0 IMMEDIATE OPERATOR ACTION**

- 3.1 DETERMINE which rod is drifting by DEPRESSING the ROD DRIFT pushbutton and observing the red LED on the Full Core Display.
- 3.2 DETERMINE if the rod is still moving (more than one notch).

ARI-H13-P680-0005-D6 – SCRAM VLV AIR HEADER PRESS LO**4.0 SUBSEQUENT OPERATOR ACTION****4.3 IF ANY one of the following conditions are met:**

- PRIOR TO Scram Pilot Air Hdr Press going less than 50 psig, C11EA015
- Two OR more additional control rod drifts are detected.
- The INST VOL NOT DRAINED (1H13-P680-0005, D7) alarm is received.

THEN PERFORM the following:

4.3.1 SCRAM the reactor.

Critical Step: Operator scrams the reactor.

Instructor Cue: None

Notes: When Mode Switch is in SHUTDOWN and control rods are inserted, terminate the JPM

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: RPS functional for channels A & C complete with Rx scrambled.

Evaluation Results: SAT ____ UNSAT ____

End Time _____

JPM CUE SHEET

<p>INITIAL CONDITIONS:</p>	<ul style="list-style-type: none">• Plant conditions are as is.• An operator is stationed at the back panels to assist you.
<p>INITIATING CUE:</p>	<ul style="list-style-type: none">• Unit Supervisor directs you as the BOP Reactor Operator to perform SVI-C71-T0051 Reactor Protection System Manual Scram Channel Functional.• Prereqs have been completed.

JOB PERFORMANCE MEASURE SETUP SHEET

System: E51, Reactor Core Isolation Cooling
Time Critical: No
Alternate Path: Yes
Setting: Simulator
Applicability: RO/SRO
Safety Function: 2 - Reactor Water Inventory Control
Validated: 10 minutes
References: SOI-E51 Rev. 35
Required Material: SOI-E51, Reactor Core Isolation Cooling System
Tasks: 217-565-04-01 Control RPV Level with RCIC Operating in the Injection Mode
Task Standard: Lineup RCIC to control RPV level per SOI-E51
K/A Data: 217000 K3.01 Knowledge of the effect that a loss or malfunction of the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) will have on following: Reactor water level. Importance: RO 3.7 / SRO 3.7
A4.05 Ability to manually operate and/or monitor in the control room: Reactor water level. Importance: RO 4.1 / SRO 4.1

1. Setup Instructions:

- Reset simulator to a shutdown IC with RHR A running in Suppression Pool Cooling. **For 2019 ILO Exam reset simulator to IC-118 and load schedule file JPM-E51_501.**
- **Leave simulator in FREEZE until ICS falls through, then go to RUN, acknowledge/reset annunciators, then Place simulator back in FREEZE**
- Place yellow switch caps on HPCS Pump and Injection valve.
- **Place simulator in RUN as operator is being read the Initial Conditions.**

2. Location / Method: Simulator / Perform

3. Initial Condition: The unit is scrammed and is operating IAW ONI-C71-1, Reactor Scram. RPV level is less than 178 inches and slowly lowering. HPCS is tagged out for maintenance. Feedwater has been lost. RPV level band is 178" to 219". RHR A is running in Suppression Pool Cooling.
4. Initiating Cue: The Unit Supervisor directs you manually initiate the Reactor Core Isolation Cooling System (RCIC) in accordance with SOI-E51, then restore and maintain RPV level into the directed band.

Start Time: _____ End Time: _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-E51, Reactor Core Isolation Cooling System****4.3 Manual Initiation from Standby Readiness****NOTES**

- Manual initiation of RCIC will actuate an automatic trip of the Main Turbine and Reactor Feed Pump Turbines.
- An automatic initiation of ECC and ESW will occur upon manual initiation of RCIC. If desired, a manual startup of ECC and ESW may be performed in accordance with the applicable SOI prior to RCIC Initiation.

4.3.1 INITIATE an evacuation from the following:

- Reactor Building Annulus
- Containment.

4.3.1 REFER TO SVI-D23-T1213, Suppression Pool Average Temperature, and COMMENCE monitoring suppression pool temperature.

Standard: Candidate announces evacuation of containment and annulus.
Candidate checks on performance of SVI-D23-T1213.

Instructor Cue: Shift Engineer is performing SVI-D23-T1213

Notes: None

SAT ____ UNSAT ____

Comment(s): _____

Step 2

- 4.3.3 ARM AND DEPRESS the RCIC MAN INIT. 1E51A-S37
- 4.3.4 (ECC A Loop Startup)
- 4.3.5 (ESW A Loop Startup)
- 4.3.6 Verify RCIC system achieves the same configuration as an Automatic Initiation From Standby Readiness.

<u>Critical Task:</u>	Candidate recognizes the failure of RCIC to manual initiate and takes actions to startup RCIC.
Standard:	Candidate informs Unit Supervisor that RCIC did not initiate.
Instructor Cue:	<p>If Candidate does not continue on to “Startup From Standby Readiness”, or verify auto actions by using “Automatic Startup From Standby Readiness”, ask Candidate what he/she suggests.</p> <p>If necessary to cue operator, direct him/her to continue with procedure and inject with RCIC.</p>
Notes:	<p>Per NOP-OP-1002, Conduct of Operations, “Take manual actions (in accordance with procedure direction, if available) when automatic actions do not occur. Verify and report automatic system actuations or response, which include operator actions if the plant has not responded as expected.”</p> <p>Candidate should transition to SOI-E51 Section 4.4, Manual Startup from Standby Readiness (Injection)</p> <p>OR</p> <p>Perform Step 4.3.6 to verify RCIC achieves same configuration as automatic initiation.</p> <p>Section 4.2 will ‘verify’ same valves are manipulated as Section 4.4.</p>

SAT ____ UNSAT ____

Comment(s): _____

Step 5

4.4.7 TAKE RCIC STEAM SHUTOFF, to OPEN to roll the RCIC Turbine.

1E51-F045

Critical Step: Candidate opens 1E51-F045.**Instructor Cue:** None**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____**Step 6**

4.4.8 RCIC flow is < 120 gpm

RCIC Pump discharge pressure is
> 125 psigTHEN VERIFY RCIC PUMP
MIN FLOW VALVE opens.1E51-
F019**Standard:** Candidate observes RCIC Min Flow Valve opens.**Instructor Cue:** None**Notes:** Step 4 is N/A**SAT** ____ **UNSAT** ____**Comment(s):** _____

Step 7

4.4.9 TAKE the RCIC INJECTION VALVE to OPEN.

1E51-F013

Critical Step: Candidate opens 1E51-F013.**Instructor Cue:** None**Notes:** None

SAT ____ UNSAT ____

Comment(s): _____**Step 8**4.4.10 WHEN the RCIC STEAM SHUTOFF is open, VERIFY the following valves
automatically close:

1E51-F045

- RCIC TURB CNDS TO CRW FIRST SHUTOFF 1E51-F004
- RCIC TURB CNDS TO CRW SECOND SHUTOFF 1E51-F005
- RCIC ST SUPP FIRST DRN SHUTOFF 1E51-F025
- RCIC ST SUPP SECOND DRN SHUTOFF 1E51-F026

4.4.11 CHECK the RCIC INJ CHECK VALVE valve disc open.

1E51-F066

Standard: Candidate verifies positions of valves insteps 4.4.10 & 4.4.11.**Instructor Cue:** None**Notes:** None

SAT ____ UNSAT ____

Comment(s): _____

Step 9

4.4.12 ADJUST RCIC PUMP FLOW CONTROL UNTIL the desired RCIC flow is reached.
1E51-R600

Standard: Candidate verifies the RCIC PUMP FLOW CONTROL, 1E51-R600, is in the AUTO with a setpoint of 700 gpm.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 10

4.4.13 PRIOR to lowering RCIC flow to < 350 gpm, PLACE the RCIC PUMP FLOW CONTROL in MANUAL.
1E51-R600

Standard: As RPV level is restored, Candidate lowers the RCIC PUMP FLOW CONTROL, 1E51-R600, in AUTO to a setpoint of >350 gpm.

Instructor Cue: After the Candidate establishes flow to the RPV, confirms proper RCIC system operation, and is restoring RPV water level, as the Unit Supervisor, inform the Candidate that you will assign another operator to monitor RCIC operation and RPV water level.

Notes: RCIC flow becomes unstable with flow Controller in AUTO at flows less than 350 gpm

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: RCIC is injecting into the RPV and restoring water level.

Evaluation Results: SAT ____ UNSAT ____

End Time ____

JPM CUE SHEET

INITIAL CONDITIONS:	<ul style="list-style-type: none">• The unit is scrammed and is operating IAW ONI-C71-1, Reactor Scram.• RPV level is less than 178 inches and slowly lowering.• HPCS is tagged out for maintenance.• Feedwater has been lost.• RPV level band is 178” to 219”.• RHR A is running in Suppression Pool Cooling.
INITIATING CUE:	The Unit Supervisor directs you manually initiate the Reactor Core Isolation Cooling System (RCIC) in accordance with SOI-E51, then restore and maintain RPV level into the directed band.

JOB PERFORMANCE MEASURE SETUP SHEET

System: Automatic Depressurization System
 Time Critical: No
 Alternate path: No
 Setting: Simulator
 Applicability: RO/SRO
 Safety Function: 3 - Reactor Pressure Control
 Validated: 15 minutes
 References: IOI-18 Rev 17, SOI-B21 Rev 20, and ARI-H13-P601-19 Rev. 20
 Task Standard: Reset ADS per IOI-18 and SOI-B21
 Task #: 218-501-04-01 Reset ADS (following Automatic or Manual Initiation)
 218-511-01-01 Monitor ADS System Operation
 Required Material: IOI-18, Emergency Operating Procedure And Isolation Restoration &
 SOI-B21, Nuclear Steam Supply Shutoff, Automatic Depressurization
 and Nuclear Steam Supply Systems
 K / A Data: 218000 A4.03 Ability to manually operate and/or monitor in the control
 room: ADS logic reset RO 4.2* / SRO 4.2*

1. Setup Instructions: (From a high power IC, use schedule file “Setup for JPM B21-003” & set RPV level @ 195” -200” NR) Reactor Scram - all rods in. ADS initiation complete and successful using keylock switches for Division 2 (P631). Reactor water level restored to greater than L-3. ADS inhibited. Maintain level with motor feed pump. Erase IOI-18 Sect 4.14 and SOI-B21 Sect 7.4. **For 2019 NRC Exam, reset simulator to IC-79. Insert Schedule file JPM-B21-003 and verify Event file JPM-B21-003 loads. Check FW screen for MFP set @ 20-25% (doesn’t always reset properly) Start adjusting FW up when Candidate starts closing SRVs. After SRVs are closed may need to reduce FW to zero to avoid L8**
2. Initial Condition: The Unit Supervisor is exiting EOP-1, RPV Control, and entering IOI-0018 Emergency Operating Procedure and Isolation Restoration. In addition, The Unit Supervisor is working on IOI-6, Cooldown Main Condenser Not Available and IOI-12 Maintaining Cold Shutdown. The ATC is controlling RPV water level.
3. Initiating Cue: The Unit Supervisor directs you, the Reactor Operator to reset ADS per IOI-0018 Section 4.14.

Start Time: _____ End Time: _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**IOI-18, EMERGENCY OPERATING PROCEDURE AND ISOLATION RESTORATION****4.14 LOW LOW SET, ADS, or SRV's Restoration**

4.14.1 IF required to restore LOW LOW SET, ADS, or SRV's, THEN PERFORM the following:

- VERIFY all available SRV keylock switches in AUTO, at ADS Relay Panel Division 2 1H13-P631.
- VERIFY all available SRV keylock switches in AUTO, at ECCS Benchboard 1H13-P601.
- REFER TO SOI-B21 and PERFORM Automatic Depressurization System Reset.

Critical Step: Operator verifies Division 1 and Division 2 keylock switches in AUTO

Instructor Cue: If Candidate asks about "available" SRVs, respond that all SRVs are available.

Notes: Division 2 keylock switches will be found in OPEN. Division 1 switches will be found in AUTO.

SAT ____ UNSAT ____

Comment(s): _____

Step 2**SOI-B21, NUCLEAR STEAM SUPPLY SHUTOFF, AUTOMATIC
DEPRESSURIZATION AND NUCLEAR STEAM SUPPLY SYSTEMS****7.4 Automatic Depressurization System Reset****7.4.1 VERIFY the following:**

- Reactor level greater than Level 3.
- Annunciator ADS A PERMISSIVE RX LEVEL 3 clear. (1H13-P601-19, C8)
- Annunciator ADS B PERMISSIVE RX LEVEL 3 clear. (1H13-P601-19, C10)

Standard: Operator verifies above items.

Instructor Cue: None

Notes: Closing the SRV's (Div 2 keys are placed in OFF) may cause RPV level to go less than L3, but the Motor Feed Pump will recover.

 If RPV level stabilizes at L3 due to Setpoint Setdown, as the ATC, take control of FW and raise RPV level.

 If SRV's are closed in rapid succession, RPV level will drop until FW recovers >L3. However, FW may trip on L8. If FW does trip, inform Operator another Operator will recover FW and to continue with reset.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

7.4.2 DEPRESS the following:

- | | |
|-----------------------------|------------|
| ▪ ADS A LOGIC SEAL IN RESET | 1B21C-S13A |
| ▪ ADS B LOGIC SEAL IN RESET | 1B21C-S13B |
| ▪ LOW LOW SET RESET A | 1B21C-S50A |
| ▪ LOW LOW SET RESET B | 1B21C-S50B |

Critical Step: Operator depresses the above reset pushbuttons

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

7.4.3 VERIFY the following white lights go off:

- | | |
|-----------------------------|------------|
| ▪ ADS A LOGIC SEAL IN RESET | 1B21C-S13A |
| ▪ ADS B LOGIC SEAL IN RESET | 1B21C-S13B |
| ▪ LOW LOW SET RESET A | 1B21C-S50A |
| ▪ LOW LOW SET RESET B | 1B21C-S50B |

Standard: Operator verifies above lights are off.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

7.4.4 VERIFY the following are in NORM.

- ADS A LOGIC INHIBIT 1B21-S34A
- ADS B LOGIC INHIBIT 1B21-S34B

Critical Step: Operator places both LOGIC INHIBIT switches in NORM

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 6

NOTE

ADS SRVs may be verified closed by any of the following:

- The presence of the control switch green lights
- The SOLENOID A and B STATUS matrix lights off
- Decreasing temperatures on ADS SRV TEMP MONITORING Recorder, on NSSS Recorder Panel, 1H13-P614

7.4.5 CONFIRM all the ADS SRVs are closed.

Standard: Operator confirms all ADS SRVs closed.

Instructor Cue: None

Notes: Terminate the JPM

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: ADS logic reset and ADS SRVs closed.

Evaluation Results: SAT _____ UNSAT _____

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	<p>The Unit Supervisor is exiting EOP-1, RPV Control, and entering IOI-0018 Emergency Operating Procedure and Isolation Restoration.</p> <p>In addition, The Unit Supervisor is working on IOI-6, Cooldown Main Condenser Not Available and IOI-12 Maintaining Cold Shutdown.</p>
INITIATING CUE:	<p>The Unit Supervisor directs you as the Reactor Operator to reset ADS per IOI-0018 Section 4.14.</p>

JOB PERFORMANCE MEASURE SETUP SHEET

System: G33, Reactor Water Cleanup System
 Time Critical: No
 Alternate Path: No
 Setting: Simulator
 Applicability: RO/SRO
 Safety Function: 4 - Heat Removal From the Core
 Validated Time: 16 Minutes
 References: SOI-G33 Rev. 48
 Required Material: SOI-G33, Reactor Water Cleanup System
 Task: 204-536-04-01 Establish RWCU Alternate Decay Heat Removal
 Task Standard: Establish Alternate Decay Heat removal using RWCU and control RPV water temperature
 K/A: 295021 Loss of Shutdown Cooling – AK2.02, Knowledge of the interrelations between Loss Of Shutdown Cooling and the following: Reactor water cleanup. - Importance RO 3.2 SRO 3.3
 AK3.05, Knowledge of the reasons for the following responses as they apply to Loss Of Shutdown Cooling: Establishing alternate heat removal flow paths. - Importance RO 3.6 SRO 3.8
 AA1.01, Ability to operate and/or monitor the following as they apply to Loss Of Shutdown Cooling: Reactor water cleanup system. - Importance RO 3.4 SRO 3.4
 AA1.04, Alternate heat removal methods. - Importance RO 3.7 SRO 3.7

1. **Setup Instructions:** Reset simulator to a shutdown IC with RR Pumps off, 1 RWCU pump running in Normal Recirc Mode and decay heat at 3.5 MBTU/Hr and Rx water temperature at ~120 °F. Insert Remote Function SW002 to 65°F to set NCC temperature at 65 °F. **For 2019 NRC exam, reset simulator to IC-106. Remove yellow switch cap from G33-F042.**
2. **Location / Method:** Simulator / Performance
3. **Initial Condition:** Plant is shutdown for a refueling outage. Shutdown Cooling isolated 15 minutes ago. The Unit Supervisor entered ONI-E12-2, Loss Of Decay Heat Removal. RWCU is running in Normal Recirc Mode. RPV water temperature was 124 °F at time of isolation.
4. **Initiating Cue:** Unit Supervisor directs you the Reactor Operator to perform Establishing RWCU Alternate Decay Heat Removal IAW SOI-G33 and monitor RPV water temperature.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-G33, Reactor Water Cleanup System****7.22 Establishing RWCU Alternate Decay Heat Removal**

7.22.1 CONFIRM the Reactor water temperature is less than 190°F.

7.22.2 IF RWCU is NOT in operation, THEN REFER TO Cold Startup (Rx Water Temp <212°F) to Normal Recirculation Mode to PLACE in operation.

Standard: Operator confirms RPV water temperature < 190 °F.

Instructor Cue: None

Notes: Candidate can use RWCU SPDS screen, back-panel recorders, or RWCU Temp squint meter (position 5) to determine Rx water temperature)

Step 7.22.2 is N/A from Initial Conditions.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2**NOTE**

During performance of the following steps, the non-regenerative heat exchanger outlet temperature (RWCU TEMP SELECTOR SWITCH 1G33-N601, position 5) should be maintained less than 130°F.

7.22.3 HOLD the RWCU HX SHELL SIDE BYPASS VALVE in OPEN UNTIL the valve is fully open. 1G33-F107

Critical Step: Operator opens 1G33-F107 fully.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

7.22.4 HOLD the RWCU HX OUTLET THROTTLE VALVE in CLOSE UNTIL the valve is fully closed. 1G33-F042

Critical Step: Operator closes 1G33-F042 fully.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

7.22.5 THROTTLE the RWCU FILTER/DEMIN BYPASS VALVE open to establish RWCU INLET FLOW as high as possible while maintaining it <450 gpm. 1G33-F044

Critical Step: Operator throttles 1G33-F044 to raise flow to < 450 gpm.

Instructor Cue: If asked about exceeding Normal Operating Limits for 1 RWCU pump, inform Candidate to refer to P&L 2.10 because the Plant is in an Off-normal condition and to proceed with establishing Alternate Decay Heat Removal.

Notes: RWCU flow will initially be about 170 gpm. After G33-F044 is throttled open, the Bottom Head Drain temperature will increase a few degrees over a short period of time then stabilize at a higher value with a very slight increasing trend.

Based on the decay heat loaded into the simulator, the Candidate will need to increase flow to ~ 350-400 gpm to control RPV temperature.

However, lowering of RPV temperature would not be observable for several hours based on 400 gpm flow from RWCU into the ~125,000 gallons of water in the RPV.

SAT ____ UNSAT ____

Comment(s): _____

Step 6**NOTE**

SOI-P43 Precautions and Limitations contains the bases for these temperature limits.

7.22.6 ADJUST the following controllers to maintain the NCC HX OUT TEMP to between 60°F AND 70°F using the knurled knob at 1H51-P1151. P43-R041

7.22.7 IF unable to maintain temperature in Step 7.22.6, THEN UNLOCK AND THROTTLE the RWCU Non-Regen Hx NCC Return Isolation open to establish NCC FM NHX FLOW, RWCU INLET FLOW as high as possible while maintaining it <825 gpm.

Standard: Candidate directs NLO to adjust the temperature controllers for the 2 on-service NCC Heat Exchangers.

Instructor Cue:

- If asked, NCC HXs A & B are in service.
- When directed to adjust controllers per Step 7.22.6, respond NCC temp is 65 °F.

Notes: Step 7.22.7 should be N/A if the Candidate adjusted filter bypass flow high enough in JPM Step 5.

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: RWCU is lined up for alternate decay heat removal and RPV water temperature rise has been stopped.

Evaluation Results: **SAT** ____ **UNSAT** ____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	<p>Plant is shutdown for a refueling outage.</p> <p>Shutdown Cooling isolated 15 minutes ago.</p> <p>Unit Supervisor entered ONI-E12-2, Loss Of Decay Heat Removal.</p> <p>RWCU is running in Normal Recirc Mode.</p> <p>RPV water temperature was 124 °F at time of isolation.</p>
INITIATING CUE:	<p>The Unit Supervisor directs you the Reactor Operator to perform Establishing RWCU Alternate Decay Heat Removal IAW SOI-G33 and monitor RPV water temperature.</p>

JOB PERFORMANCE MEASURE SETUP SHEET

System:	B21, Primary Containment Isolation System / Nuclear Steam Supply Shut-Off		
Time Critical:	No	Alternate Path:	Yes
Safety Function:	5 – Containment Integrity	Applicability:	RO/SRO
Setting:	Simulator	Validated:	10 minutes
References:	SOI-B21 Rev 20 & OAI-1703 Rev. 35		
Required Material:	SOI-B21, Nuclear Steam Supply Shutoff, Automatic Depressurization and Nuclear Steam Supply Systems OAI-1703, Isolations Hardcard		
Task:	009-506-04-01 – Isolate Balance of Plant (Manual Initiation of NS4)		
Task Standard:	Perform a Manual NS4 BOP Inboard Isolation per SOI-B21 sect 4.4		
K / A Data:	223002 Primary Containment Isolation System /Nuclear Steam Supply Shut-Off: A2.03 Ability to (a) predict the impact of a System Logic Failure on the Primary Containment Isolation System / Nuclear Steam Supply Shut-Off; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations. RO 3.0 / SRO 3.3		

1. Setup Instructions: Reset simulator to a shutdown IC with RPV level < L2. (Or start from a 100% IC and use schedule file “Setup for JPM B21-507) **For 2019 NRC Exam, reset simulator to IC-62. When ICS falls through, place simulator in RUN, load Schedule file JPM-B21-507, acknowledge alarms and place simulator in FREEZE. When examiner is reading Cue to Candidate, place simulator in RUN.**
2. Location / Method: Simulator / performance
3. Initial Condition: Reactor was scrammed due to a loss of Feedwater, Reactor Level is as indicated. NS4 Inboard system failed to isolate automatically. Another Operator is controlling Reactor Level and Pressure. Pressure control is on SRVs and RCIC due to a failure of the Steam Bypass Valves.
4. Initiating Cue: The Unit Supervisor directs you as a Reactor Operator to perform Manual Initiation of the Inboard Nuclear Steam Supply Shutoff System and verify isolation.

Start Time: _____ **End Time:** _____

Candidate:

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-B21 Nuclear Steam Supply Shutoff, Automatic Depressurization and Nuclear Steam Supply Systems****4.4 Manual Initiation of the Nuclear Steam Supply Shutoff System**

4.4.1 Closing ONLY the MSIVs,
THEN ARM AND DEPRESS either of
the following pairs simultaneously:

4.4.2 Closing the Main Steam Isolation
Valves
Closing the Outboard Balance of Plant
Isolation Valves

Standard: Steps 4.4.1 and 4.4.2 are N/A

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

4.4.3

Closing the Main Steam Isolation Valves

Closing the Inboard Balance of Plant Isolation Valves

THEN ARM AND DEPRESS the following pushbuttons simultaneously:

- NS4 Manual Isolation CH B
- NS4 Manual Isolation CH C

1B21-S25B

1B21-S25C

Critical Step: Operator Arms and Depresses 1B21-S25B & 1B21-S25C simultaneously.**Instructor Cue:** None**Notes:** Operator may Arm and Depress pushbuttons A and D also if doing from memory. Should notify the Unit Supervisor that MSIVs will also isolate.

SAT ____ UNSAT ____

Comment(s): _____**Step 3**

Operator verifies a complete isolation for the initiation signal.

Critical Step: Operator verifies a complete isolation for the initiation signal.

Operator discovers 1P50-F140 and 1G41-F140 failed to isolate.

Instructor Cue: None**Notes:** Operator should use the Isolations Hardcard or ARI-H13-P601-B5

SAT ____ UNSAT ____

Comment(s): _____

Step 4

Operator isolates valves at panels: 1P50-F140 at 1H13-P800 and 1G41-F140 at 1H13-P870.

Critical Step: Operator isolates:
1P50-F140 at 1H13-P800 and
1G41-F140 at 1H13-P870.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

4.4.4 DISARM the following:

- NS4 Manual Isolation CH A 1B21-S25A
- NS4 Manual Isolation CH B 1B21-S25B
- NS4 Manual Isolation CH C 1B21-S25C
- NS4 Manual Isolation CH D 1B21-S25D

Standard: Operator disarms isolation switches

Instructor Cue: None

Notes: If Operator performs steps from memory, he will not disarm the NS4 Isolation switches

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: Inboard BOP Isolation complete.

Evaluation Results: SAT ____ UNSAT ____

End Time: ____

JPM CUE SHEET

INITIAL CONDITIONS:	<ul style="list-style-type: none">• Reactor was scrammed due to a loss of Feedwater,• Reactor Level is as indicated.• NS4 Inboard system failed to isolate automatically.• Another Operator is controlling Reactor Level and Pressure.• Pressure control is on SRVs and RCIC due to a failure of the Steam Bypass Valves.
INITIATING CUE:	The Unit Supervisor directs you as a Reactor Operator to perform Manual Initiation of the Inboard Nuclear Steam Supply Shutoff System and verify isolation.

JOB PERFORMANCE MEASURE SETUP SHEET

System: AC Power
 Time Critical: No
 Alternate Path: No
 Applicability: RO/SRO
 Safety Function: 6 - Electrical
 Setting: Control Room / Plant
 Validated: 16 minutes
 References: ONI-SPI F-1 Rev. 7
 Tasks: 066-508-04-01 Respond to a Loss of Off Site Power
 066-509-01-01 Place Unit 1 (or Unit 2) SU XFMR in Service
 262-539-04-04 Assist in Off Site Power Restoration
 Task Standard: Energize buses L10, TH1, and EH11 per ONI-SPI F-1.

K / A Data: 295003 AA1.01 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: A.C. electrical distribution system 3.7 / 3.8

1. Simulator Setup Instructions: Reset to a LOOP IC with EH11 de-energized and power to U1 S/U transformer. **For 2019 ILO Exam reset to IC-148. Place Sim in RUN and acknowledge/reset alarms then place in FREEZE. While Candidate is being read the Initiating Cue, place simulator in RUN.** Provide Operator with a copy of ONI-SPI F1 Sections 1.0 and 2.0 marked up.
2. Location / Method: Simulator / performance
3. Initial Condition:
 - Plant is operating in accordance with ONI R10. "Loss of AC Power".
 - ONI-SPI F1 "Off-Site Power Restoration" Sections 1.0 and 2.0 are complete
 - ONI-SPI A-1 Bus EH11 Preparation is complete
 - Main Bus 2 – West Bus is energized
 - Main Bus 1 – East Bus is de-energized.
 - Disconnect S290 is open and damaged.
 - Disconnect S180 is closed.
 - Bus L10 is available for energization.
 - Bus L20 is not available for energization
4. Initiating Cue: Unit Supervisor directs you the Reactor Operator to energize Buses L10, TH1, and EH11 per ONI-SPI F1 Off-Site Power Restoration.

Start Time: _____ End Time: _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**ONI-SPI F-1, Off-Site Power Restoration**

Standard: Candidate reviews completed portions of ONI-SPI F1

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2**3.0 Power Restoration**

3.1	WHEN Bus L10 is available to be re-energized	WHEN Bus L20 is available to be re-energized
	Section 1.0 Outside Alignment is complete	
	Section 2.0 Inside Alignment is complete	
	PROCEED with this instruction.	

3.2	WHEN Bus L10 is available to be re-energized			Condition at left are NOT met.
	100-PY-B is available	200-PY-B is available	110-PY-B is available	
	Unit One Startup Transformer Manual Disconnect S180 is Closed	Unit Two Startup Transformer Manual Disconnect S290 is Closed	Main Xfmr Disconnect S112 is Closed or Can Be Closed	
	PERFORM Step 3.2.1 to energize Bus L10	PERFORM Step 3.2.2 to energize Bus L10	PERFORM Step 3.2.3 to energize Bus L10	GO TO Step 3.4

Standard: Candidate marks decision tables and determines that Step 3.2.1 is appropriate

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

3.2.1 Energize bus L10 from the Unit 1 Startup transformer 100-PY-B as follows:

3.2.1.a VERIFY the Unit 1 START-UP TRANSFORMER white potential light (secondary windings) is energized. 100-PY-B

Standard: Candidate verifies the white potential light is illuminated on H13-P870.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

3.2.1.b CLOSE the MAIN START-UP SUPPLY BRKR. L1003

Critical Step: Candidate closes breaker L1003.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

3.2.1.c OBSERVE the voltage on BUS L10 VOLTS indicates 12.5-14.3KV. 1R22-R012

3.2.1.d GO TO step 3.3.

Standard: Candidate observes voltage indication on 1R22-R12.

Candidate proceeds to Step 3.3.

Instructor Cue: None

Notes: Steps 3.2.2 and 3.2.3 are N/A

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

3.3 WHEN Bus L10 is energized THEN PERFORM the following to restore Bus TH1:

3.3.1 CLOSE INTERBUS TRANSFORMER BRKR to energize LH-1-A.

L1010

Critical Step: Candidate closes breaker L1010.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 6

- 3.3.2 VERIFY BUS TH1 white potential light on 1H13-P877 is energized.
- 3.3.3 WHEN time permits, THEN REFER to SOI-1R10 (4KV) to perform a check of Interbus Transformer LH-1-A.

Standard: Candidate observes white potential light is illuminated on H13-P870.

Candidate evaluates Step 3.3.3.

Instructor Cue: For Step 3.3.3, if asked, “Another operator is performing check of LH-1-A.”

Notes: Section 3.4 is N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 7**4.0 EH11 Bus Restoration**

4.1 IF EH11 is deenergized, THEN PERFORM the following:

4.1.1 VERIFY BUS EH11 is PREPARED, REFER TO ONI-SPI A-1 BUS
EH11 PREPARATION.

NOTE

Breaker EH1114 cannot be closed from 1H13-P877 with the diesel control switches in LOCAL.

4.1.2 AT Generator Control Panel, 1H51-P055A, VERIFY DIESEL
GENERATOR CONTROL TRANSFER switch is in CONT RM.

Standard: Candidate reviews Step 4.1.1 and determines step was completed in
Initial Conditions.

Candidate contacts NLO for Step 4.1.2.

Instructor Cue: For Step 4.1.2, “Diesel Generator Control Transfer switch is in Control
Room position.”

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 8**NOTE**

If Buses EH11 and EH12 are deenergized, LOOP logic will initiate when the following is performed.

4.1.3	Bus TH1 is energized	Bus TH21 is energized
	TAKE PREFERRED SOURCE BRKR EH1114 to CLOSE	TAKE ALTN PREFERRED SOURCE BRKR EH1115 to CLOSE

Critical Step: Candidate closes breaker EH1114.

Instructor Cue: None

Notes: Depending on pace of restoration, annunciator BUS ED-1-A UNDERVOLTAGE may alarm. The alarm comes in at 119 volts. This will not prevent operation of the EH11 breaker.

Terminate the JPM.

SAT ____ UNSAT ____

Comment(s): _____

Terminating Cue: Buses L10, TH1, & EH11 are energized.

Evaluation Results: SAT ____ UNSAT ____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	<ul style="list-style-type: none">• Plant is operating in accordance with ONI R10. “Loss of AC Power”.• ONI-SPI F1 “Off-Site Power Restoration” Sections 1.0 and 2.0 are complete• ONI-SPI A-1 Bus EH11 Preparation is complete• Main Bus 2 – West Bus is energized• Main Bus 1 – East Bus is de-energized.• Disconnect S290 is open and damaged.• Disconnect S180 is closed.• Bus L10 is available for energization.• Bus L20 is <u>not</u> available for energization
INITIATING CUE:	Unit Supervisor directs you the Reactor Operator to energize Buses L10, TH1, and EH11 per ONI-SPI F1 Off-Site Power Restoration.

JOB PERFORMANCE MEASURE SETUP SHEET

System: C51 – APRM System
 Time Critical: No
 Alternate Path: No
 Setting: Simulator
 Applicability: RO/SRO
 Safety Function: 7 - Instrumentation
 Setting: Simulator
 Validated: 22 minutes
 References: SOI-C51(APRM) Rev 19 & PDB-A014 Rev 11
 Tasks: 003-501-04-01 Bypass an APRM Channel
 003-502-04-01 Remove an APRM From Bypass
 003-526-01-01 Adjust APRM Gains
 Task Standard: Perform APRM gain adjustment per ONI-C51 (APRM)
 Required Material: SOI-C51 (APRM), Average Power Range Monitoring System
 PDB-A014, Percent Reactor Power vs. Indicated Steam Flow
 K / A Data: 215005 A1.07 Ability to predict and/or monitor changes in parameters
 associated with operating the Average Power Range Monitor/Local Power
 Range Monitor System controls including: APRM (gain adjustment factor)
 RO 3.0 / SRO 3.4
 A4.05 Ability to manually operate and/or monitor in the control room: Trip
 bypasses RO 3.4 / SRO 3.4

1. Setup Instructions: Reset simulator to a > 50% IC. **For 2019 NRC Exam, Reset to IC-58.** Dial APRM H Cal low out of Cal by greater than 2.0. Verify all other APRM calcs are <1%. Allow power stabilize for 5 minutes. Take a snapshot. After resetting to the snapshot, verify APRM H >2% out. Verify Heat Balance SPDS screen is updating Thermal Limits time/date. Ensure SOI-C51 Sections 7.4, 7.5, 7.10, & Attachment 1 and PDB-A14 are erased. Place small screwdriver in pen cup on ATC desk.
2. Initial Condition: Reactor Power is as indicated and has been stable for 5 minutes. APRM H CAL is greater than 2%.
3. Initiating Cue: The Unit Supervisor directs you, the Reactor Operator to adjust APRM H gain.

Start Time: _____ End Time: _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-C51 (APRM), AVERAGE POWER RANGE MONITORING SYSTEM****7.10 Adjusting APRM Gain****NOTE**

- Power shall be held constant under steady state conditions for the duration of any adjustments.
- This section partially satisfies the requirements of Technical Specification Table 3.3.1.1-1 SURVEILLANCE REQUIREMENT SR 3.3.1.1.2 for Items (2b) and (2c) for APRM Flow Biased Simulated Thermal Power - High and Neutron Flux – High CHANNEL CALIBRATION.

7.10.1 CONFIRM the reactor is in Mode 1 or 2 with APRMs NOT downscale.

7.10.2 CONFIRM reactor power has been constant for the last 5 minutes.

Standard: Operator confirms Mode 1 with power steady for 5 minutes

Instructor Cue: None

Notes: Power stable for 5 minutes given in Initial Conditions.

Operator can use APRM DNSC lights on P680 confirm APRMs not down scale.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

7.10.3 PERFORM one of the following to obtain a heat balance:

- OBTAIN a current, validated Periodic Log.
- OBTAIN a current, validated Power To Flow Log.
- OBTAIN a current, manual heat balance per FTI-B0005.

7.10.4 IF reactor is in Mode 1, THEN CONFIRM percent power from the heat balance (Process Computer or Manual) is greater than the lower dashed line of PDB-A0014, Percent Reactor Power vs. Indicated Steam Flow. Note in the Comments Section below if percent power is not between the dashed lines of the curve.
Comments: _____

Critical Step: Operator obtains a heat balance and confirms percent power from heat balance is greater than lower dashed line of PDB-A0014.

Instructor Cue: None

Notes: If Periodic Log is not working, Power to Flow Log will render satisfactory information,

SAT ____ UNSAT ____

Comment(s): _____

Step 3

7.10.5 REFER TO Bypassing an APRM Channel and BYPASS the associated APRM Channel. H

7.4 Bypassing an APRM Channel

CAUTIONS

- This section shall NOT be used to bypass a valid APRM upscale trip. Bypassing an APRM channel bypasses all trip and alarm functions initiated from that channel and requires that it be declared inoperable.
- If an APRM is bypassed at 1H13-P680, then depressing the Bypass Test pushbutton on the associated APRM drawer will reactivate the channel's trip function and may result in a half scram.

NOTES

- This section is used when instrument failure may require an APRM Channel output to RCIS or RPS to be bypassed.
- The normal Flux Level input to the Reactor Recirculation System Flux Controller for power control is from APRM Channel A. When APRM Channel A is bypassed, the input to the Flux Controller is automatically switched to APRM Channel E.
- Bypassing the APRM does NOT cause the associated OPRM Module to be inoperable. The associated OPRM receives Reactor Power and Loop Flow signals from the APRM. The bypassing of the APRM will automatically force the associated OPRM to obtain these signals from the other OPRM in the same cabinet (e.g., A/E, B/F, C/G, D/H). This is an automatic function to maintain OPERABILITY of the OPRM Channel.

7.4.1 REFER TO Technical Specification Table 3.3.1.1-1 Item 2 for applicability.

NOTE

When bypassing APRM A, the following step must be performed to ensure a Rcirc Flow change does not occur.

7.4.2 IF APRM Channel A is to be bypassed, THEN VERIFY that all conditions of either 7.4.2.a OR 7.4.2.b exist:

7.4.3 PLACE the NEUTRON MONITOR BYPASS, APRM joystick on 1H13-P680, in the BYPASS position for the APRM Channel being bypassed. 1C51B-S6
CH H

Critical Step: Operator places APRM joystick in H position.

Instructor Cue: For step 7.4.1 Technical Specification 3.3.1.1 has been checked for applicability, proceed

Notes: Step 7.4.2 is NA

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

7.4.4 CONFIRM that the APRM Bypass status light comes on at the selected APRM's Power Range Neutron Mon Panel. 1H13-P672

7.4.5 APRM Channel H is to be bypassed.

The NEUTRON MONITOR BYPASS, APRM joystick on 1H13-P680, is in the BYPASS position for the APRM Channel H.

1C51B
-S6
CH H

THEN DIRECT I&C to perform the following:

7.4.9 IF the bypassed APRM channel caused any trips or alarms, THEN RESET those trips or alarms.

Standard: Operator confirms lights are on and resets alarms if necessary.

Instructor Cue: As I&C, when directed to perform Step 7.4.5.a & b, respond that they are complete.

Notes: Steps 7.4.6 through 7.4.8 are N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 57.10 Adjusting APRM Gain

7.10.6 RECORD the “As Found” APRM CAL from the NSSS Heat Balance Screen: H

7.10.7 REFER TO Attachment 1, AUX, and ADJUST R16, Feedback Control in AUX card, Z404 to obtain a reading on the APRM of $\pm 1\%$ of the heat balance.

7.10.8 RECORD the “As Left” APRM CAL from the NSSS Heat Balance Screen: H

Standard: Operator records As Found and As Left data.**Critical Step:** Operator adjusts R16 so that APRM H Cal is $\leq 1\%$ **Instructor Cue:** None**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____

Step 6

7.10.9 REFER TO Restoring an APRM Channel From Bypass and RESTORE the associated APRM Channel H.

7.5 Restoring an APRM Channel From Bypass

NOTE

The ICS may be used to determine Reactor Power.

7.5.1 In Mode 1 AND Reactor Power \geq 23.8% and . . .

7.5.2 IF APRM Channel A is being returned to service, THEN VERIFY . . .

Standard: Steps 7.5.1 and 7.5.2 are N/A

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 7

- 7.5.3 DEPRESS the TRIP RESET button on the affected channel's display meter at the APRM's Power Range Neutron Mon Panel to reset any sealed in alarms..
- 7.5.4 IF APRM Channel H is to be returned to service, THEN DIRECT I&C to perform the following:
- 7.5.8 PLACE the NEUTRON MONITOR BYPASS, APRM joystick on 1H13-P680, in the NEUTRAL position for the APRM Channel being restored to service H

Standard: Operator depresses the trip reset button on APRM H and directs I&C to remove jumpers

Critical Step: Operator places APRM H joystick in NEUTRAL.

Instructor Cue: As I&C, when directed to perform Step 7.5.4.a & b, respond that they are complete.
APRM gain adjustment is logged

Notes: Step 7.5.5 through 7.5.7 are not required.

SAT ____ UNSAT ____

Comment(s): _____

Step 87.10 Adjusting APRM Gain

7.10.10 IF it is desired to adjust additional APRMs, THEN REPEAT Steps 7.10.5 through 7.10.9 for any additional APRMs.

7.10.11 RECORD the APRM adjustment in the Plant Narrative Log.

Standard: Operator request ATC to make log entry.

Instructor Cue: APRM gain adjustment is logged

Notes: Step 7.10.10 is not required.
Terminate the JPM

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: APRM H Cal has been adjusted to within +/- 1%

Evaluation Results: SAT ____ UNSAT ____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	Reactor Power is as indicated and has been stable for 5 minutes. APRM H CAL is greater than 2%.
INITIATING CUE:	The Unit Supervisor directs you, the Reactor Operator to adjust APRM H gain.

JOB PERFORMANCE MEASURE SETUP SHEET

System: M14, Containment Vessel And Drywell Purge System
 Time Critical: No
 Alternate Path: Yes
 Setting: Simulator
 Applicability: RO/SRO
 Safety Function: 9 - Radioactivity Release
 Validated Time: 20 Minutes
 References: SOI-M14 Rev. 26 & ARI-H13-P800-02 Rev. 9
 Required Material: SOI-M14, Containment Vessel And Drywell Purge
 ARI-H13-P800-02, HVAC Control Panel
 Task: 315-501-01-01 Startup the Containment Vessel and Drywell Purge
 System in the Intermittent Mode
 315-515-01-01 Analyze System Problems
 315-517-01-01 Respond to Alarms
 Task Standard: Perform CVDWP Startup to Intermittent Mode and respond to fan trip
 K/A: 288000 Plant Ventilation Systems:
 A4.01- Ability to manually operate and/or monitor in the control
 room: Start and stop fans, RO 3.1 SRO 2.9
 K3.05- Knowledge of the effect that a loss or malfunction of the Plant
 Ventilation Systems will have on following: Reactor building pressure:
 Plant-Specific, RO 3.1 SRO 3.3

1. Setup Instructions: For 2019 NRC Exam, reset simulator to IC-58. Load Schedule file JPM-M14-501 and verify Event file JPM-M14-501 loads. Insert Malfunctions cp01_1m14c001a for fan shaft shear and 1H13P8002AD6 for fan low flow annunciator. / Place pictures of M17 Vacuum Relief ΔP pictures on H13-P868 and H13-P869.
2. Location / Method: Simulator / Performance
3. Initial Condition: Plant operating at power. RP requests running M14 CVDWP for 4 hours to lower noble gas concentration in containment. The drywell purge supply ducting is filled.
4. Initiating Cue: Unit Supervisor directs you the Reactor Operator to startup M14, CVDWP system train A to Intermittent Mode.

Start: _____ Stop: _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-M14, Containment Vessel And Drywell Purge System****4.1 Startup to Intermittent Mode****NOTE**

- During Modes 1, 2, or 3, M14 System operation should be restricted, when possible, to between 1100 and 1600 hours. This will result in lower off-site noble gas doses due to favorable meteorological conditions.
- ONI-R36-2 does not allow Intermittent Mode operation when outside air ambient air temperature is $\leq -20^{\circ}\text{F}$.
- The drywell purge supply ducting must be filled prior to Reactor Startup per IOI-1 or IOI-2.

4.1.1 CONFIRM outside ambient air temperature is $> -20^{\circ}\text{F}$.

Standard: Candidate confirms outside ambient air temperature is $> -20^{\circ}\text{F}$.

Instructor Cue: None

Notes: Candidate can use SPDS to obtain outside ambient temperature. (66 °F)

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

4.1.2 CONFIRM M17 Vac Relief dP, as indicated by at least one of the following, is < 0.30 psid.

Standard: Candidate confirms Vac Relief $\Delta P < 0.3$ psid.

Instructor Cue: None

Notes: Pictures on back-panels indicate $\Delta P < 0.3$ psid.

A copy of Tech Spec Rounds (PRI-TSR) is in simulator.

Step 4.1.3 is N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

4.1.4 IF in Modes 1, 2, or 3, THEN VERIFY the drywell purge supply ducting is filled.

Standard: Drywell purge supply ducting fill status given in Initial Conditions.

Instructor Cue: None

Notes: Step 4.1.5 is N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

- 4.1.6 DIRECT the Chemistry Unit to sample in accordance with REC-0104.
4.1.7 NOTIFY Radiation Protection of the expected duration of M14 operation.
4.1.8 REFER TO Attachment 12 and VERIFY system fan settings adjusted to the listed setpoints.

Standard:	Candidate directs Chemistry to sample and notifies RP. Candidate directs NLO to verify fans setting on Attachment 12.
Instructor Cue:	Fan settings are adjusted per Attachment 12.
Notes:	Step 4.1.9 is N/A.
SAT ____	UNSAT ____
Comment(s): _____	

Step 5

- 4.1.10 RECORD the date and time for Local Leak Rate Test (LLRT) surveillance tracking.

Standard:	Candidate records date and time.
Instructor Cue:	None
Notes:	None
SAT ____	UNSAT ____
Comment(s): _____	

Step 6

4.1.11 TAKE the following to OPEN:

- CNTMT & DW EXH OTBD ISOL DMPR 1M14-F090
- CNTMT PURGE EXH BYP SECOND ISOL DMPR 1M14-F200
- CNTMT PURGE EXH BYP FIRST ISOL DMPR 1M14-F205

Critical Step: Candidate takes 1M14-F090, 1M14-F200, and 1M14-F205 to OPEN.**Instructor Cue:** None**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____**Step 7****NOTE**

Startup of the Purge Exhaust Fan may cause the Containment Vacuum Breaker(s) to lift UNTIL the system startup is completed. This is an expected occurrence and need NOT be reported.

4.1.12 IF WHILE starting the Purge Exhaust fan the Containment Vacuum breakers lift, THEN RECORD the event in the Plant Narrative Log.

Standard: Candidate request ATC to make Narrative Log entry if required.**Instructor Cue:** ATC will make Narrative Log entry if required.**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____

Step 8

4.1.13 TAKE one the following to START:

- CNTMT & DW EXH FAN A

1M14-C003A

Critical Step: Candidate takes 1M14-C003A to START.**Instructor Cue:** None**Notes:** Starting M14-C003A given in Initiating Cue**SAT** ____ **UNSAT** ____**Comment(s):** _____**Step 9**

4.1.14 TAKE the following to OPEN:

- CNTMT PURGE SUPP OTBD ISOL DMPR 1M14-F040
- CNTMT PURGE SUPP BYP SECOND ISOL DMPR 1M14-F195
- CNTMT PURGE SUPP BYP FIRST ISOL DMPR 1M14-F190

Critical Step: Candidate takes 1M14-F040, 1M14-F195, and 1M14-F190 to OPEN.**Instructor Cue:** None**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____

Step 10

4.1.13 TAKE one the following to START:

- CNTMT & DW SUPP FAN A

1M14-C001A

Critical Step: Candidate takes 1M14-C001A to START.**Instructor Cue:** None**Notes:** Starting M14-C001A given in Initiating Cue

Approximately one minute after starting M14-C001A, the fan low flow annunciator will alarm (H13-P800-02-D6). Then a short time later the Cntmt Vac Rlf Check Vlv Not Closed annunciators will alarm.

SAT ____ **UNSAT** ____**Comment(s):** _____

Step 11**NOTE**

After approximately 5 minutes of supply fan operation, its control mode will automatically shift from flow to Δp control.

4.1.16 IF necessary, THEN ADJUST the flowrate to the value listed in Attachment 12.

Standard:

Candidate waits for fans to shift to ΔP mode.

Candidate responds to low supply fan flow alarm and directs NLO to report fan flow rate and/or check fan settings per Attachment 12.

Candidate refers to ARI-H13-P800-02 for further direction.

Instructor Cue:

If directed to do a post-start walkdown before alarm comes in, report that there is no abnormal noise or vibration.

If directed to report fan flow rate, report, "M14-N137A reads 2000 SCFM."

If directed to adjust flowrate, report, "Fan A flow controller is adjusted to maximum."

Notes:

None

SAT ____

UNSAT ____

Comment(s): _____

Step 12**ARI-H13-P800-0002-D6, CNTMT PURGE SUPP FAN A FLOW LOW****4.0 SUBSEQUENT OPERATOR ACTION**

- 4.1 IF operating in the Intermittent Mode, THEN REFER TO SOI-M14 and
SHIFT to CNTMT PURGE SUPP FAN B. 1M14-C001B

Standard: Candidate refers to ARI and reports the need to shift supply fans.

Candidate refers to SOI-M14 Section 7.2 for supply fan shift

Instructor Cue: Understand you are going to shift supply fans.

Notes: Candidate could use SOI-M14 Section 7.1 to shift trains.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 13**SOI-M14, Containment Vessel And Drywell Purge System****7.2 Shifting Containment Purge Supply Fans in Intermittent Mode**

- 7.2.1 IF outside air temperature is $\leq 35^{\circ}\text{F}$, THEN SLOWLY ADJUST the oncoming temperature controller to the maximum setpoint ($\sim 90^{\circ}\text{F}$) at 1H51-P158.
- 7.2.2 CONTACT Radiation Protection prior to changes in system lineup, due to the potential to affect airborne activity levels or natural radon levels.

Standard: Candidate contacts RP.

Instructor Cue: None

Notes: Step 7.2.1 is N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 14

7.2.3 PLACE the offgoing CNTMT PURGE SUPP FAN in OFF:

1M14-C001A

Critical Step: Candidate takes 1M14-C001A to OFF.**Instructor Cue:** None**Notes:** None**SAT** ____ **UNSAT** ____**Comment(s):** _____**Step 15**

7.2.4 TAKE one the following to START:

1M14-C001B

Critical Step: Candidate takes 1M14-C001B to START.**Instructor Cue:** None**Notes:** Eventually the Cntmt Vac Rlf Check Vlv Not Closed annunciators will reset.**SAT** ____ **UNSAT** ____**Comment(s):** _____

Step 16

- 7.2.5 WHEN approximately 5 minutes have elapsed AFTER starting CNTMT PURGE SUPP FAN, THEN VERIFY temperature controller set at 65°F.
- 7.2.6 IF necessary, THEN ADJUST the flowrates to the value listed in Attachment 12.

Standard: Candidate waits 5 minutes then contacts NLO to verify temperature controller setting.

Instructor Cue: Temperature controller set at 65°F

Notes: No flow adjustments are necessary

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: Candidate starts CVDWP train A in Intermittent Mode, responds to low flow alarm and shifts supply fans from A to B.

Evaluation Results: **SAT** ____ **UNSAT** ____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	<p>Plant operating at power.</p> <p>RP requests running M14 CVDWP for 4 hours to lower noble gas concentration in containment.</p> <p>The drywell purge supply ducting is filled.</p>
INITIATING CUE:	<p>Unit Supervisor directs you the Reactor Operator to startup M14, CVDWP system train A to Intermittent Mode.</p>

JOB PERFORMANCE MEASURE SETUP SHEET

System: R43, Division 1 And 2 Diesel Generator System
 Time Critical: No
 Alternate Path: No
 Applicability: RO/SRO
 Safety Function: 6 - Electrical
 Validated Time: 20 Minutes
 References: SOI-R43, Rev. 48
 Required Material: SOI-R43, Division 1 And 2 Diesel Generator System
 Task: 264-535-01-01 Transfer Control of the SBDG To and From the Control Room
 264-537-01-01 Startup the Standby Diesel Generator (SBDG) System (Local Manual Start)
 Task Standard: Perform Local Manual Start of Div. 2 Diesel Generator.
 K/A: 264000, Emergency Generators (Diesel/Jet) – K4.07, Knowledge of Emergency Generators (Diesel/Jet) design feature(s) and/or interlocks which provide for the following: Local operation and control, Importance RO 3.3 SRO 3.4

1. Setup Instructions: Provide Candidate with copy of SOI-R43
2. Location / Method: Plant / Simulation
3. Initial Condition: Maintenance has been performed on the Division 2 diesel generator which requires a local start as part of a maintenance run. SOI-R43 Section 7.19, Pre-Startup Inspection or Post Shutdown Engine Roll was completed an hour ago. The Shift Engineer has closed the outside air intake dampers for the M44 rooftop units. Division 2 ESW is running. The required ventilation systems have been placed in recirc. The Control Room is coordinating with the System Engineer in keeping the Diesel Generator Start Record. The US has waived data monitoring. Div. 1 and Div. 3 DGs are operable.
4. Initiating Cue: Unit Supervisor directs you the Reactor Operator to perform a Local - Manual Start of the Division 2 diesel generator.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**SOI-R43, Division 1 And 2 Diesel Generator System****NOTE**

The eSOMS Division 1(2) DG Data Monitoring Prestart and Post Shutdown Readings are normally taken during SOI runs. If the load is NOT within 5600-5800 KW, the operating readings provide little or no value. Operating Rounds are NOT required for short duration runs or low load operation. The local operator should continue to monitor the parameters and report any problems/concerns to the control room when readings are not being recorded.

4.3 Local - Manual Start

4.3.4 IF Division 2 is being started, THEN REFER TO eSOMS Division 2 DG Data Monitoring and RECORD readings.

Standard: Candidate determines eSOMS readings are not required.

Instructor Cue: If asked about P&Ls, inform Candidate P&Ls are Met.

If asked, this is a short duration run and eSOMS readings are not required.

Notes: Completion of Steps 4.3.1, 4.3.2, 4.3.5, and 4.3.6 were given in Initial Conditions.
Step 4.3.3 is N/A.

For JPM Step 7, the Candidate will need a key. It can be obtained from the Ops Foreman's key locker in Unit 2 Control Room.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

4.3.7 IF NOT in local control, THEN REFER TO Transferring Control to the Diesel Generator Room (LOCAL) and ESTABLISH local control.

7.14 Transferring Control to the Diesel Generator Room (LOCAL)

CAUTION

The diesel generator will not respond to an automatic start signal with DIESEL GENERATOR CONTROL TRANSFER in LOCAL.

7.14.1 RECORD appropriate Maintenance Rule status in Plant Narrative Log.

Standard: Candidate contacts Control Room to make Narrative Log entry.

Instructor Cue: Narrative Log entry for Maintenance Rule has been made.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

7.14.2 PLACE the DIESEL GENERATOR CONTROL TRANSFER in LOCAL.
1H51-P055B.

Critical Step: Candidate simulates placing Diesel Generator Control Transfer switch in LOCAL.

Instructor Cue: Understand Control Transfer switch in LOCAL

Notes: Should inform Control Room that this action will cause an alarm in CR.
Step 7.14.3 is N/A.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

7.14.4 PERFORM Independent Verification of required components.

Standard: Candidate request IV.

Instructor Cue: After Candidate performs 1st part of IV, inform him that Independent Verification is complete

Notes: Candidate returns to Section 4.3 (Step 4.3.8)

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

4.3.8 PLACE the HORN switch in ACT.

Standard: Candidate simulates placing the Horn switch in ACT.

Instructor Cue: Understand Horn is in ACT

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 6

4.3.9 IF NOT performing an emergency start, THEN PERFORM the following:

4.3.9.a OPEN the Diesel Turbo Prelube Valve.

1R47-F544B

4.3.9.b WAIT 3 to 5 minutes before performing the following step.

Critical Step: Candidate simulates opening the Diesel Turbo Prelube Valve.

Standard: Candidate waits 3 to 5 minutes.

Instructor Cue: Understand Diesel Turbo Prelube Valve is open

Notes: Time compression may be used if desired.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 7

4.3.10 TAKE the MODE SELECT keylock to START at Engine Control Panel.

1H51-P054B

Critical Step: Candidate simulates taking the MODE SELECT keylock to START.

Instructor Cue: Understand Mode Select keylock in START.

The diesel is starting to roll.

After about 15 to 20 seconds inform Candidate diesel is at rated speed.

Notes: The key for the MODE SELECT is in the Field Supervisors office.

The Candidate should observe 1R43-R466B on P055B for speed of DG.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 8

- 4.3.11 WHEN the diesel is at rated speed, THEN PERFORM the following:
- 4.3.11.a IF GEN A Ø -B Ø VOLTS is < 3700 Volts, THEN SHUTDOWN the Diesel Generator. 1R43-R105B
- 4.3.11.b VERIFY DIESEL GENERATOR AUTOMATIC VOLTAGE REGULATOR CONTROL adjusted to 3900 to 4400 Volts on GEN A Ø - B Ø VOLTS. 1R43-R105B

Standard:	Candidate observes diesel generator voltage on meter 1R43-R105B.
Instructor Cue:	For Step 4.3.11.a inform Candidate that diesel generator voltage is 4000 volts.
Notes:	Meter 1R43-R105B is on panel P054B
SAT ____	UNSAT ____
Comment(s): _____	

Step 9

- 4.3.12 VERIFY the DG Building Ventilation System starts.

Standard:	Candidate determines diesel generator room ventilation starts.
Instructor Cue:	Inform Candidate that diesel generator room air is moving.
Notes:	Step 4.3.13 is N/A.
SAT ____	UNSAT ____
Comment(s): _____	

Step 10

4.3.14

The DIESEL GENERATOR FIELD BREAKER CLOSED amber light is off at the Generator Control Panel.
The bulb is good.
THEN INITIATE a Notification.

1H51-P055B

Standard:	Candidate observes the Diesel Generator Field Breaker CLOSED amber light.
Instructor Cue:	Inform Candidate that amber light is ON.
Notes:	None
SAT ____ UNSAT ____	
Comment(s):	_____

Step 11

4.3.15 IF Diesel Turbo Prelube Valve is open, THEN CLOSE the oncoming Diesel Turbo Prelube Valve. 1R47-F544B

<u>Critical Step:</u>	Candidate simulates closing the Diesel Turbo Prelube Valve.
Instructor Cue:	Understand Diesel Turbo Prelube Valve is closed.
Notes:	Completion of Step 4.3.16 given in the Initial Conditions. Terminate the JPM.
SAT ____ UNSAT ____	
Comment(s):	_____

Terminating Cue: Division 2 diesel generator is running with Turbo Prelube Valve closed.

Evaluation Results: SAT ____ UNSAT ____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	<ul style="list-style-type: none">• Maintenance has been performed on the Division 2 diesel generator which requires a local start as part of a maintenance run.• SOI-R43 Section 7.19, Pre-Startup Inspection or Post Shutdown Engine Roll was completed an hour ago.• The Shift Engineer has closed the outside air intake dampers for the M44 rooftop units. Division 2 ESW is running.• The required ventilation systems have been placed in recirc.• The Control Room is coordinating with the System Engineer in keeping the Diesel Generator Start Record.• The US has waived data monitoring.• Div. 1 and Div. 3 DGs are oprable.
INITIATING CUE:	Unit Supervisor directs you the Reactor Operator to perform a Local - Manual Start of the Division 2 diesel generator.

JOB PERFORMANCE MEASURE SETUP SHEET

System: Fire Protection
 Time Critical: No
 Alternate path: No
 Applicability: RO/SRO
 Safety Function: 8 – Plant Service Systems
 Setting: Plant (RRA)
 Validated: 26 minutes
 References: SOI-P54 (GAS) Rev 9
 Task Standard: Manually Initiate the Control Room C02 System from Outside the Control Room per SOI-P54 (GAS)
 Task #: 286-518-04-01 Manually Initiate the Control Room C02 System from Outside the Control Room
 Required Material: SOI-P54 GAS), Section 7.2 and Att. 3
 K / A Data: 286000 A2.08 Ability to (a) predict the impacts of the following on the FIRE PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to actuate when required RO 3.2 / SRO 3.3

1. Setup Instructions: May want to start JPM at or near the Remote Shutdown Panel.
2. Location / Method: Plant / Simulation
3. Initial Condition: An electrical fire in the Control Room Center Subfloor Area required the evacuation of the Control Room. All immediate actions for ONI-C61, Evacuation of the Control Room, have been completed.
4. Initiating Cue: The Unit Supervisor directs you, as an In-Plant Operator, to manually initiate the Carbon Dioxide System for the Control Room Center Subfloor Area in accordance with SOI-P54 (GAS).

Start Time: _____ **End Time:** _____

Operator: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Evaluator Note:
May want to start JPM at Remote Shutdown Panel.

Step 1**SOI-P54 (GAS), FIRE PROTECTION SYSTEM – GAS****7.2 Carbon Dioxide System Manual Initiation****NOTES**

- This section will normally be performed by the Fire Brigade.
- In the event of an associated Control Panel loss of power, the Master Valve will open and fill the header with CO2 up to the Selector Valve.

7.2.1 IF there is a fire in a Reactor Recirc pump . . .

7.2.2 IF there is a fire in any of the following rooms . . .

Standard: Steps 7.2.1 and 7.2.2 are N/A.

Instructor Cue: None

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2**WARNING**

During manual initiation, no warning is given that carbon dioxide will be discharged within the selected room, which will create an atmospheric hazard.

- 7.2.3 IF room conditions allow, THEN ENSURE the room is clear of personnel.
- 7.2.4 BREAK the Selector Valve breakglass.
- 7.2.5 ROTATE the Selector Valve pilot valve clockwise.
- 7.2.6 HOLD the Selector Valve pilot valve open for the discharge time listed in Attachment 3.
- 7.2.7 CLOSE the Selector Valve pilot valve

Standard: Operator simulates breaking glass and rotating Selector Valve Pilot Valve P54-F3461 clockwise and holds open for 4 minutes.

Operator simulates closing the Selector valve.

Instructor Cue:

- Glass broken, Pilot Valve open.
- Four minutes have elapsed.
- Pilot valve is closed
- If asked about flow noise or frost, inform operator no flow noise has been heard. No frost on pipes observed.

Notes: Time compression may be used to shorten 4 minute wait time

Per Attachment 3, Carbon Dioxide Master & Selector Valves and Discharge Times, Selector Valve is 1P54-F3461 and discharge time is 4 minutes.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

7.2.8 IF no CO2 discharge occurs, THEN PERFORM the following:

7.2.8.a OPEN the Selector Valve pilot valve.

Critical Step: Operator simulates opening or leaves open 1P54-F3461

Instructor Cue: If Asked, no CO₂ Discharge is indicated.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

7.2.8.b BREAK the Master Valve breakglass.

7.2.8.c ROTATE the Master Valve pilot valve clockwise.

7.2.8.d HOLD the Master Valve pilot valve open for the discharge time specified in Attachment 3.

Critical Step: Operator simulates breaking glass and rotating Master Valve Pilot Valve P54-F3441 clockwise and holds open for 4 minutes.

Operator simulates closing the Master valve.

Instructor Cue:

- Glass broken, Pilot Valve open.
- Four minutes have elapsed.
- If asked about flow noise inform operator flow noise has been heard.

Notes: Time compression may be used to shorten 4 minute wait time
Per Attachment 3, Carbon Dioxide Master & Selector Valves and Discharge Times, Master Valve is 1P54-F3441 and discharge time is 4 minutes.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

7.2.8.e CLOSE the Master Valve pilot valve.

7.2.8.f CLOSE the Selector Valve pilot valve.

7.2.9 VERIFY that at least 10 minutes have elapsed following the carbon dioxide discharge before opening OR ventilating the affected area

Standard:	Operator simulates closing Master Pilot Valve 1P54-F3441. Operator simulates closing Selector Pilot Valve 1P54-F3461
Instructor Cue:	Valve is closed Valve is closed
Notes:	If desired to remain in RRA, Operator to verbally identify previous location to perform step 7.2.8.f. Terminate JPM after Step 7.2.8.f.
SAT ____	UNSAT ____
Comment(s): _____	

Terminating Cue: Operator has initiated Control Room Center Subfloor CO2 using the Master Valve Pilot Valve.

Evaluation Results: SAT____ UNSAT____

End Time _____

JPM CUE SHEET

INITIAL CONDITIONS:	<ul style="list-style-type: none">• An electrical fire in the Control Room Center Subfloor Area required the evacuation of the Control Room.• All immediate actions for ONI-C61, Evacuation of the Control Room, have been completed.
INITIATING CUE:	The Unit Supervisor directs you, as an In-Plant Operator, to manually initiate the Carbon Dioxide System for the Control Room Center Subfloor Area in accordance with SOI-P54 (GAS).

JOB PERFORMANCE MEASURE SETUP SHEET

System: M49, Smoke Venting System
Time Critical: No
Alternate Path: No
Setting: RRA
Applicability: RO/SRO
Safety Function: 9 - Radioactivity Release
Validated Time: 11 Minutes
References: ONI-SPI E-2 Rev. 2
Required Material: ONI-SPI E-2, Providing Switchgear Cooling Following A Total Loss Of MCC And Switchgear Ventilation
Task: 040-501-04-04 Start Up the Division 1 or 2 Smoke Venting System
Task Standard: Perform ONI-SPI E-2 to provide cooling for the Cable Spreading Areas and MCC Switchgear Rooms
K/A: 288000, Plant Ventilation Systems – K5.03, Knowledge of the operational implications of the following concepts as they apply to Plant Ventilation Systems: Temperature control. Importance RO 2.5 SRO 2.6

1. Setup Instructions: Provide Candidate with a marked-up copy ONI-SPI E-2
2. Location / Method: Plant / Simulation
3. Initial Condition: Plant operating in ONI-R10-2, SBO and FSG-40.5, FLEX Generator Loading And Plant System Operations. It is desired to restore cooling to the MCC, Switchgear, And Miscellaneous Electrical Equipment Area.
4. Initiating Cue: Unit Supervisor directs you the Reactor Operator to perform Step 3 of ONI-SPI E-2, Providing Switchgear Cooling Following A Total Loss Of MCC And Switchgear Ventilation. Steps 1 & 2 have been completed.

Start: _____ **Stop:** _____

Candidate: _____

JPM BODY SHEET

Standard: Performer obtains or simulates obtaining all materials, procedures, tools, keys, radios, etc... before performing task.

Standard: Performer follows management expectations with regards to safety and communication standards.

Step 1**ONI-SPI E-2, Providing Switchgear Cooling Following A Total Loss Of MCC And Switchgear Ventilation**

3.0 AT IB 620' Panel 1H51-P038, PERFORM the following to start the Smoke Clearing fans:

3.1 VERIFY the DIVISION 1 selector switch in the DIV 1 CABLE SP AREA AND MCC RM position.

Critical Step: Simulates placing Division 1 selector switch in the DIV 1 CABLE SP AREA AND MCC RM position.

Instructor Cue: When Candidate simulates placing selector switch to DIV 1 CABLE SP AREA AND MCC RM position, acknowledge action.

Notes: None.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 2

3.2 TAKE the SMOKE VENT SYS FAN A to START. 1M49-C001A

Critical Step: Simulates taking SMOKE VENT SYS FAN A to START.

Instructor Cue: When Candidate simulates starting Fan A, acknowledge action.

Notes: After Candidate simulates starting Fan A, hold up Picture #1.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 3

3.3 VERIFY the CBL SP AND MCC RM DAMPER opens. 1M49-F010A

Standard: Candidate observes damper has opened.

Instructor Cue: None

Notes: Hold up Picture 1 to show Div. 1 Selector switch in Div. 1 Cable position and Fan A switch in ON and F010A damper red light on.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 4

- 3.4 VERIFY the DIVISION 2 selector switch in the DIV 2 CABLE SP AREA AND MCC RM position.

Critical Step: Simulates placing DIVISION 2 selector switch in the DIV 2 CABLE SP AREA AND MCC RM position.

Instructor Cue: When Candidate simulates placing selector switch to DIV 2 CABLE SP AREA AND MCC RM position, acknowledge action.

Notes: None

SAT ____ **UNSAT** ____

Comment(s): _____

Step 5

- 3.5 TAKE the SMOKE VENT SYS FAN B to START. 1M49-C001B

Critical Step: Simulates taking SMOKE VENT SYS FAN B to START.

Instructor Cue: When Candidate simulates starting Fan B, acknowledge action.

Notes: Hold up Picture 2 to show Div. 2 Selector switch in Div. 2 Cable position and Fan B switch in ON and F010B damper red light on.

SAT ____ **UNSAT** ____

Comment(s): _____

Step 6

- 3.6 **VERIFY** the CBL SP AND MCC RM DAMPER opens. 1M49-F010B
4.0 **IF** additional cooling is required, **THEN PERFORM** the following:

Standard: Candidate observes damper has opened.

Instructor Cue: If Candidate asks, no additional cooling is required.

Notes: Hold up Picture 2 to show Div. 2 Selector switch in Div. 2 Cable position
 and Fan B switch in ON and F010B damper red light on.
 Terminate the JPM

SAT ____ **UNSAT** ____

Comment(s): _____

Terminating Cue: Both fans of the Smoke Clearing System are running to provide
 cooling to MCC and Cable Spreading rooms.

Evaluation Results: **SAT** _____ **UNSAT** _____

End Time: _____

JPM CUE SHEET

INITIAL CONDITIONS:	<p>Plant operating in ONI-R10-2, SBO and FSG-40.5, FLEX Generator Loading And Plant System Operations.</p> <p>It is desired to restore cooling to the MCC, Switchgear, And Miscellaneous Electrical Equipment Area.</p>
INITIATING CUE:	<p>Unit Supervisor directs you the Reactor Operator to perform Step 3 of ONI-SPI E-2, Providing Switchgear Cooling Following A Total Loss Of MCC And Switchgear Ventilation.</p> <p>Steps 1 & 2 have been completed:</p>