

WATTS BAR NUCLEAR PLANT

B.1.a

ALTERNATE PATH.

B.1.a Withdraw Shutdown Banks.

WATTS BAR NUCLEAR PLANT

B.1.a

Task: Withdraw Shutdown Banks.

Alternate Path: Following failure of the group step counters, the reactor trip breakers are opened in accordance with Technical Requirement 3.1.7.

Facility JPM #: B.1.a 2009 May NRC Exam.

K/A Rating(s): 001 Control Rod Drive System. A3.05, Ability to monitor automatic operation of the CRDS, including: Individual vs. group rod position. [3.5/3.5] (CFR: 41.7/45.13)

Task Standard: Withdrawal of shutdown banks is initiated starting with Shutdown Bank A.

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator X In-Plant _____

Perform X Simulate _____

References: SOI-85.01, "Control Rod Drive and Position Indication System," Rev. 38.
TR 3.1.7, "Reactivity Control Systems, Position Indicating System - Shutdown."
AOI-2, "Malfunction of Reactor Control System," Rev. 37.

Task Number: RO-085-SOI-85-001
RO-085-SOI-85-010

APPLICABLE FOR: RO/SRO

10CFR55.45: CFR: 41.7/45.13

Validation Time: 10 min. **Time Critical:** No

=====
Applicant: _____ Time Start: _____
NAME SSN Time Finish: _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ____

Examiner: _____ / _____
NAME SIGNATURE DATE

=====
COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.a

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC **311**.

a. Ensure the following items are displayed on the Director Summary Page:

rd19	Shutdown bank a demand counter fails	0
-------------	--------------------------------------	---

b. Load NRC_Exam_Event_Files.evt from the NRC Exam Flash Drive. Event 20 is set when Shutdown Bank A reaches 110 steps. Malfunction rd19 will enter at this event.

c. Place the simulator in RUN momentarily, and reset the High Flux at Shutdown alarm, and then acknowledge all alarms

3. ENSURE 1-NR-92-145 Recorder is selected to Source Range N31 and Intermediate Range N35.

4. Freeze simulator until the applicant indicates understanding of the task and time is allowed for control board familiarization.

5. After applicant indicates understanding of task, place simulator in run.

Tools/Equipment/Procedures Needed:

Marked copy of SOI-85.01, indicating steps have been performed to Section 5.4, Step 6.

WATTS BAR NUCLEAR PLANT

B.1.a

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A unit startup is in progress following a trip from 100% power due to a generator electrical relay malfunction that occurred 6 days ago.
2. Per the Nuclear Operating Book (NOB), Sheet 7 BANK OVERLAP AND ROD INSERTION LIMITS, the shutdown banks fully withdrawn position is 230 steps.
3. GO-2, "Reactor Startup," Section 3.2 "Actions Performed Before Startup," is complete to Step [13.10], WITHDRAW Shutdown Rods to fully withdrawn per SOI-85.01.
4. The US/SRO has approved shutdown bank withdrawal.
5. SOI-85.01, "Control Rod Drive and Indication System," is being performed and is complete to through Section 5.4, Step 5.
6. All reactivity briefs required by SPP-10.4, "Reactivity Management Program" have been completed.

INITIATING CUES:

1. You are to continue the performance of SOI-85.01 at Section 5.4 Step 6, and withdraw the shutdown banks.
2. Notify the SRO when the shutdown banks are fully withdrawn.

WATTS BAR NUCLEAR PLANT

B.1.a

START TIME: _____

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 1.:</u> Obtain the appropriate procedure.</p> <p><u>STANDARD:</u> Applicant identifies SOI-85.01 and goes to Section 5.4 "Shutdown Banks Withdrawal."</p> <p>Evaluator Cue: Hand marked-up copy of SOI-85.01 to the Applicant after the Applicant successfully identifies the procedure and section.</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [6] ENSURE 1-RBSS, ROD BANK SELECTOR SWITCH [1-M-4], in MANUAL.</p> <p><u>STANDARD:</u> Applicant ensures that the Rod Bank Selector Switch RBSS-1 is in MANUAL position.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> [7] OBTAIN SRO Approval to withdraw Shutdown Banks.</p> <p><u>STANDARD:</u> If requested, state that SRO approval has been granted.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.a

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> [8] OBSERVE the following for proper response during Bank Withdrawal:</p> <p>A. Source Range (SR) _____</p> <p>B. Intermediate Range (IR) _____</p> <p>C. Startup Meters _____</p> <p>D. Nuclear Recorders _____</p> <p><u>STANDARD:</u> Applicant monitors above parameters as the rods are being withdrawn.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [9] SELECT SD Bank A (SBA) on ROD BANK SELECTOR SWITCH, 1-RBSS.</p> <p><u>STANDARD:</u> Applicant places Rod Bank Selector switch RBSS-1 in SBA position.</p> <p><u>COMMENTS:</u></p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> [10] PLACE 1-FLRM, IN-HOLD-OUT SWITCH, to OUT to begin withdrawing Shutdown Banks A1 and A2 to greater than or equal to 225 Steps.</p> <p><u>STANDARD:</u> Applicant places 1-FLR to the OUT position and monitors shutdown bank A group A1 and A2 are responding.</p> <p><u>COMMENTS:</u></p>	<p><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.a

<u>STEP/STANDARD</u>	<u>SAT/UNSAT</u>
<p><u>STEP 7:</u> [11] MONITOR the following as the Bank is being withdrawn:</p> <ul style="list-style-type: none"> A. Group Step Counters B. RPIs C. "In-Out" Status Lights D. Rod speed (64 Steps/Minute) <p><u>STANDARD:</u> Applicant monitors parameters as the rods are being withdrawn.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>Note to evaluator: Malfunction to fail step counters is to be inserted when Shutdown Bank A rods reach approximately 110 steps. Applicant may refer to TR-3.1.7. If so, the required action is to open the Reactor Trip breakers.</p>	
<p>NOTE TO EVALUATOR: If applicant has identified the failure and informs the evaluator, cue the applicant to "take your appropriate actions."</p>	
<p><u>STEP 9:</u> Open the Reactor Trip Breakers.</p> <p><u>STANDARD:</u> Applicant determines the Group 1 step counter is not capable of determining the demand position for each of the Shutdown bank A rods within ± 2 steps and opens the reactor trip breakers.</p> <p>Cue: After the reactor trip breakers have been opened state "This completes this JPM."</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;"><u>Critical Step</u></p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

WATTS BAR NUCLEAR PLANT

B.1.b

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A unit startup is in progress following a trip from 100% power due to a generator electrical relay malfunction that occurred 6 days ago.
2. Per the Nuclear Operating Book (NOB), Sheet 7 BANK OVERLAP AND ROD INSERTION LIMITS, the shutdown banks fully withdrawn position is 230 steps.
3. GO-2, "Reactor Startup," Section 3.2 "Actions Performed Before Startup," is complete to Step [13.10], WITHDRAW Shutdown Rods to fully withdrawn per SOI-85.01.
4. The US/SRO has approved shutdown bank withdrawal.
5. SOI-85.01, "Control Rod Drive and Indication System," is being performed and is complete to through Section 5.4, Step 5.
6. All reactivity briefs required by SPP-10.4, "Reactivity Management Program" have been completed.

INITIATING CUES:

1. You are to continue the performance of SOI-85.01 at Section 5.4 Step 6, and withdraw the shutdown banks.
2. Notify the SRO when the shutdown banks are fully withdrawn.

WATTS BAR NUCLEAR PLANT
B.1.b

B.1.b Place Excess Letdown in Service per AOI-6.

WATTS BAR NUCLEAR PLANT B.1.b

EVALUATION SHEET

Task: Place Excess Letdown in Service per AOI-6.

Alternate Path: N/A

Facility JPM #: 3-OT-JPMR022 Rev 3.

K/A Rating(s): 004 Chemical and Volume Control System. A4.06 Ability to manually operate and/or monitor in the control room: Letdown isolation and flow control valves. [3.6/3.1]. (CFR: 41/7 / 45.5 to 45.8).

Task Standard: Excess letdown has been placed in service per AOI-6, "Small Reactor Coolant System Leak," Step 15.

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant

Perform Simulate

References: AOI-6, "Small Reactor Coolant System Leak," Rev 32.

Task Number: RO-062-SOI-62-007
RO-068-AOI-6-001

APPLICABLE FOR: RO/SRO

10CFR55.45: 6, 12

Validation Time: 10 min. **Time Critical:** No

Applicant: _____
NAME

SSN

Time Start: _____
Time Finish: _____

Performance Rating: SAT ____ UNSAT ____

Performance Time ____

Examiner: _____
NAME

SIGNATURE

DATE

COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.b

WATTS BAR NUCLEAR PLANT

B.1.b

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC 312.
 - a. Ensure following letdown and charging isolation valves are closed.
 - a. 1-FCV-62-72.
 - b. 1-FCV-62-73.
 - c. 1-FCV-62-74.
 - d. 1-FCV-62-76.
 - e. 1-FCV-62-69.
 - f. 1-FCV-62-70.
 - g. 1-FCV-62-85.
 - h. 1-FCV-62-86.
 - i. 1-FCV-62-90.
 - j. 1-FCV-62-91.
 - b. Ensure 1-FCV-62-93 is in manual and seal flow is stable at approximately 8 gpm per RCP seal.
 - c. Ensure pressurizer level is approximately 66% and rising slowly.
2. Acknowledge all alarms.
3. Place simulator in FREEZE until the applicant indicates an understanding of the task.
4. After applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

A marked up copy of AOI-6, signed off through Step 14, with Step 15 CIRCLED.

WATTS BAR NUCLEAR PLANT

B.1.b

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The Unit is operating at 100% power.
2. A small leak has been found on the normal letdown path.
3. Letdown and Charging have been isolated per AOI-6, "Small Reactor Coolant System Leak."
4. The RADPRO Supervisor has been informed of the intent to establish Excess Letdown.
5. You are the Operator at the Controls.

INITIATING CUES:

1. The Unit Supervisor has directed you to establish excess letdown to the VCT per AOI-6, "Small Reactor Coolant System Leak." Section 3.0, and Step 15, **RESPONSE NOT OBTAINED.**
2. You are to notify the Unit Supervisor when excess letdown has been aligned and pressurizer level is under control.

WATTS BAR NUCLEAR PLANT

B.1.b

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> A copy of AOI-6 has been obtained.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> Check pressurizer level DROPPING or STABLE.</p> <p><u>STANDARD:</u> Applicant observes a RISING trend on pressurizer level and enters RESPONSE NOT OBTAINED column for actions.</p> <p>NOTE: Use of the RNO Column was directed by the INITIATING CUES.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> If pZR level is rising, THEN PLACE excess letdown in service.</p> <p><u>STANDARD:</u> Applicant enters the RESPONSE NOT OBTAINED column and begins procedure actions.</p> <p>NOTE: Use of the RNO Column was directed by the INITIATING CUES.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.b

<p><u>STEP 4:</u> a. OPEN 1-FCV-70-143</p> <p><u>STANDARD:</u> At panel 1-M-27B the applicant places 1-HS-70-143A to OPEN. Applicant verifies the RED light is LIT and the GREEN light is OFF. Step is critical to establish excess letdown flow.</p> <p><u>NOTE:</u> When the applicant opens 1-FCV-70-143, Annunciator 239-D will be received. This alarm occurs whenever 1-FCV-70-143 is OPEN and flow on 1-FS-70-8 is less than 230 gpm.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 5:</u> b. OPEN 1-FCV-70-85</p> <p><u>STANDARD:</u> At panel 1-M-27B the Applicant places 1-HS-70-85A to OPEN and holds the switch to OPEN until the RED light is LIT and the GREEN light is OFF. Step is critical to establish excess letdown flow.</p> <p><u>NOTE:</u> When the applicant opens 1-FCV-70-85, Annunciator 239-D will clear as soon as flow is greater than 230 gpm Applicant may use 1-FI-70-84 (panel 1-M-27B) to monitor flow.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 6:</u> c. OPEN 1-FCV-62-54</p> <p><u>STANDARD:</u> At panel 1-M-5 the applicant places 1-HS-62-54 to OPEN and holds the switch to OPEN until the RED light is LIT and the GREEN light is OFF. Step is critical to establish excess letdown flow.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.b

<p><u>STEP 7:</u> d. OPEN 1-FCV-62-55</p> <p><u>STANDARD:</u> At panel 1-M-5 the applicant places 1-HS-62-55 to OPEN and holds the switch to OPEN until the RED light is LIT and the GREEN light is OFF. Step is critical to establish excess letdown flow.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> e. ENSURE 1-FCV-62-59 is in NORMAL.</p> <p><u>STANDARD:</u> At panel 1-M-5 the applicant determines that 1-HS-62-59A is in the NORM position, with the RED seal return light LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> f. ADJUST 1-HIC-62-56A to obtain maximum flow and maintain excess letdown hx outlet temp less than 200°F.</p> <p><u>STANDARD:</u> At panel 1-M-5 the applicant opens 1-HIC-62-56A while monitoring 1-TI-62-58. Excess letdown temperature must remain below 200°F as indicated on 1-TI-62-58. Step is critical to establish excess letdown flow.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.b

<p><u>STEP 10:</u> STABILIZE pZR level by adjusting seal injection and excess letdown flows.</p> <p><u>STANDARD:</u> At panel 1-M-5 the applicant observes pZR level trend on 1-LR-68-339. Applicant may also set up a trend of pZR level on ICS computer using inputs from 1-LI-68-339A, 1-LI-68-335A and 1-LI-68-320.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> Notify the Unit Supervisor that Excess Letdown has been placed in service.</p> <p><u>STANDARD:</u> The Unit Supervisor has been notified that Excess Letdown has been placed in service.</p> <p style="padding-left: 40px;">**CUE: When notified, acknowledge the report.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center; margin-top: 20px;"><u>END OF TASK</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME: _____

WATTS BAR NUCLEAR PLANT

B.1.c

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task.

INITIAL CONDITIONS:

1. The Unit is operating at 100% power.
2. A small leak has been found on the normal letdown path.
3. Letdown and Charging have been isolated per AOI-6, "Small Reactor Coolant System Leak."
4. The RADPRO Supervisor has been informed of the intent to establish Excess Letdown.
5. You are the Operator at the Controls.

INITIATING CUES:

1. The Unit Supervisor has directed you to establish excess letdown to the VCT per AOI-6, "Small Reactor Coolant System Leak." Section 3.0, and Step 15, **RESPONSE NOT OBTAINED.**
2. You are to notify the Unit Supervisor when excess letdown has been aligned and pressurizer level is under control.

WATTS BAR NUCLEAR PLANT
B.1.c

ALTERNATE PATH.

B.1.c Isolate Cold Leg Accumulators per E-1.

WATTS BAR NUCLEAR PLANT

B.1.c

WATTS BAR NUCLEAR PLANT

B.1.c

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC **313**.

a. Ensure the following items are displayed on the Director Summary Page:

th03a	loca-small leak loop 1	100% severity
th01a	loca-hot leg loop 1	4.5% severity
hs-63-67a	hs-63-67a sis accumulator tank 4 flow isolation valve	Open

b. Ensure that the following remote is set as indicated on the Director Remote Page.

sir01	pwr to cold leg accumu isolation valves fcv-63-67, 80, 98, 119	on
--------------	--	----

c. Place the simulator in RUN momentarily, and acknowledge all alarms.

4. Place simulator in FREEZE until the Applicant indicates an understanding of the task.

3. After Applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

A marked-up copy of E-1, signed off through Step 25, with Step 26 circled.

WATTS BAR NUCLEAR PLANT

B.1.c

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A large break LOCA has occurred.
2. E-1, "Loss of Reactor or Secondary Coolant," performance has just been resumed after performance of ES-1.3, "Transfer to Containment Sump."
3. You are the Control Room Operator.

INITIATING CUES:

1. The Unit Supervisor directs you perform E-1, "Loss of Reactor or Secondary Coolant," Step 26, DETERMINE if cold leg accumulators should be isolated.
2. You are to notify the Unit Supervisor when you have completed Step 26.

WATTS BAR NUCLEAR PLANT

B.1.c

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> A copy of E-1 has been obtained</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the examiner will provide a marked-up copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> a. ENSURE power to isolation valves restored USING Appendix A (E-1), CLA Breaker Operation.</p> <p><u>STANDARD:</u></p> <p>EXAMINER'S CUE: <i>When asked, inform the applicant that E-1 Appendix A CLA BREAKER OPERATION is complete.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.c

<p><u>STEP 3:</u> b. CHECK RCS pressure less than 250 psig.</p> <p><u>STANDARD:</u> Applicant reads RCS pressure from one of the following PAM instruments and determines that pressure is approximately 70 psig.</p> <p style="padding-left: 40px;">RVLIS-ICCM PLASMA DISPLAY on 1-M-4 or 1-M-6. Loop 4 HL PRESS 1-PI-68-70. Loop 3 HL PRESS 1-PI-68-64. Loop 2 HL Press 1-PI-68-63.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 4:</u> c. CLOSE cold leg accumulator isolation valves.</p> <p><u>STANDARD:</u> Applicant places 1-HS-63-118, 1-HS-63-98, 1-HS-63-80 and 1-HS-63-67 to close. Applicant observes that 1-HS-63-67 indicating lights do not change, indicating that 1-FCV-63-67, CLA 4 Isolation valve remains OPEN. Step is critical since this action is taken to minimize the chance of nitrogen injection into the RCS.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 5:</u> c. <u>RESPONSE NOT OBTAINED PERFORM</u> the following:</p> <p><u>STANDARD:</u> Applicant determines that RNO actions are required since 1-FCV-63-67 did NOT CLOSE.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.c

STEP 6: 1) **RESET** Phase B

STANDARD:

Applicant observes the Phase B lights on the Master Isolation Signal Status panels 1-XX-55-6C and 1-XX-55-6D on 1-M-6 are LIT, indicating that Phase B has been actuated.

_____ Applicant depresses 1-HS-30-64D ϕ B CNTMT ISOL RESET TR-A, and observes the ϕ B light goes DARK on 1-XX-55-6C
Substep is critical since this action is taken to allow the air supply to the nitrogen makeup and vent valves to be restored.

_____ Applicant depresses 1-HS-30-64E ϕ B CNTMT ISOL RESET TR-B, and observes the ϕ B light goes DARK 1-XX-55-6D.
Substep is critical since this action is taken to allow the air supply to the nitrogen makeup and vent valves to be restored.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

WATTS BAR NUCLEAR PLANT

B.1.c

STEP 7: 2) **ENSURE** aux air pressure to cntmt is greater than 75 psig [M-15] **AND OPEN** cntmt air supply valves.

STANDARD:

Applicant observes air pressure on 0-PI-32-104A, Aux Air A Press and 0-PI-32-105A, Aux Air Press indicate 95 psig and that 1-FCV-32-80, 1-FCV-32-102, and 1-FCV-32-110 are CLOSED.

_____ Applicant places 1-HS-30-80A in the OPEN position and holds until RED light is LIT, GREEN light is DARK. **Step is critical since this action is taken to allow the air supply to the nitrogen makeup and vent valves to be restored.**

_____ Applicant places 1-HS-30-102A in the OPEN position and holds until RED light is LIT, GREEN light is DARK. **Step is critical since this action is taken to allow the air supply to the nitrogen makeup and vent valves to be restored.**

_____ Applicant places 1-HS-30-110A in the OPEN position and holds until RED light is LIT, GREEN light is DARK. **Step is critical since this action is taken to allow the air supply to the nitrogen makeup and vent valves to be restored.**

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

WATTS BAR NUCLEAR PLANT

B.1.c

<p><u>STEP 8:</u> 3) OPEN any unisolated accumulator's nitrogen makeup valve.</p> <p><u>STANDARD:</u> Applicant determines that 1-FCV-63-63 for CLA 4 must be OPENED.</p> <p>Applicant places 1-HS-63-63A N2 TO CL ACCUM 4 to OPEN position, and verifies RED light is LIT GREEN light is DARK.</p> <p>Step is critical since this action is taken to minimize the chance of nitrogen injection into the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> 4) OPEN 1-FCV-63-65 vent header.</p> <p><u>STANDARD:</u> Applicant rotates 1-HIC-63-65A in the counterclockwise direction to OPEN 1-FCV-63-65 FULLY.</p> <p>Step is critical since this action is taken to minimize the chance of nitrogen injection into the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> Notify the Unit Supervisor that E-1, Step 26 is complete.</p> <p><u>STANDARD:</u> Applicant notifies the Unit Supervisor that Step 26 is complete</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

WATTS BAR NUCLEAR PLANT

B.1.d

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. A large break LOCA has occurred.
2. E-1,"Loss of Reactor or Secondary Coolant,"performance has just been resumed after performance of ES-1.3,"Transfer to Containment Sump."
3. You are the Control Room Operator.

INITIATING CUES:

1. The Unit Supervisor directs you perform E-1,"Loss of Reactor or Secondary Coolant," Step 26, DETERMINE if cold leg accumulators should be isolated.
2. You are to notify the Unit Supervisor when you have completed Step 26.

**WATTS BAR NUCLEAR PLANT
B.1.d**

ALTERNATE PATH.

B.1.d Place RHR Spray in Service per FR-Z.1, “High Containment Pressure.”

WATTS BAR NUCLEAR PLANT

B.1.d

WATTS BAR NUCLEAR PLANT

B.1.d

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC 314.
 - a. Ensure the following items are displayed on the Director Summary Page:

th03a	loca-small leak loop 1	100% severity
th01a	loca-hot leg loop 1	4.5% severity
ch01a	containment pressure transmitter failure pdt-3-42	14
ch01b	containment pressure transmitter failure pdt-3-43	14
ch01c	containment pressure transmitter failure pdt-3-44	14
ch01d	containment pressure transmitter failure pdt-3-45	14
ei-72-12a	07020 cntmt spray pmp b amps	35
fi-72-13	07010 cntmt spray pmp b flow	3000
hs-72-10a-3	06010 cntmt spray pump b mtr sw(red)	on
hs-72-10a-1	06010 cntmt spray pump b mtr sw(green)	off
hs-72-27a-1	06020 cntmt spray pump a mtr sw(green)	off
pdi-30-42	03160 cntmt press diff indicator	12
pdi-30-43	03170 cntmt press diff indicator	12
pdi-30-44	03180 cntmt press diff indicator	12
pdi-30-45	03190 cntmt press diff indicator	12
pdr-30-133-1	03150 cntmt annulus dp indicator	0.5
hs-72-10a	hs-72-10a containment spray pump b mtr sw	ptlock
hs-63-94a	Hs-63-94a rhr to rcs cl1_4 flow control valve s	open

- b. Place the simulator in RUN momentarily, and acknowledge all alarms.
2. Place Hold Order on 1A CS Pump - handswitch is in PULL-TO-LOCK position
3. Place simulator in FREEZE until the applicant indicates an understanding of the task.
4. After applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

Ensure marked copies of FR-Z.1 are available to the evaluators.

WATTS BAR NUCLEAR PLANT

B.1.d

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. 1A-A Containment Spray Pump has been tagged out of service.
2. The unit was at 100% when a Large Break LOCA occurred.
3. 1B-B Containment Spray Pump started and has been spraying containment.
4. The break occurred an hour and 10 minutes ago.
5. All ECCS equipment is performing its design functions and is on Containment Sump Recirc.
6. You are the Operator at the Controls (OAC).

INITIATING CUES:

1. The Unit Supervisor directs you to perform FR-Z.1, "HIGH CONTAINMENT PRESSURE," Step 10, DETERMINE if RHR spray should be placed in service.
2. You are to notify the Unit Supervisor when you have completed Step 10.

WATTS BAR NUCLEAR PLANT

B.1.d

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> A copy of FR-Z.1 has been obtained.</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator will provide a marked-up copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [Step 10] DETERMINE if RHR Spray should be placed in service:</p> <p>a. CHECK the following conditions:</p> <ul style="list-style-type: none"> • At least one hour elapsed since beginning of the accident. • Cntmt Press greater than 9.5 psig. • RHR suction aligned to the cntmt sump. • At least one charging pump and one SI pump running <p><u>STANDARD:</u></p> <ol style="list-style-type: none"> 1. Applicant has determined that an hour has lapsed since the beginning of the accident. [Given in initial conditions] 2. Cntmt press has been checked > 9.5 psig. 3. FCV-63-72 and FCV-63-73 verified to be open by red indicating lights. 4. 1 CCP & 1 SIP verified to be running by indicating lights or amps. <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.d

<p><u>STEP 3:</u> [STEP 10b] ALIGN Train B RHR spray: 1) ENSURE Train B RHR pump RUNNING.</p> <p><u>STANDARD:</u> Train B RHR pump verified to be running by indicating light or amps.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> [STEP 10b 2)] Close RHR crosstie 1-FCV-74-35.</p> <p><u>STANDARD:</u> 1-HS-74-35-A has been checked in the CLOSED position and the green light illuminated on HS.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [STEP 10b 3)] CLOSE RHR injection 1-FCV-63-94.</p> <p><u>STANDARD:</u> 1-HS-63-94-A has been placed in the CLOSED position and the Applicant recognizes that the GREEN light DOES NOT illuminate. Applicant enters the RNO Column to perform actions to align Train A RHR spray. Step is critical since the RHR system is not designed to support both RHR spray and suction requirements associated with sump recirculation.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>EVALUATOR NOTE: Applicant may either have US dispatch personnel or will dispatch personnel to investigate the cause of the failure of 1-FCV-63-94.</p>	

WATTS BAR NUCLEAR PLANT

B.1.d

<p><u>STEP 6:</u> [STEP 10b RNO] ALIGN Train A RHR spray: 1) ENSURE Train A RHR pump RUNNING.</p> <p><u>STANDARD:</u> Train A RHR pump verified to be running by indicating light or amps.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> [STEP 10b RNO] 2) CLOSE RHR crosstie 1-FCV-74-33.</p> <p><u>STANDARD:</u> 1-HS-74-33-A has been placed/checked in the CLOSED position and the green light illuminated on HS.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> [STEP 10b RNO] 3) CLOSE RHR injection 1-FCV-63-93.</p> <p><u>STANDARD:</u> 1-HS-63-93-A has been placed in the CLOSED position and the green light illuminated on HS. Step is critical to establish A Train RHR Spray.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> [STEP 10b RNO] 4) OPEN RHR spray 1-FCV-72-40.</p> <p><u>STANDARD:</u> 1-HS-72-40A has been placed/checked in the OPEN position and the Red light illuminated on hand switch. Step is critical to establish A Train RHR Spray.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.d

<p><u>STEP 10:</u> Notify the Unit Supervisor that RHR spray is in service.</p> <p><u>STANDARD:</u> Notify the Unit Supervisor that RHR spray has been placed in service.</p> <p>**CUE: When notified, acknowledge the report using repeat back.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>
---	---------------------------------

TIME STOP: _____

WATTS BAR NUCLEAR PLANT

B.1.e

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task.

INITIAL CONDITIONS:

1. 1A-A Containment Spray Pump has been tagged out of service.
2. The unit was at 100% when a Large Break LOCA occurred.
3. 1B-B Containment Spray Pump started and has been spraying containment.
4. The break occurred an hour and 10 minutes ago.
5. All ECCS equipment is performing its design functions and is on Containment Sump Recirc.
6. You are the Operator at the Controls (OAC).

INITIATING CUES:

1. The Unit Supervisor directs you to perform FR-Z.1, "HIGH CONTAINMENT PRESSURE", Step 10, DETERMINE if RHR spray should be placed in service.
2. You are to notify the Unit Supervisor when you have completed Step 10.

WATTS BAR NUCLEAR PLANT

B.1.e

B.1.e Place Containment Hydrogen Recombiner “A” in Service per SOI-83.01, “Containment Hydrogen Recombiners.”

WATTS BAR NUCLEAR PLANT

B.1.e

Task: Place Containment Hydrogen Recombiner A in Service per SOI-83.01, "Containment Hydrogen Recombiners."

Alternate Path: N/A

Facility JPM #: 3-OT-JPMR052.

K/A Rating(s): 028 Hydrogen Recombiner and Purge Control System. A2.01 Hydrogen recombinder power setting, determined by using plant data book. [3.4/3.6] (CFR: 41.5 / 43.5 / 45.3 / 45.13).

Task Standard: Containment Hydrogen Recombiner A has been placed in service per SOI-83.01, "Containment Hydrogen Recombiners."

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant

Perform Simulate

References: E-1, "Loss of Reactor or Secondary Coolant," Rev. 15.
SOI-83.01, "Containment Hydrogen Recombiners," Rev. 15.
TI-83.01, "Hydrogen Recombiner Required Power-vs.-Containment Pressure Curves," Rev. 1.

Task Number: RO-063-SOI-63-003

APPLICABLE FOR: RO/SRO

10CFR55.45: 5, 6

Validation Time: 15 min. **Time Critical:** No

Applicant: _____
NAME

SSN

Time Start: _____
Time Finish: _____

Performance Rating: SAT ____ UNSAT ____

Performance Time ____

Examiner: _____
NAME

SIGNATURE

DATE

COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.e

WATTS BAR NUCLEAR PLANT

B.1.e

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC **315**.
 - a. Ensure the following items are displayed on the Director Summary Page:

th03a	loca-small leak loop 1	100% severity
th01a	loca-hot leg loop 1	4.5% severity
mux_03c123	125-a cntmt hi-hi press steamline isol	on
pi-30-310	03110 containment pressure	3.5
pi-30-311	03120 containment pressure	3.5
h2i-43-200	03060 loca h2 cntmt monitor	3.5
h2i-43-210	03070 loca h2 cntmt monitor	3.5
pdi-30-42	03160 cntmt press diff indicator	4
pdi-30-43	03170 cntmt press diff indicator	4
pdi-30-44	03180 cntmt press diff indicator	4
pdi-30-45	03190 cntmt press diff indicator	4

- b. Place the simulator in RUN momentarily, and acknowledge all alarms.
2. Place simulator in FREEZE until the applicant indicates an understanding of the task.
3. After applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

Ensure copies of SOI-83.01 "Containment Hydrogen Recombiners," and TI-83.01, "Hydrogen Recombiner Required Power-vs.-Containment Pressure."

WATTS BAR NUCLEAR PLANT

B.1.e

READ APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit has experienced a LOCA.
2. MCR crew is implementing E-1, "Loss of Reactor or Secondary Coolant."
3. E-1, directs that the hydrogen recombiners be placed in service using SOI-83.01, "Containment Hydrogen Recombiners."
4. You are the Control Room Operator.

INITIATING CUES:

1. The Unit Supervisor has directed you to place Hydrogen Recombiner "A" in service, using SOI-83.01, Containment Hydrogen Recombiners."
2. Notify the Unit Supervisor when the required power setting is reached.

WATTS BAR NUCLEAR PLANT

B.1.e

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> Obtains SOI-83.01 and goes to Section 8.1.</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION 1 Temperature of 1400°F is not to be exceeded on any operable thermocouple.</p> <p>CAUTION 2 On DG power, DG load should remain 4400 kW or less.</p> <p>CAUTION 3 If there is any indication Recombiner A is not operating properly (through recombining instrumentation), the Recombiner should be shutdown, a WR written, and the other Recombiner placed in service.</p>	
<p>NOTE: TI-83.01, "HYDROGEN RECOMBINER REQUIRED POWER-VS-CONTAINMENT PRESSURE" contains the curves that will be needed to adjust the power level for the recombining.</p>	
<p><u>STEP 2:</u> [1] ENSURE POWER ADJUST potentiometer [1-M-10] set at 000.</p> <p><u>STANDARD:</u> Applicant verifies that three zeros ("000") are indicated on Panel 1-M-10.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT**B.1.e**

<p><u>STEP 3:</u> [2] VERIFY the White POWER IN AVAILABLE light LIT.</p> <p><u>STANDARD:</u> Applicant verifies that the White POWER IN AVAILABLE light LIT on 1-M-10.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> [3] ENSURE TEMPERATURE CHANNEL (thermocouple selector) is selected for channel 1, 2, or 3.</p> <p><u>STANDARD:</u> Applicant verifies that the TEMPERATURE CHANNEL (thermocouple selector) is selected for channel 1, 2, or 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [4] ENSURE TEMPERATURE OUT (indicator dial), set on 1400°F.</p> <p><u>STANDARD:</u> Applicant verifies that the TEMPERATURE OUT (indicator dial), set on 1400°F.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE: Red light on TEMPERATURE OUT (indicator dial) is lit when setpoint selected on indicator is reached.</p>	

WATTS BAR NUCLEAR PLANT

B.1.e

<p><u>STEP 6:</u> [5] REQUEST Chemistry to sample containment atmosphere for H2 concentration.</p> <p><u>STANDARD:</u> Applicant contacts Chemistry to sample containment atmosphere.</p> <p>EVALUATOR CUE: <i>Containment atmosphere has been sampled and the hydrogen concentration is 3.5%.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> [6] RECORD the Date and Time on Data Sheet 1.</p> <p><u>STANDARD:</u> Applicant records Date and Time on Data Sheet 1</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.e

<p><u>STEP 8:</u> [7] RECORD CNTMT H2 % on Data Sheet 1, THEN INDICATE from which source H2 percentage was obtained:</p> <p>[7.1] ANAL A CNTMT H2,1-H21-43-200 [1-M-10]</p> <p>[7.2] ANAL B CNTMT H2, 1-H21-43-210 [1-M-10]</p> <p>[7.3] Chemistry sample analysis</p> <p><u>STANDARD:</u> Applicant has data available from each of the sources and may enter a value for any of them. The containment hydrogen concentration is 3.5%.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> [8] IF containment H2 is greater than 5%, THEN DO NOT place H2 Recombiner in service, and NOTIFY the SM.</p> <p><u>STANDARD:</u> Applicant confirms that hydrogen concentration is less than 5% and enters N/A for this step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.e

<p><u>STEP 10:</u> [9] RECORD CNTMT PRESS (psig) on Data Sheet 1, THEN INDICATE which indicator was used:</p> <p style="padding-left: 40px;">[9.1] 1-PI-30-310, CNTMT WR PRESS [1-M-9]</p> <p style="padding-left: 40px;">[9.2] 1-PI-30-311, CNTMT WR PRESS [1-M-9]</p> <p><u>STANDARD:</u> Applicant enters a value of 3 psig for either pressure indicator.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> [10] TURN POWER OUT (MS Starter) switch to ON, and VERIFY switch plate Red light LIT.</p> <p><u>STANDARD:</u> Applicant places switch in the UP position, and verifies the RED light is LIT. Step is critical since this action provides power to the recombiner.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> [11] ADJUST POWER ADJUST potentiometer clockwise to obtain 5 kW on POWER OUT meter, and MAINTAIN for 10 minutes.</p> <p><u>STANDARD:</u> Applicant adjusts the potentiometer and obtains 5 kW on the POWER OUT meter. Step is critical to warm up the recombiner.</p> <p>EVALUATOR CUE: Time Compression - 10 minutes have elapsed.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.e

<p><u>STEP 13:</u> [12] ADJUST POWER ADJUST potentiometer to obtain 10 kW on POWER OUT meter, and MAINTAIN for 10 minutes.</p> <p><u>STANDARD:</u> Applicant adjusts the potentiometer and obtains 10 kW on the POWER OUT meter. Step is critical to warm up the recombiner.</p> <p>EVALUATOR CUE: <i>Time Compression - 10 minutes have elapsed.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> [13] ADJUST POWER ADJUST potentiometer to obtain 20 kW on POWER OUT meter, and MAINTAIN for 5 minutes.</p> <p><u>STANDARD:</u> Applicant adjusts the potentiometer and obtains 20 kW on the POWER OUT meter. Step is critical to warm up the recombiner.</p> <p>EVALUATOR CUE: <i>Time Compression - 5 minutes have elapsed.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 15:</u> [14] DETERMINE the REQUIRED POWER (kW) based on current CNTMT PRESSURE (psig) using Attachment 3 of TI-83.01, HYDROGEN RECOMBINER REQUIRED POWER-VS-CONTAINMENT PRESSURE CURVES.</p> <p><u>STANDARD:</u> Applicant uses 3 psig containment pressure and reads 70 kW off the Attachment 3 curve in TI-83.01, HYDROGEN RECOMBINER REQUIRED POWER-VS-CONTAINMENT PRESSURE CURVES.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.e

<p>STEP 16: [15] ADJUST POWER ADJUST potentiometer to obtain the REQUIRED POWER (kW) using Attachment 3 of TI-83.01, HYDROGEN RECOMBINER REQUIRED POWER-VS-CONTAINMENT PRESSURE CURVES.</p> <p>STANDARD: Applicant adjusts the potentiometer and obtains 70 kW on the POWER OUT meter. Step is critical to warm up the recombiner.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
--	--

<p>NOTES</p> <ol style="list-style-type: none"> 1) Periodic potentiometer adjustment is necessary to maintain Required Power setting. Temperature is obtained by selecting an average temperature of all operable thermocouples. Temperature should rise to 1150-1400°F in approximately 4 hours depending on initial containment temperature. 2) Recombiner temperature should be allowed to stabilize before making power changes due to the lag time between adjustment and actual temperature change. 3) 1 kW power change is approximately equal to 20°F recombiner temperature change.
--

<p>STEP 17: [16] AFTER recombiner temperature has stabilized for approximately 30 minutes, THEN ADJUST POWER ADJUST potentiometer to maintain 1225 - 1400°F recombiner average temperature.</p> <p>STANDARD:</p> <p>EVALUATOR CUE: <i>Time Compression - 30 minutes have elapsed, and another operator will make adjustments to maintain temperature between 1225 - 1400°F.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
--	------------------------------------

WATTS BAR NUCLEAR PLANT**B.1.e**

<p><u>STEP 18:</u> [17] NOTIFY SRO that Recombiner A is in service and will be monitored at least once every 24 hours per Section 8.2.</p> <p><u>STANDARD:</u> Applicant notifies the SRO that "A" Recombiner is in service.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>
---	---------------------------------

STOP TIME _____

WATTS BAR NUCLEAR PLANT

B.1.f

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit has experienced a LOCA.
2. MCR crew is implementing E-1, "Loss of Reactor or Secondary Coolant."
3. E-1, directs that the hydrogen recombiners be placed in service using SOI-83.01, "Containment Hydrogen Recombiners."
4. You are the Control Room Operator.

INITIATING CUES:

1. The Unit Supervisor has directed you to place Hydrogen Recombiner "A" in service, using SOI-83.01, Containment Hydrogen Recombiners."
2. Notify the Unit Supervisor when the required power setting is reached.

**WATTS BAR NUCLEAR PLANT
B.1.f**

**B.1.f Synchronizing DG 1B-B from the MCR per
SOI-82.02, "Diesel Generator (D/G) 1B-B."**

WATTS BAR NUCLEAR PLANT

B.1.f

WATTS BAR NUCLEAR PLANT

B.1.f

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC # 316. **NOTE: If this JPM is to be run concurrently with B.1.b, Place Excess Letdown in service, then reset to IC # 312.**
2. 1B-B Diesel Generator is running unloaded, after an idle start.
3. Place the simulator in RUN momentarily, and acknowledge all alarms.
4. Place simulator in FREEZE until the Applicant indicates an understanding of the task.
5. After applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

Ensure a marked-up copy of SOI-82.02, "Diesel Generator (D/G) 1B-B" is available to provide to each applicant.

Stop Watch, to time Synchroscope rotation.

WATTS BAR NUCLEAR PLANT

B.1.f

READ TO OPERATOR

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit is at 100% power.
2. Testing is being conducted on 1B-B diesel generator. It is to be paralleled to the shutdown board for a Factory Representative on site.
3. The 1B-B DG is running at rated speed, after performance of SOI-82.02, "Diesel Generator (D/G) 1B-B," Section 8.1.3 Idle Speed to Rated Speed.
4. You are an extra control room operator on shift.

INITIATING CUES:

1. The Unit Supervisor directs you to parallel the 1B-B diesel generator to the 1B-B Shutdown Board per SOI-82.02, "Diesel Generator (D/G) 1B-B" and load it to 4 MWs.
2. SOI-82.02, "Diesel Generator (D/G) 1B-B," Section 8.1.4 Steps 1 through 3 have been performed.
3. You are to inform the Unit Supervisor when the diesel generator is loaded to 4 MWs.

WATTS BAR NUCLEAR PLANT

B.1.f

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the instruction.</p> <p><u>STANDARD:</u> A copy of SOI-82.02 Section 8.1.4 has been obtained.</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [4] PLACE 1-HS-82-48, DG MODE SELECTOR, in PARALLEL. [0-M-26].</p> <p><u>STANDARD:</u> 1-HS-82-48, DG MODE SELECTOR, is placed in PARALLEL. This step is critical for task performance to allow proper operation of voltage regulator & DG speed droop circuits.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.f

<p>STEP 3: [5] ENSURE the following sync switches for 1B-B D/G in OFF.</p>				<p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	
MAINTENANCE 6.9 UNIT BD 1C SYNC SWITCH	0-M-26	OFF	1-HS-57-69	
ALTERNATE CSST C SYNC SWITCH	0-M-26	OFF	1-HS-57-115	
DG SYNC SWITCH	0-M-26	OFF	1-HS-57-74	
NORMAL-CSST D SYNC SWITCH	0-M-26	OFF	1-HS-57-72	
<p><u>STANDARD:</u> Applicant checks listed sync switches in OFF position</p> <p><u>COMMENTS:</u></p>				
<p>STEP 4: [6] PLACE 1-HS-57-74, DG SYNC SWITCH, to SYN.</p> <p><u>STANDARD:</u> 1-HS-57-74, DG SYNC SWITCH, is placed to SYN position. This step is critical to allow synchronization of D/G to 1B-B Shutdown board.</p> <p><u>COMMENTS:</u></p>				<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION: When adjusting speed and voltage care must be taken to prevent overshooting desired values. Voltage control response is approximately five times faster than speed control response.</p>				

WATTS BAR NUCLEAR PLANT

B.1.f

<p><u>STEP 5:</u> [7] MATCH generator Incoming Frequency (1-XI-82-32) with Running Frequency (1-XI-82-33) using 1-HS-82-43, SPEED CONTROL [0-M-26].</p> <p><u>STANDARD:</u> 1-HS-82-43 is used to adjust generator frequency (incoming) on 1-XI-82-32 to match with board frequency (running) on 1-XI-82-33. This step is critical to allow synchronization of D/G to 1B-B Shutdown board.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> [8] MATCH generator Incoming Voltage, (1-EI-82-34) with Running Voltage (1-EI-82-35) using 1-HS-82-42, VOLTAGE REGULATOR [0-M-26].</p> <p><u>STANDARD:</u> 1-HS-82-42 is used to adjust generator voltage on 1-EI-82-34 to match with board voltage on 1-EI-82-35. This step is critical to allow synchronization of D/G to 1B-B Shutdown board.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.f

<p><u>STEP 7:</u> [9] ENSURE DG Frequency and Voltage are MATCHED with 6.9 kV SD Bd, AND ADJUST 1-HS-82-43, SPEED CONTROL, [0-M-26] to obtain desired clockwise rotation (15 or more seconds) on 1-XI-82-31, TRAIN 1B-B SYNCHROSCOPE.</p> <p><u>STANDARD:</u> Applicant verifies running and incoming frequency and voltage are matched and that the synchroscope is moving slowly in the clockwise direction at 15 seconds or more per rotation on the scope. This step is critical to ensure proper DG synchronization that is performed in the next step.</p> <p>NOTE TO EVALUATOR: <i>The applicant may use a stopwatch to time the 15 second rotation. Provide stopwatch if asked.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTES</p> <p>1) Steps 8.1.4[10] through 8.1.4[11.3] may be signed off after completion of Step 8.1.4[11.3]</p> <p>2) Peer checking required on the next step</p>	

WATTS BAR NUCLEAR PLANT

B.1.f

<p>STEP 8: [10] WHEN TRAIN 1B-B SYNCHROSCOPE (1-XI-82-31) reaches 12 o'clock, THEN TURN 1-HS-57-73A, 1914 - DG TO SD 1B-B, to CLOSE.</p> <p>STANDARD: ACB 1914, DG TO SD 1B-B, is closed with 1-HS-57-73A, when the synchroscope reaches 12 o'clock. This step is critical to ensure proper DG synchronization onto 1B-B Shutdown Board.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE Maintain outgoing VARS by periodically adjusting voltage regulator with 1-HS-82-42 while loading DG. Controls should not be operated simultaneously.</p>	
<p>STEP 9: [11] PERFORM the following:</p> <p style="padding-left: 40px;">[11.1] LOAD DG promptly using 1-HS-82-43, SPEED CONTROL to at least 1.1 Megawatts as indicated on 1-EI-82-40A, DG MEGAWATTS (0-M-26).</p> <p>STANDARD: The generator output is increased to ≥ 1.1 MW on 0-EI-82-40A. This step is critical to ensure proper DG loading and avoid reverse power trip.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.f

<p>NOTE DG MEGAVARS may “swing” when the 6.9 KV automatic tap changers engage to stabilize the voltage in the system.</p>	
<p><u>STEP 10:</u> [11.2] PERFORM the following:</p> <p style="padding-left: 40px;">[b] MAINTAIN DG MEGAVARS 0.75 to 1.25 OUTGOING on 1-EI-82-41A, with 1-HS-82-42, VOLTAGE REGULATOR.</p> <p><u>STANDARD:</u> The generator megavars is adjusted to between 0.75 and 1.25 Megavars on 0-EI-82-41A.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>CAUTION Operation of the DG at load of 2.7 MW or less for extended period of time may lead to exhaust fire.</p>	
<p><u>STEP 11:</u> [11.3] PERFORM the following:</p> <p style="padding-left: 40px;">[c] RAISE load to at least 3.3 Megawatts.</p> <p><u>STANDARD:</u> The generator output is raised to >2.7 MW on 0-EI-82-40A. This step is to ensure DG is loaded per task assignment, and the information in the CAUTION is complied with.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.f

<p><u>STEP 12:</u> [11.4] PLACE 1-HS-57-74, DG SYNC SWITCH, to OFF.</p> <p><u>STANDARD:</u> 1-HS-57-74, DG SYNC SWITCH, is placed to OFF</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> [11.5] MAINTAIN DG operation for a minimum of one hour, OR until engine temperatures stabilize.</p> <p><u>STANDARD:</u> Applicant reecognizes that the DG must be run for a minimum of 1 hour, OR until engine temperatures stabilize.</p> <p><i>EVALUATOR CUE: If asked, state temperatures will be monitored locally until they stabilize.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> Notify the Unit Supervisor that DG 1B-B is synchronized to the shutdown board and loaded to 4 MW.</p> <p><u>STANDARD:</u> The Unit Supervisor is notified that DG 1B-B is synchronized to the shutdown board and loaded to 4 MW.</p> <p><i>CUE: As Unit Supervisor, when notified, acknowledge the report.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: _____

WATTS BAR NUCLEAR PLANT

B.1.g

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit is at 100% power.
2. Testing is being conducted on 1B-B diesel generator. It is to be paralleled to the shutdown board for a Factory Rep. on site.
3. The 1B-B DG is running at rated speed, after performance of SOI-82.02, "Diesel Generator (D/G) 1B-B," Section 8.1.3 Idle Speed to Rated Speed.
4. You are an extra control room operator on shift.

INITIATING CUES:

1. The Unit Supervisor directs you to parallel the 1B-B diesel generator to the 1B-B Shutdown Board per SOI-82.02, "Diesel Generator (D/G) 1B-B" and load it to 4 MWs.
2. SOI-82.02, "Diesel Generator (D/G) 1B-B," Section 8.1.4 Steps 1 through 3 have been performed.
3. You are to inform the Unit Supervisor when the diesel generator is loaded to 4 MWs.

WATTS BAR NUCLEAR PLANT

B.1.g

ALTERNATE PATH

B.1.g Return PRM N-42 to Service per AOI-4, "NUCLEAR INSTRUMENTATION MALFUNCTIONS."

WATTS BAR NUCLEAR PLANT

B.1.g

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC 317.
 - a. Ensure the following items are displayed on the Director Summary Page:

rd02	Uncontrolled rod insertion, bank d, group 2	100% severity
-------------	---	---------------

- b. Ensure the switches on 1-M-13 to the "N42" position to defeat Power Range Channel N42 inputs per AOI-4, Attachment 1, and Step 1 a. through f.
 - c. Place the simulator in RUN momentarily, and acknowledge all alarms.
2. Load NRC_Exam_Event_Files.evt from the NRC Exam Flash Drive. The malfunction will be entered when Rod Control Selector Switch is placed in AUTO (Event 23).
3. Place simulator in FREEZE until the applicant indicates an understanding of the task.
4. After Applicant indicates understanding of the task, place simulator to RUN.

Tools/Equipment/Procedures Needed:

Ensure a marked-up copy of AOI-4 is available to the Evaluator and clean copies of AOI-2 in all copies of Abnormal Operating Instructions on the Simulator Floor.

WATTS BAR NUCLEAR PLANT

B.1.g

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. Power Range Monitor N42 failed during last shift.
3. AOI-4 "NUCLEAR INSTRUMENTATION MALFUNCTIONS," Section 3.4. "Power Range Monitor (PRM) Failure," has been completed through Step 16.a.
4. Work Control has notified the MCR that repairs to PRM N42 are complete and the instrument is ready to be returned to service.
5. You are the Operator at the Controls.

INITIATING CUES:

1. The Unit Supervisor has directed you to return PRM N42 to service.
2. You are to notify the US when the control rods have been returned to AUTO.

WATTS BAR NUCLEAR PLANT

B.1.g

START TIME: _____

<p><u>STEP 1:</u> Obtain the correct procedure.</p> <p><u>STANDARD:</u> A copy of AOI-4 has been obtained.</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator will provide a marked-up copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION Allowing at least 5 minutes between any rod control input (i.e., T-avg, T-ref, or NIS) change and placing rods in AUTO, will help prevent undesired control rod movement.</p>	
<p><u>STEP 2:</u> [Step 16b] REFER TO Attachment 1, PRM Function At NIS Rack, step 2.</p> <p><u>STANDARD:</u> Applicant refers to Attachment 1, PRM Function At NIS Rack, Step 2 for restoration of PRM N42.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.g

NOTE TO EVALUATOR: The following steps are from Attachment 1 page 2 of 2, AOI-4.

STEP 3:

[STEP 2] WHEN PRM is ready for return to service, **THEN PERFORM** the following steps:

- a. **PLACE** DETECTOR CURRENT COMPARATOR switch for UPPER SECTION in NORMAL

STANDARD:

Detector Current Comparator Upper Section switch placed to "NORMAL" (Miscellaneous Control & Indication Panel, 1-IDWR-92-N50-G IV)

Step is critical for proper restoration of upper power detector to current comparator.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

STEP 4:

[STEP 2 b] PLACE DETECTOR CURRENT COMPARATOR switch for LOWER SECTION in NORMAL

STANDARD:

Detector Current Comparator Lower Section switch placed to "NORMAL" (Miscellaneous Control & Indication Panel, 1-IDWR-92-N50-G IV).

Step is critical for proper restoration of lower power detector to current comparator.

COMMENTS:

**CRITICAL
STEP**

___ SAT

___ UNSAT

WATTS BAR NUCLEAR PLANT

B.1.g

<p>NOTE: On the following step, annunciator window 66-C, 67-C, 68-C, OR 69-C, N-(#) OVERPOWER ROD STOP BYPASSED, will clear depending on which channel is bypassed.</p>	
<p><u>STEP 5:</u> [STEP 2 c] PLACE ROD STOP BYPASS switch in OPERATE.</p> <p><u>STANDARD:</u> Rod Stop Bypass switch is positioned from “N42” to “OPERATE” (Miscellaneous Control & Indication Panel, 1-IDWR-92-N50-G IV)</p> <p>Step is critical for proper restoration of to enable rod stop interlock protection from this channel.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 6:</u> [STEP 2 d] PLACE POWER MISMATCH BYPASS switch in OPERATE.</p> <p><u>STANDARD:</u> Power Mismatch Bypass switch is positioned from “N42” to “OPERATE” (Miscellaneous Control & Indication Panel, 1-IDWR-92-N50-G IV)</p> <p>Step is critical to restore channel input to high auctioneering circuit and power mismatch circuits.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.g

<p>NOTE: On the following step, annunciator window 82-E, NIS CHANNEL IN TEST, will clear.</p>	
<p><u>STEP 7:</u> [STEP 2 e] PLACE COMPARATOR CHANNEL DEFEAT switch in NORMAL.</p> <p><u>STANDARD:</u> Comparator Channel Defeat Switch is positioned to “NORMAL” (Comparator & Rate Panel, Comparator N37, 1-IDWR-92-N37 IV).</p> <p> Step is critical to restore channel input to channel comparator alarm circuits.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>NOTE: On the following step, annunciator window 115-E, POWER RANGE FLUX RATE HI, will clear if the positive rate trip light is LIT.</p>	
<p><u>STEP 8:</u> [STEP 2 f] IF POSITIVE RATE TRIP is LIT, THEN RESET RATE MODE switch.</p> <p><u>STANDARD:</u> Positive Rate Trip light on Power Range Upper N42A, 1-IDWR-92-42A II, is checked and determines light is NOT LIT and continues to next step.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.g

NOTE TO EVALUATOR: Applicant returns to AOI-4 at step 16 c.	
<p><u>STEP 9:</u> [STEP 16 c] ENSURE T-avg and T-ref within 1°.</p> <p><u>STANDARD:</u> Applicant verifies T-avg and T-ref within 1° by recorder 1-TR-68-2B on 1-M-5 or other T-avg - T-ref indications.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [STEP 16 d] ENSURE zero demand on control rod position indication [1-M-4].</p> <p><u>STANDARD:</u> Applicant determines zero demand on control rod position indication CERPI display or ICS computer display for CERPI</p> <ul style="list-style-type: none"> • CERPI Display • Plant computer <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.g

<p><u>STEP 11:</u> [STEP 16 e] IF auto rod control desired, PLACE control rods in AUTO.</p> <p><u>STANDARD:</u> The rod control hand switch has been placed in AUTO position.</p> <p> **CUE: <i>If asked, respond as US that auto rod control is desired.</i></p> <p>NOTE TO EVALUATOR: Continuous rod insertion malfunction is inserted when rod control is placed in AUTO. The applicant may immediately return rod control to manual, check for rod motion stopped, and then trip the reactor before referring to AOI-2.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>NOTE TO EVALUATOR: The Following Steps are from AOI-2 Section 3.2 due to continuous rod insertion.</p>	
<p><u>STEP 12:</u> [STEP 1] PLACE control rods in MAN.</p> <p><u>STANDARD:</u> Rod control hand switch has been placed in Manual position.</p> <p> NOTE: Rods will continue to step IN.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.g

<p><u>STEP 13:</u> [STEP 2] CHECK control rod movement STOPPED.</p> <p><u>STANDARD:</u> Rod control indications have been checked for movement and applicant determines that rods are still inserting and goes to RNO for step.</p> <p> **NOTE: Rods will continue to step IN.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> [STEP 2 RNO] TRIP reactor. GO TO E-0, Reactor Trip or Safety Injection.</p> <p><u>STANDARD:</u> Reactor Trip hand switch on 1-M-4 or 1-M-6 has been placed to the TRIP position. Applicant then goes to E-0.</p> <p> Critical step, as uncontrolled rod movement in manual rod control requires a reactor trip.</p> <p> **CUE: Upon transition to E-O, inform applicant “This completes this JPM.”</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;">END OF TASK</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

TIME STOP: _____

WATTS BAR NUCLEAR PLANT

B.1.h

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. Power Range Monitor N42 failed during last shift.
3. AOI-4 "NUCLEAR INSTRUMENTATION MALFUNCTIONS," Section 3.4. "Power Range Monitor (PRM) Failure," has been completed through Step 16.a.
4. Work Control has notified the MCR that repairs to PRM N42 are complete and the instrument is ready to be returned to service.
5. You are the Operator at the Controls.

INITIATING CUES:

1. The Unit Supervisor has directed you to return PRM N42 to service.
2. You are to notify the US when the control rods have been returned to AUTO.

WATTS BAR NUCLEAR PLANT

B.1.h

B.1.h Shutdown “A” Train EGTS Following a 10 Hour Run per SOI-65.02.

WATTS BAR NUCLEAR PLANT B.1.h

Task: Shutdown "A" Train EGTS Following a 10 Hour Run per SOI-65.02, "Emergency Gas Treatment System."

Alternate Path: N/A

Facility JPM #: 3-OT-JPMR169

K/A Rating(s): 027 Containment Iodine Removal System (CIRS) A4.01, Ability to manually operate and/or monitor in the control room CIRS controls. [3.3*/3.3*] (CFR: 41,7/45.5/to 45.8)
029 Containment Purge System (CPS) A1.05 Knowledge of the physical connections and/or cause and effect relationships between the Containment Purge System and the containment air cleanup and recirculation system. [2.9/3.1] (CFR: 41.2 to 41.9/45.7 to 45.8)

Task Standard: EGTS "A" Train has been shutdown and returned to Standby alignment in accordance with SOI-65.02 "Emergency Gas Treatment System."

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator In-Plant

Perform Simulate

References: SOI-65.02 "Emergency Gas Treatment System" Rev. 24

Task Number: RO-065-SOI-65-005

APPLICABLE FOR: RO/SRO

10CFR55.45: 3, 6, 8

Validation Time: 15 min. **Time Critical:** No

Applicant: _____
NAME

SSN

Time Start: _____
Time Finish: _____

Performance Rating: SAT UNSAT

Performance Time _____

Examiner: _____
NAME

SIGNATURE

DATE

COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.h

WATTS BAR NUCLEAR PLANT

B.1.h

SIMULATOR OPERATOR INSTRUCTIONS:

1. Initialize to IC **318**.
2. Ensure the alignment for "A" Train EGTS in service:
 - 1-FCV-65-10 - Open.
 - 1-FCO-65-26 - Open.
 - 1-HS-65-81/86 - OPEN
 - 1-HS-65-83/87 in A-AUTO STANDBY
 - 0-HS-65-23A - RUNNING.
3. Acknowledge all alarms.
5. Freeze simulator until the applicant indicates understanding of the task and time is allowed for control board familiarization.
5. After applicant indicates understanding of task, place simulator in run.

Tools/Equipment/Procedures Needed:

Ensure clean copy of SOI-65.02 "Emergency Gas Treatment System" in all JPM packages.

WATTS BAR NUCLEAR PLANT

B.1.h

READ TO APPLICANT

DIRECTION TO APPLICANT

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. 0-SI-65-6-A “Emergency Gas Treatment System Train A 10-Hour Operation” performance in progress.
3. “A” Train EGTS Fan has been in service for 10 hours.
4. You are a support operator in the control room.

INITIATING CUES:

1. The Unit Supervisor directs you to shutdown the “A” Train EGTS Fan per SOI-65.02 and return EGTS to Standby Alignment per the procedure.
2. You are to notify Unit Supervisor when you have completed the task.

WATTS BAR NUCLEAR PLANT

B.1.h

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> A copy of SOI-65.02 section 7.1 has been obtained.</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator provides a copy of the instruction.</i></p> <p>NOTE TO EVALUATOR: Applicant may also identify Section 5.0 as needed to return EGTS to standby. You may provide a copy of this section when applicant seeks to obtain a copy.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>CAUTION: If EGTS is in service due to an accident signal initiation, and the charcoal filter banks have decay heat, an engineering evaluation must be performed before shutting down the EGTS system.</p>	
<p>NOTE If EGTS was Auto actuated, both Trains' shutdown sections must be performed prior to return to standby readiness.</p>	
<p><u>STEP 2:</u> [Step 1] ENSURE a ØA Cntmt Isolation signal is NOT present.</p> <p><u>STANDARD:</u> Applicant determines that ØA Cntmt Isolation signal is NOT present by checking Master Isol Signal PNLs 1-XX-55-6C & 6D ØA light DARK.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.h

<p><u>STEP 3:</u> [Step 2] Momentarily PLACE 0-HS-65-23A, EGTS FAN & DISCH DMPR, in STOP (returns to A-AUTO).</p> <p><u>STANDARD:</u> Applicant stops "A" Train EGTS Fan with 0-HS-65-23A and checks red light off and green light ON the associated handswitch.</p> <p style="text-align: center;">Step is critical to shutdown the running EGTS Fan.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> [Step 3] ENSURE 1-FCV-65-8, EGTS TR-A U1 SUCT DMPR, CLOSED.</p> <p><u>STANDARD:</u> Applicant checks 1-HS-65-8 and verifies red light off and green light ON for the associated hand switch</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [Step 4] PERFORM the following:</p> <p> [a] CLOSE 1-FCV-65-10, EGTS TR-A U1 SUCT DMPR.</p> <p> [b] CLOSE 1-FCO-65-26, EGTS TO U1 SHIELD BLDG.</p> <p><u>STANDARD:</u> Applicant closes 1-FCV-65-10 with 1-HS-65-10; applicant closes 1-FCO-65-26 with 1-HS-65-26. Respective hand switches red lights are off and green lights are LIT.</p> <p style="text-align: center;">Step is critical to shutdown return ventilation lineup to normal following 10 hour run.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.h

<p>STEP 6: [STEP 5] IF Train A EGTS to be returned to STANDBY, THEN: PERFORM the following:</p>	<p>CRITICAL STEP</p>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">NOMENCLATURE</th> <th style="text-align: center;">LOCATION</th> <th style="text-align: center;">POSITION</th> <th style="text-align: center;">UNID</th> </tr> </thead> <tbody> <tr> <td>EGTS TR-A U1 SUCT DMPR</td> <td>0-M-27B</td> <td>A AUTO</td> <td>1-HS-65-10</td> </tr> <tr> <td>EGTS TR-A U1 SHIELD BLDG</td> <td>0-M-27B</td> <td>A AUTO</td> <td>1-HS-65-26</td> </tr> </tbody> </table>	NOMENCLATURE	LOCATION	POSITION	UNID	EGTS TR-A U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-10	EGTS TR-A U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-26	
NOMENCLATURE	LOCATION	POSITION	UNID										
EGTS TR-A U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-10										
EGTS TR-A U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-26										
<p><u>STANDARD:</u> Applicant places 1-HS-65-10 and 1-HS-65-26 to the A AUTO position.</p> <p style="text-align: center;">Step is critical to return these hand switches to ES Standby alignment.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>												
<p>STEP 7: [Step 6] IF Train B EGTS is to be shutdown, THEN GO TO Section 7.2.</p> <p><u>STANDARD:</u> Applicant determines that this step does not apply and proceeds to the next step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>												
<p>STEP 8: [Step 7] IF EGTS is to be returned to STANDBY, THEN GO TO Section 5.0 to align EGTS for STANDBY.</p> <p><u>STANDARD:</u> Applicant goes to Section 5.0.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>												

WATTS BAR NUCLEAR PLANT

B.1.h

<p>NOTE TO EVALUATOR: The following performance steps are from section 5.1 of SOI-65.02.</p>				
<p>CAUTION IF EGTS is being returned to standby after auto actuation, THEN both Sections 7.1 and 7.2 must be performed prior to Standby Readiness alignment.</p>				
<p><u>STEP 9:</u> [Step 1] ENSURE a ØA Cntmt Isolation signal is NOT present.</p> <p><u>STANDARD:</u> Applicant determines that ØA Cntmt Isolation signal is NOT present by checking Master Isol Signal PNLs 1-XX-55-6C & 6D ØA light DARK.</p> <p>NOTE TO EVALUATOR: This was previously performed in step 2 of JPM.</p> <p><u>COMMENTS:</u></p>				<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 10:</u> [Step 2] ENSURE the following valves are CLOSED and PLACE 1-HS-65-81/86 in A AUTO.</p>				<p>CRITICAL STEP</p>
NOMENCLATURE	LOCATION	POSITION	UNID	
U1 EGTS-ANN ΔP CNTLR A ISOL	0-M-27B	A AUTO	1-HS-65-81/86	
<p><u>STANDARD:</u> Applicant locates 1-HS-65-81/86 and places in A-AUTO. Step is critical to establishing EGTS configuration for automatic start after a ØA Cntmt Isolation signal.</p> <p><u>COMMENTS:</u></p>				<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.h

STEP 11: [STEP 3] ENSURE breaker position for the following:				 ___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
120VAC VITAL INST POWER BD 1-I				
EGTS TRAIN A AUX RELAYS 1-PCV-65-81/1-PCV-65-86	Bkr 38	OFF	1-BKR-235-1/38	
<p><u>STANDARD:</u> Applicant contacts the Control Building AUO (or an AUO) and requests performance of Step 3.</p> <p>**CUE: <i>When asked as the AUO, state "1-BKR-235-1/38 is in the OFF position".</i></p> <p><u>COMMENTS:</u></p>				
STEP 12: [Step 4] ENSURE the following valves are CLOSED and PLACE 1-HS-65-83/87 in A AUTO .				 ___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
U1 EGTS-ANN ΔP CNTLR B ISOL	0-M-27B	A AUTO	1-HS-65-83/87	
<p><u>STANDARD:</u> Applicant locates 1-HS-65-83/87 and places in A-AUTO. Step is critical to establishing EGTS configuration for automatic start after a ØA Cntmt Isolation signal.</p> <p><u>COMMENTS:</u></p>				

WATTS BAR NUCLEAR PLANT

B.1.h

STEP 13: [STEP 5] ENSURE breaker position for the following:				 ___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
120VAC VITAL INST POWER BD 1-II				
EGTS TRAIN B AUX RELAYS 1-PCV-65-81/1-PCV-65-86	Bkr 38	OFF	1-BKR-235-2/38	
STANDARD: Applicant contacts an AUO and requests performance of Step 5. **CUE: <i>When asked as the AUO, state "1-BKR-235-2/38 is in the OFF position".</i> COMMENTS:				
STEP 14: [STEP 6] PERFORM the following:				 ___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
EGTS FAN A & DISCHG DMPR	0-M-27B	A AUTO	0-HS-65-23A	
EGTS FAN B & DISCHG DMPR	0-M-27B	A AUTO	0-HS-65-42A	
STANDARD: Applicant locates 0-HS-65-23A and ensures in A-AUTO. Applicant locates 0-HS-65-42A and ensures in A-AUTO. COMMENTS:				

WATTS BAR NUCLEAR PLANT

B.1.h

<p>STEP 15: [STEP 7] OPEN the following valves, and PLACE the handswitches in A AUTO:</p>				<p>CRITICAL STEP</p>
NOMENCLATURE	LOCATION	POSITION	UNID	
U1 ANN VAC FANS SUCT	0-M-27B	OPEN, HS in A AUTO	0-HS-65-52	
U1 ANN VAC FANS SUCT	0-M-27B	OPEN, HS in A AUTO	0-HS-65-53	
<p>STANDARD: Applicant locates 0-HS-65-52 and ensures OPEN and in A-AUTO. Applicant locates 0-HS-65-53 and ensures OPEN and in A-AUTO. Step is critical to establishing EGTS configuration for automatic start after a ØA Cntmt Isolation signal.</p>				<p>___ SAT</p> <p>___ UNSAT</p>
<p>COMMENTS:</p>				
<p>NOTES</p>				
<p>1) The following step may be N/A'd if annulus vacuum fans are running.</p>				
<p>2) If a phase A signal has been present, the next step may start one Ann Vac Fan due to low flow. Either fan may be selected first. Flow should be allowed to stabilize before the second fan is placed in auto to avoid two fans running. SOI-65.01 Section 5.0 should be referenced to ensure proper damper alignment and control after fan start.</p>				

WATTS BAR NUCLEAR PLANT

B.1.h

STEP 16: [STEP 8] PLACE the following handswitches in STOP to break seal-in, AND RETURN to A-P AUTO:				___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
ANN VAC FAN 1A & SUCT FCO	0-M-27B	A P AUTO	1-HS-65-77A	
ANN VAC FAN 1B & SUCT FCO	0-M-27B	A P AUTO	1-HS-65-74A	
STANDARD: Applicant verifies that annulus vacuum fans are running and N/As the step.				
COMMENTS:				
STEP 17: [STEP 9] IF an accident signal ($\emptyset A$) has occurred and WHEN Annulus ΔP is greater than 4.0 in. H ₂ O, THEN: (N/A if TACF 1-07-0002-065 is in effect.) PERFORM the following:				___ SAT ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	
PCV-65-81 and PCV-65-86, EGTS CNTMT ANNULUS DP RESET	A5W/737, 1-JB -292-4013-A, N. of GFFD Rm.	RESET	1-HS-65-80 and 1-HS-65-90	
PCV-65-83 and PCV-65-87, EGTS CNTMT ANNULUS DP RESET	A4V/737, 1-JB-292-4015-B, S. of GFFD Rm.	RESET	1-HS-65-82 and 1-HS-65-97	
STANDARD: Applicant determines that no accident signal was present and N/As the step				
COMMENTS:				
CAUTION PDIC-65-80 & 82 Setpoint Thumbwheels are adjusted by MIG only.				

WATTS BAR NUCLEAR PLANT

B.1.h

STEP 18: [STEP 10] ENSURE the following controllers in AUTO :				<p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	
EGTS-ANN ΔP CONTROL	0-M-27B	AUTO	1-PDIC-65-82	
EGTS-ANN ΔP CONTROL	0-M-27B	AUTO	1-PDIC -65-80	
<p><u>STANDARD:</u> Applicant locates 1-PDIC-65-82 and ensures controller is in AUTO Applicant locates 1-PDIC -65-80 and ensures controller is in AUTO</p> <p><u>COMMENTS:</u></p>				

WATTS BAR NUCLEAR PLANT

B.1.h

STEP 19: [STEP 11] ENSURE the following:				<p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	
EGTS TR A DECAY COOLING	0-M-27B	CLOSE	0-HS-65-28B	
EGTS TR A DECAY COOLING	0-M-27B	CLOSE	0-HS-65-28A	
EGTS TR B DECAY COOLING	0-M-27B	CLOSE	0-HS-65-47A	
EGTS TR B DECAY COOLING	0-M-27B	CLOSE	0-HS-65-47B	
<p><u>STANDARD:</u></p> <p>_____ Applicant locates 0-HS-65-28B and ensures that it is CLOSED.</p> <p>_____ Applicant locates 0-HS-65-28A and ensures that it is CLOSED.</p> <p>_____ Applicant locates 0-HS-65-47A and ensures that it is CLOSED.</p> <p>_____ Applicant locates 0-HS-65-47B and ensures that it is CLOSED.</p> <p><u>COMMENTS:</u></p>				

WATTS BAR NUCLEAR PLANT

B.1.h

<u>STEP 20:</u> [STEP 12] PERFORM the following:				
NOMENCLATURE	LOCATION	POSITION	UNID	
EGTS TR-A U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-10	
EGTS TR-A U1 SUCT DMPR	0-M-27B	CLOSE	1-HS-65-8	
EGTS FAN B U1 SUCT DMPR	0-M-27B	CLOSE	1-HS-65-51	
EGTS TR-B U1 SUCT DMPR	0-M-27B	A AUTO	1-HS-65-30	
EGTS TO U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-26	
EGTS TO U1 SHIELD BLDG	0-M-27B	A AUTO	1-HS-65-27	
<p><u>STANDARD:</u></p> <p>_____ Applicant locates 1-HS-65-10 and ensures that it is in A-AUTO.</p> <p>_____ Applicant locates 1-HS-65-8 and ensures that it is CLOSED.</p> <p>_____ Applicant locates 1-HS-65-51 and ensures that it is CLOSED.</p> <p>_____ Applicant locates 1-HS-65-30 and ensures that it is in A-AUTO.</p> <p>_____ Applicant locates 1-HS-65-26 and ensures that it is in A-AUTO.</p> <p>_____ Applicant locates 1-HS-65-27 and ensures that it is in A-AUTO.</p> <p><u>COMMENTS:</u></p>				<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p><u>STEP 21:</u> Notify the Unit Supervisor that “A” Train EGTS Fan is shutdown and realigned for standby readiness.</p> <p><u>STANDARD:</u> Applicant notifies the Unit Supervisor that “A” Train EGTS Fan is shutdown and realigned for standby readiness.</p> <p><u>COMMENTS:</u></p>				<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
END OF TASK				

TIME STOP: _____

WATTS BAR NUCLEAR PLANT

B.1.i

APPLICANT CUE SHEET (TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 100% power.
2. 0-SI-65-6-A "Emergency Gas Treatment System Train A 10-Hour Operation" performance in progress.
3. "A" Train EGTS Fan has been in service for 10 hours.
4. You are a support operator in the control room.

INITIATING CUES:

1. The Unit Supervisor directs you to shutdown the "A" Train EGTS Fan per SOI-65.02 and return EGTS to Standby Alignment per the procedure.
2. You are to notify Unit Supervisor when you have completed the task.

**WATTS BAR NUCLEAR PLANT
B.1.i**

ALTERNATE PATH

**B.1.i Perform a boration of the RCS (LOCALLY) per
AOI-34, "IMMEDIATE BORATION."**

WATTS BAR NUCLEAR PLANT
B.1.i

WATTS BAR NUCLEAR PLANT

B.1.i

Task: Perform a Boration of the RCS (LOCALLY) per AOI-34 "IMMEDIATE BORATION."

Alternate Path: 1-FCV-62-138 will not pass more than 8 gpm, requiring manual valve 1-ISV-62-929 to be opened locally. This also requires use of control room flow indication, since the indication of flow via this path is not available locally.

Facility JPM #: 3-OT-JPMA020B Rev 4.

K/A Rating(s):	024AA1.04	[3.6/3.7]	024AK3.01	[4.1/4.4]
	024AA1.18	[3.7/3.6]	024AA1.20	[3.2/3.3]

Task Standard: Total boration flow rate of 45 gpm has been established on 1-FCV-62-137A and 1-FI-62-139 after partially opening 1-FCV-62-136 and fully opening 1-ISV-62-929 locally.

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator _____ In-Plant X

Perform _____ Simulate X

References: AOI-34, "IMMEDIATE BORATION," Rev. 23.

Task Number: AUO-062-AOI-27-001 APPLICABLE FOR: AUO/RO/SRO

10CFR55.45: 6, 8, 9, 10

Validation Time: 17 min. **Time Critical:** No

=====

Candidate: _____	_____	Time Start: _____
NAME	SSN/EIN	Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____	_____ / _____
NAME	SIGNATURE DATE

=====

COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.i

WATTS BAR NUCLEAR PLANT

B.1.i

Tools/Equipment/Procedures Needed:

Hard Hat, Gloves, Safety Glasses, Hearing Protection, and Plant Approved Shoes.
Procedure AOI-34, "Immediate Boration".
ALARA considerations

NOTE: Start this JPM at the RAD WASTE DESK.

WATTS BAR NUCLEAR PLANT

B.1.i

READ TO OPERATOR

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The Reactor has been tripped and AOI-34, "IMMEDIATE BORATION," is being performed due to an RCS cooldown resulting in temperature less than 547°F.
2. The normal makeup controls did not function correctly to establish boric acid flow.
3. Both Boric Acid pumps are operating in FAST speed.
4. 1-FCV-62-138 did not open from the Main Control Room.

INITIATING CUES:

1. You have been assigned to perform AOI-34, "IMMEDIATE BORATION," Step 6 actions to locally establish boric acid flow.
2. You are to establish a minimum boric acid flow rate of 45 gpm.

WATTS BAR NUCLEAR PLANT

B.1.i

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the appropriate instruction.</p> <p><u>STANDARD:</u></p> <p>EXAMINER'S CUE: <i>After the method of obtaining an instruction properly has been demonstrated, the evaluator provides a copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [STEP 6.b. RNO] Locally ADJUST 1-FCV-62-138 to obtain required flow.</p> <p><u>STANDARD:</u> 1-FCV-138-B, EMERGENCY BORATION FLOW CONTROL, is located. The manual lever is pushed to the manual position (in direction of arrow) and the Applicant opens the valve by turning the hand wheel in the counter-clockwise direction.</p> <p>CUE: <i>State "the motor operator hand wheel rotates a few turns (3-4) and stops."</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.i

<p>STEP 3: [STEP 6.c.] CHECK emergency borate flow on 1-FI-62-137A.</p> <p>STANDARD: 1-FI-62-137A has been checked and determination made that 8 gpm has been established, which is insufficient to meet the required flow rate. Entry into c. RNO is required, since the stated flow rate of 45 gpm is not established. Step is critical to evaluating whether a flow path has been established.</p> <p>CUE: <i>When applicant contacts the Main Control Room to check flow on 1- FI-62-137A, state “the indicator reads 8 gpm.”</i></p> <p> <i>If the applicant checks local flow indicator 1-FI-62-137B, indicate 8 gpm on the meter.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>Note: The following step is required since valve could not be operated electrically</p>	
<p>STEP 4: [STEP 6c. RNO] Locally OPEN manual boration valve 1-ISV-62-929 [Blender Station/713].</p> <p>STANDARD: 1-ISV-62-929 is opened by turning the hand wheel in the counter-clockwise direction. Step is critical because it initiates boration flow.</p> <p>CUE: <i>State “the hand wheel was rotated many turns in the counter-clockwise direction and has stopped.”</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.i

<p><u>STEP 5:</u> [STEP 6.c. RNO continued] ENSURE BA flow control 1-FCV-62-140 OPEN.</p> <p><u>STANDARD:</u> Applicant observes 1-FCV-62-140 and determines that the valve is OPEN</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> [STEP c. RNO continued] ENSURE BA to Blender, 1-FI-62-139, indicating flow.</p> <p><u>STANDARD:</u> Applicant contacts the MCR to determine if flow is indicated on 1-FI-62-139. The applicant determines that the combined flow rate from 1-FI-62-137A and 1-FI-62-139 of 48 gpm is greater than the required flow rate of 45 gpm.</p> <p style="padding-left: 40px;"><i>CUE: When MCR is contacted, state "1-FI-62-139 is indicating 40 gpm."</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.i

<p><u>STEP 15:</u> [7] IF emergency boration flow established, THEN GO TO Step 9.</p> <p><u>STANDARD:</u> Applicant contacts MCR and reports that emergency boration flow has been established.</p> <p> <i>CUE:</i> <i>Acknowledge report as MCR operator using repeat back.</i></p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
--	---

TIME STOP: _____

WATTS BAR NUCLEAR PLANT

B.1.j

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The Reactor has been tripped and AOI-34 is being performed due to an RCS cooldown resulting in temperature less than 547°F.
2. The normal makeup controls did not function correctly to establish boric acid flow.
3. Both Boric Acid pumps are operating in FAST speed.
4. 1-FCV-62-138 did not open from the Main Control Room.

INITIATING CUES:

1. You have been assigned perform AOI-34, Step 6.b RNO actions to locally establish boric acid flow.
3. You are to establish a minimum boric acid flow rate of 45 gpm.

WATTS BAR NUCLEAR PLANT
B.1.j

B.1.j Perform E-3, Attachment 3, Steamline Isolation (Local)

WATTS BAR NUCLEAR PLANT B.1.j

Task: Perform E-3, "Steam Generator Tube Rupture," Attachment 3, "Steamline Isolation (Local)."

Alternate Path: N/A

Facility JPM #: 3-OT-JPMA054 Rev 3

K/A Rating(s): 038 EA1.32 [4.6/4.7] 2.1.30 [3.9/3.4]

Task Standard: All nine steam line traps have been located. One steam trap has been isolated (all others are isolated the same way). Main steam supplies to each MFP turbine have been located and isolated.

Preferred Evaluation Location:

Preferred Evaluation Method:

Simulator _____ In-Plant X

Perform _____ Simulate X

References: E-3, Steam Generator Tube Rupture, Rev. 22

Task Number: RO-113-EOP-3-001

APPLICABLE FOR: AUO/RO/SRO

10CFR55.45: 5.6

Validation Time: 20 min. **Time Critical:** No

Candidate: _____
NAME

SSN/EIN

Time Start: _____
Time Finish: _____

Performance Rating: SAT _____ UNSAT _____

Performance Time _____

Examiner: _____
NAME

SIGNATURE

DATE

=====

COMMENTS

WATTS BAR NUCLEAR PLANT

B.1.j

Tools/Equipment/Procedures Needed:

Hard Hat, Safety Glasses, Flashlight, Hearing Protection, Gloves, and Plant Approved Shoes.

E-3, Attachment 3.

SAFETY Considerations:

High Temperature Pipes,
Ladder Safety,
ALARA considerations.

NOTE: Start this JPM in the MCR.

EVALUATOR NOTE: Provide copy of E-3, "Steam Generator Tube Rupture," Attachment 3, "Steamline Isolation (Local)." to applicant with applicant's cue sheet.

WATTS BAR NUCLEAR PLANT

B.1.j

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is in Mode 3 after a Steam Generator tube rupture on S/G # 2.
2. The Main Steam Isolation Valve (MSIV) on S/G # 2 has failed to close.
3. Main Steam line warming is NOT in progress.

INITIATING CUES:

1. The MCR operator has directed you to locally isolate the steam traps and main feed pump turbine on the main steam system by performing E-3, "Steam Generator Tube Rupture," Attachment 3, "Steamline Isolation (Local)."
2. You are to notify the MCR operator when E-3, Attachment 3 has been completed.

WATTS BAR NUCLEAR PLANT

B.1.j

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> A copy of E-3, Attachment 3, Steamline Isolation (Local) is obtained.</p> <p>EXAMINER’S CUE: Provide E-3, Attachment 3, “Steamline Isolation (Local)” to the applicant.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [Step 1] COORDINATE steam trap isolation with RADPROT.</p> <p><u>STANDARD:</u> The applicant contacts RADCON.</p> <p>CUE: State “<i>The survey of steam lines has been made and is continuing periodically.</i>”</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>EXAMINER NOTE: Applicant must locate all nine steam traps and demonstrate how to isolate one of them. The applicant may use a flashlight to point out the hard to reach traps. The applicant must locate an “EOP ladder” for use in operating valves located in hard to reach locations.</p>	

WATTS BAR NUCLEAR PLANT

B.1.j

<p>STEP 3: [STEP 2] CLOSE at least one valve listed for each steam moisture trap manifold: [MAIN STEAM LINES]</p>				<p>CRITICAL STEP</p>
<p>MSTR TRAP LEVEL SWITCH</p>	<p>MSTR TRAP STR ISOL</p>	<p>MSTR TRAP DRAIN ISOL</p>	<p>LOCATION</p>	
<p>200</p>	<p>1-ISV-1-916</p>	<p>OR</p>	<p>1-ISV-1-922 [T1M/708]</p>	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-200 can be accomplished by either closing 1-ISV-1-916 or closing 1-ISV-1-922. (Rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>				<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.j

STEP 4: [STEP 2 continued] CLOSE at least one valve listed for each steam moisture trap manifold: [MAIN STEAM LINES]				CRITICAL STEP
MSTR TRAP LEVEL SWITCH	MSTR TRAP STR ISOL	MSTR TRAP DRAIN ISOL	LOCATION	
201	1-ISV-1-926	OR	1-ISV-1-932 [T1M/708]	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-201 can be accomplished by either closing 1-ISV-1-926 or closing 1-ISV-1-932. (Rotating hand wheel clockwise) Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>				<p>___ SAT</p> <p>___ UNSAT</p>
STEP 5: [STEP 2 continued] CLOSE at least one valve listed for each steam moisture trap manifold: [MAIN STEAM LINES]				CRITICAL STEP
MSTR TRAP LEVEL SWITCH	MSTR TRAP STR ISOL	MSTR TRAP DRAIN ISOL	LOCATION	
202	1-ISV-1-936	OR	1-ISV-1-942 [T1M/708]	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-202 can be accomplished by either closing 1-ISV-1-936 or closing 1-ISV-1-942. (Rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>				<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.j

STEP 6: [STEP 2 continued] CLOSE at least one valve listed for each steam moisture trap manifold: [MAIN STEAM LINES]				CRITICAL STEP
MSTR TRAP LEVEL SWITCH	MSTR TRAP STR ISOL	MSTR TRAP DRAIN ISOL	LOCATION	
203	1-ISV-1-946	OR	1-ISV-1-952 [T1M/708]	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-203 can be accomplished by either closing 1-ISV-1-946 or closing 1-ISV-1-952. (Rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>				<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
STEP 7: [STEP 2 continued] CLOSE at least one valve listed for each steam moisture trap manifold: [COMMON STEAM HEADER]				CRITICAL STEP
MSTR TRAP LEVEL SWITCH	MSTR TRAP STR ISOL	MSTR TRAP DRAIN ISOL	LOCATION	
204	1-ISV-1-956	OR	1-ISV-1-962 [T4J/708]	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-204 can be accomplished by either closing 1-ISV-1-956 or closing 1-ISV-1-962. (Rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>				<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.j

<p>STEP 11: [STEP 2 continued] CLOSE at least one valve listed for each steam moisture trap manifold: [STEAM DUMP HEADER]</p>					<p>CRITICAL STEP</p>
<p>MSTR TRAP LEVEL SWITCH</p>	<p>MSTR TRAP STR ISOL</p>	<p>OR</p>	<p>MSTR TRAP DRAIN ISOL</p>	<p>LOCATION</p>	
<p>209</p>	<p>1-ISV-1-996</p>	<p>OR</p>	<p>1-ISV-1-1002</p>	<p>[T7F/708]</p>	
<p>STANDARD: The applicant locates each moisture trap. Demonstration of the isolation of the trap associated with 1-LS-209 can be accomplished by either closing 1-ISV-1-996 or closing 1-ISV-1-1002. (Rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>					<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 12: [STEP 3] CLOSE steam supply isolation and bypass for each Main Feed Pump Turbine:</p>					<p>CRITICAL STEP</p>
<p>MFPT</p>	<p>NOMENCLATURE</p>	<p>LOCATION</p>	<p>POSITION</p>	<p>UNID</p>	
<p>1A</p>	<p>MFPT 1A HP STEAM SUPPLY ISOL</p>	<p>T2J/729</p>	<p>CLOSED</p>	<p>1-ISV-1-611</p>	
<p>STANDARD: The applicant locates valve and closes valve (rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p>COMMENTS:</p>					<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.j

<p>STEP 13: [STEP 3 continued] CLOSE steam supply isolation and bypass for each Main Feed Pump Turbine:</p>					
MFPT	NOMENCLATURE	LOCATION	POSITION	UNID	
1A	MFPT 1A HP STEAM SUPPLY ISOL BYPASS	T2J/729	CLOSED	1-IBV-1-613	
<p><u>STANDARD:</u> The applicant locates valve and checks valve closed (rotating hand wheel clockwise).</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p><u>COMMENTS:</u></p>					<p style="text-align: right;">__ SAT</p> <p style="text-align: right;">__ UNSAT</p>
<p>STEP 14: [STEP 3 continued] CLOSE steam supply isolation and bypass for each Main Feed Pump Turbine:</p>					<p>CRITICAL STEP</p>
MFPT	NOMENCLATURE	LOCATION	POSITION	UNID	
1B	MFPT 1B HP STEAM SUPPLY ISOL	T2H/729	CLOSED	1-ISV-1-612	
<p><u>STANDARD:</u> The applicant locates valve and closes valve (rotating hand wheel clockwise). Step is critical to isolate flow path.</p> <p>CUE: State “the hand wheel turns a few rotations and gets snug.”</p> <p><u>COMMENTS:</u></p>					<p style="text-align: right;">__ SAT</p> <p style="text-align: right;">__ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.j

<p>STEP 16: [STEP 3] CLOSE steam supply isolation and bypass for each MFPT:</p>					
MFPT	NOMENCLATURE	LOCATION	POSITION	UNID	
1B	MFPT 1B HP STEAM SUPPLY ISOL BYPASS	T2H/729	CLOSED	1-IBV-1-614	
<p>STANDARD: The applicant locates valve and checks valve closed (rotating hand wheel clockwise).</p> <p>CUE: State “the hand wheel does not move with clockwise force on hand wheel”.</p> <p>COMMENTS:</p>					<p style="text-align: right;">___SAT</p> <p style="text-align: right;">___UNSAT</p>
<p>STEP 17: Notify the MCR Operator that local main steam isolation has been completed per E-3, Attachment 3.</p> <p>STANDARD: The MCR Operator has been notified that local main steam isolation has been performed per E-3, Attachment 3.</p> <p>CUE: When notified, acknowledge the report.</p> <p>COMMENTS:</p> <p style="text-align: center; margin-top: 20px;"><u>END OF TASK</u></p>					<p style="text-align: right;">___SAT</p> <p style="text-align: right;">___UNSAT</p>

TIME STOP: _____

WATTS BAR NUCLEAR PLANT**B.1.k****CANDIDATE CUE SHEET****(TO BE RETURNED TO EXAMINER UPON COMPLETION OF TASK)****DIRECTION TO TRAINEE:**

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is in Mode 3 after a Steam Generator tube rupture on S/G # 2.
2. The Main Steam Isolation Valve (MSIV) on S/G # 2 has failed to close.
3. Main Steam line warming is NOT in progress.

INITIATING CUES:

1. The MCR operator has directed you to locally isolate the steam traps and main feed pump turbine on the main steam system by performing E-3, "Steam Generator Tube Rupture," Attachment 3, "Steamline Isolation (Local)."
2. You are to notify the MCR operator when E-3, Attachment 3 has been completed.

WATTS BAR NUCLEAR PLANT

B.1.k

B.1.k Place the CVCS Cation Demineralizer in Service per SOI-62.04, "CVCS PURIFICATION SYSTEM."

WATTS BAR NUCLEAR PLANT

B.1.k

Tools/Equipment/Procedures Needed:

Hard Hat, Safety Glasses, Hearing Protection, Gloves and Plant Approved Shoes
Copy of SOI-62.04, "CVCS PURIFICATION SYSTEM," Rev. 53, Section 8.2 and
Attachment 1 with data entered.

SAFETY CONSIDERATIONS:

Hot pipes, high noise, and heat.
Radiation levels.
Ladder use to reach valve handwheels.

WATTS BAR NUCLEAR PLANT

B.1.k

READ TO APPLICANT

DIRECTION TO APPLICANT:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The Unit is at 100% power.
2. Letdown orifice valve 1-FCV-62-74 is open and letdown flow (as indicated in MCR) is 75 gpm.
3. RCS boron concentration is 776 ppm.
4. Chemistry has requested that cation bed be placed in service for 53 minutes.
5. The Cation bed has been filled and vented.
6. SOI-62.04, "CVCS PURIFICATION SYSTEM," Attachment 1, Resin Status Sheet indicates that the Cation Bed is at the same boron concentration of the RCS.

INITIATING CUES:

1. The MCR operator has directed you to place the CVCS Cation Bed in service per procedure.
2. You are to notify the MCR when the CVCS Cation Bed is in service.

WATTS BAR NUCLEAR PLANT

B.1.k

START TIME: _____

<p><u>STEP 1:</u> Obtain a copy of the procedure.</p> <p><u>STANDARD:</u> Applicant has obtained a copy of SOI-62.04, "CVCS PURIFICATION SYSTEM," Section 8.2</p> <p>EXAMINER'S CUE: <i>After the applicant has demonstrated the method of obtaining the correct instruction, the evaluator can provide a copy of the instruction.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [1] ENSURE CB FILLED and VENTED per Section 8.1.</p> <p><u>STANDARD:</u> Applicant determines the Cation Bed is filled and vented per the INITIAL CONDITIONS provided.</p> <p>EXAMINER'S CUE: <i>If asked, inform the applicant that Section 8.1 is complete.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>Due to the location of one of the valve handwheels that will be operated, the applicant may require a ladder to reach the valve handwheel. If required, a general use ladder, NOT an EOP ladder, must be located by the operator.</p>	

WATTS BAR NUCLEAR PLANT

B.1.k

STEP 3: [2] PERFORM the following:				
NOMENCLATURE	LOCATION	POSITION	UNID	
CVCS CATION DEMIN BED INLET	A3T/713	CLOSED	1-ISV-62-915	
CVCS CATION DEMIN BED OUTLET	A3T/713	CLOSED	1-ISV-62-916	
CVCS CATION DEMIN BED VENT	A3T/713	CLOSED	1-VTV-62-917	
CVCS CATION DEMIN BED RESIN FILL	A5U/737	CLOSED	1-ISV-62-918	
CVCS CATION DEMIN BED RESIN DISCH	A7U/713	CLOSED	1-ISV-62-919	
CVCS CATION DEMIN BED DRAIN	A3T/713	CLOSED	1-DRV-62-920	
CVCS CATION BED FLUSH	A3T/713	CLOSED	1-FLV-62-921	
<p><u>STANDARD:</u> The above listed valves have been located and checked closed (clockwise to close).</p> <p>EVALUATOR CUE: State <i>"The handwheel will not rotate"</i>.</p> <p><u>COMMENTS:</u></p>				<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> [3] ENSURE 1-ISV-62-922, CVCS MIXED BED DEMIN OUTLET [A3T/713], is OPEN.</p> <p><u>STANDARD:</u> 1-ISV-62-922 is verified to be open.</p> <p>EVALUATOR CUE: State <i>"the handwheel will not rotate"</i>.</p> <p><u>COMMENTS:</u></p>				<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.k

<p><u>STEP 5:</u> [4] REVIEW Attachment 1, Resin Status Sheet to ensure CB is FILLED and BORATED.</p> <p><u>STANDARD:</u> Applicant determines that the CB is filled and borated (given in initial conditions) and proceeds to the next step.</p> <p><i>EVALUATOR CUE:</i> <i>Hand the applicant the Attachment 1 Resin Status Sheet.</i></p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p><u>STEP 6:</u> [5] NOTIFY SRO of intent to place CB in service, and its current boron concentration as recorded on Attachment 1, Resin Status Sheet.</p> <p><u>STANDARD:</u> The applicant contacts SRO and notifies them of intent to place cation Bed in service, advises them of boron concentration recorded on Attachment 1.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: right;">___ SAT</p> <p style="text-align: right;">___ UNSAT</p>
<p style="text-align: center;">CAUTION Cation Bed may need to be flushed to minimize reactivity effects if cation bed boron concentration varies more than 20 ppm from that of the RCS boron concentration or if a new cation bed is being placed in service.</p>	

WATTS BAR NUCLEAR PLANT

B.1.k

<p>STEP 7: [6] OPEN 1-ISV-62-915, CVCS CATION DEMIN BED INLET.</p> <p>STANDARD: 1-ISV-62-915 has been located and opened (turned in the counter-clockwise direction).</p> <p>EVALUATOR CUE: <i>State “the hand wheel rotates several turns and stops.”</i></p> <p style="padding-left: 40px;"><i>If indicator checked, indicate it points to the open position.</i></p> <p><i>Step is critical to establish flow through the cation demineralizer.</i></p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 8: [7] IF flush is desired for cation bed, THEN GO TO Section 8.7, Flushing Cation Bed to Adjust Boron Prior to Use.</p> <p>STANDARD: Applicant determines that flush is not required (per EVALUATOR CUE) and N/As step.</p> <p>EVALUATOR CUE: <i>State that flush is not necessary, nor desired at this time.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION Maximum Cation Bed flow is 75 gpm. May be read locally at 1-FI-62-113 (Panel 1-L-57 at A3T/713).</p>	

WATTS BAR NUCLEAR PLANT

B.1.k

<p><u>STEP 9:</u> [8] SLOWLY OPEN 1-ISV-62-916, CVCS CATION DEMIN BED OUTLET.</p> <p><u>STANDARD:</u> 1-ISV-62-916 has been located and opened slowly (turned in the counter-clockwise direction).</p> <p><u>EVALUATOR CUE:</u> <i>State “the hand wheel rotates several turns and stops.”</i></p> <p style="padding-left: 40px;"><i>If indicator checked, indicate it points to the open position.</i></p> <p><i>Step is critical to establish flow through the cation demineralizer.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [9] SLOWLY THROTTLE CLOSE 1-ISV-62-922, CVCS MIXED BED DEMIN OUTLET, until desired cation bed flow rate achieved.</p> <p><u>STANDARD:</u> 1-ISV-62-922 has been located and closed slowly (turned in the clockwise direction).</p> <p><u>EVALUATOR CUE:</u> <i>State “the hand wheel rotates several turns and stops.” If indicator checked, indicate it points to the closed position.</i></p> <p><u>EVALUATOR CUE:</u> <i>When 1 FI-62-113 is checked by the local indicator OR the CRT Monitor located near the demineralizer control valves, state it indicates 75 gpm. IF the MCR is contacted, state the letdown flow is 75 gpm.</i></p> <p><i>Step is critical to establish flow through the cation demineralizer.</i></p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

B.1.k

<p>STEP 11: [10] RECORD Time, Date, and Flowrate when CB was placed in service on Attachment 1, Resin Status Sheet.</p> <p>CUE: <i>Another operator will enter the information on Attachment 1, Resin Status Sheet.</i></p> <p>STANDARD: The applicant addresses entry of the Date, Time and Flow rate that the Cation Bed was placed in service is recorded on Attachment 1.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 12: [11] NOTIFY Chemistry of Time, Date, and Flowrate when CB was placed in service.</p> <p>STANDARD: The applicant notifies Chemistry of Time, Date, and Flowrate when CB was placed in service</p> <p>COMMENTS:</p> <p style="text-align: center;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

DIRECTION TO TRAINEE:

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS:

1. The Unit is at 100% power.
2. Letdown orifice valve 1-FCV-62-74 is open and letdown flow (as indicated in MCR) is 75 gpm.
3. RCS boron concentration is 776 ppm.
4. Chemistry has requested that cation bed be placed in service for 53 minutes.
5. The Cation bed has been filled and vented.
6. SOI-62.04, "CVCS PURIFICATION SYSTEM," Attachment 1, Resin Status Sheet indicates that the Cation Bed is at the same boron concentration of the RCS.

INITIATING CUES:

1. The MCR operator has directed you to place the CVCS Cation Bed in service per procedure.
2. You are to notify the MCR when the CVCS Cation Bed is in service.