

Facility: **Watts Bar**Date of Examination: **October 2011**Exam Level: RO ☒ SRO-I ☒ SRO-U ☐Operating Test Number: **2**Control Room Systems[®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Retrieve a Dropped Rod. 001 A2.03, 3.5/4.2 CFR 41.5/43.5/45.3/45.13	A, D	1
b. Place Letdown in Service per AOI-6. 004 A4.06 3.6/3.1 CFR 41.7 / 45.5 to 45.8	A, M	2
c. Align an RHR train for Hot Leg Recirculation. 006 A4.04 3.7 / 3.6 CFR 41.7/45.5 to 45.8	A, D	3
d. Start RCP 1. 003 A1.02 2.9/2.9 CFR 41.5 / 45.5	A, M, L	4P
e. Align Control Rod Drive Mechanism Coolers. 022 A4.01 3.6 / 3.6 CFR	C or S, D	5
f. Reinstate Source Range following a Reactor Trip. 015 A4.01, 3.6 / 3.6 CFR 41.7 / 45.5 to 45.8	A, D	7
g. Purge Lower Containment. 029 A2.03 2.7/3.1 CFR 41.5/43.5/45.3/45.13 CFR	C or S, M	8
h. Place SBMFP in service (RO ONLY). 059 A4.03 2.9 / 2.9 41.7 / 45.5 to 45.8	D, M	4S

In-Plant Systems[®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i. Bypass 1-FCV-62-89 Charging Flow for Local Control (Aux Bldg). 004 A4.08 3.8/3.4 CFR 41.7/45.5 to 45.8	D, E, R	2
j. Rolling 1B-B Diesel Generator To Check For Water In Cylinders per SOI-82.02 (DG Bldg). 064 A2.15 2.6/3.1 CFR 41.5/43.5/45.3/45.13	D, EN	6
k. Swap Seal Injection Filters (Aux Bldg). 004 A4.11 3.3/3.2 CFR 41.7/45.5 to 45.8	D, R	4P

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

*Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(EN)gineered safety feature	- / - / ≥ 1
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

Summary

- B.1.a This is an ALTERNATE PATH JPM. The applicant performs actions of AOI-2, "Malfunction of the Reactor Control System," Section 3.3, "Dropped RCCA." to retrieve shutdown bank rod C-5. The applicant diagnoses shutdown bank D dropping, and performs the IMMEDIATE OPERATOR ACTIONS of AOI-2, "Malfunction of the Reactor Control System," Section 3.3 "Dropped RCCA."
- B.1.b This is an ALTERNATE PATH JPM. During the performance of AOI-6, "Small Reactor Coolant System Leak," Step 16, the applicant determines that pressurizer level is rising and enters Step 16 RESPONSE NOT OBTAINED. After entering the RNO, the applicant places excess letdown in service and does NOT exceed 200°F as indicated on 1-TI-62-58, EXCESS LTDN TEMP.
- B.1.c This is an ALTERNATE PATH JPM. The applicant attempts to align RHR Train "A" to supply hot leg recirculation using ES-1.4, "Transfer to Hot Leg Recirculation." When the attempt is unsuccessful due to a valve failure, the applicant places RHR Train "B" in hot leg recirculation.
- B.1.d This is an ALTERNATE PATH JPM. The applicant performs the actions of SOI-68.02, "Reactor Coolant Pumps," to start RCP #1. After RCP #1 is started, the applicant evaluates RCP #1 bearing temperatures, determines that temperature is rising, and stops RCP #1 due to high bearing temperature.
- B.1.e The applicant places CRDM coolers A-A and B-B in service and shuts down CRDM coolers C-A and D-B and using SOI-30.03, "Containment HVAC and Pressure Control."
- B.1.f This is an ALTERNATE PATH JPM. The applicant determines that the Source Range detectors did NOT re-energize as expected and takes the actions of ES-0.1, "Reactor Trip Response," to manually reenergize and align the Source Range per Step 18 RESPONSE NOT OBTAINED.
- B.1.g The applicant places Lower Containment Purge in service using SOI-30.02, "Containment Purge System."
- B.1.h The applicant starts the Standby Main Feedwater pump in parallel with the Main Feedwater Pumps and adjusts Main Feedwater Pump pressure to load the Standby Main Feedwater pump to provide 3500 to 4000 gpm of flow. Task is performed using SOI-2&3.01, "Condensate and Feedwater Systems," Section 8.9, "Replacing Turbine Driven MFP with SMFP, or Periodic Operation of SMFP."
- B.1.i The applicant locally bypasses 1-FCV-62-89, Charging Flow Control Valve using SOI-62.01, "CVCS-Charging and Letdown," Section 8.6, "Bypassing 1-FCV-62-89, CHARGING FLOW CONT for Local Control," and establishes normal RCP Seal injection Flow.
- B.1.j The applicant performs SOI-82.02, "Diesel Generator 1B-B," Section 8.2, "Rolling" DG to Check for Water in Cylinders," in preparation for Surveillance testing.
- B.1.k The applicant performs SOI-62.01, "CVCS-Charging and Letdown," Section 8.9.2, "Replacing Filter B with Filter A."

Facility: **Watts Bar**Date of Examination: **October 2011**Exam Level: RO ☒ SRO-I ☒ **SRO-U** ☐Operating Test Number: **2 (Spare JPMs)**Control Room Systems[®] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

System / JPM Title	Type Code*	Safety Function
a. Complete 1-SI-85-2 Rod Exercising. 001 A4.03 4.0 / 3.7 CFR 41.7/45.5 to 45.8	A, M	1
b. Transfer Containment Spray Suction to RHR Containment Sump Per ES-1.3. 011 EA1.12 4.1/4.4 CFR 41.7 / 45.5 / 45.6	D, EN	2
c. Startup Lower Compartment Cooler. 022 A4.04 3.6/3.6 CFR 41.7 / 45.5 to 45.8	C or S, D	5
d. N/A		
e. N/A		
f. N/A		
g. N/A		
h. N/A		
In-Plant Systems [®] (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i. Isolate RCP Seal and Thermal Barrier Flow (Aux Bldg). 055 EK3.02 4.3/34.6 CFR 41.5/41.10/45.6/45.13	D, R	6
j. Perform E-3, Attachment 3, Steamline Isolation (Turbine Bldg). 038 EA1.32 4.6/4.7 CFR 41.7 / 45.5 / 45.6	D, E	3
k. Local Control of Motor Driven AFWP LCV for SG 1 Level (Aux Bldg). 054 AA4.01 4.5/4.4 CFR: 41.7 / 45.5 / 45.6	D, E, R	4S
@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
*Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1	
(EN)gineered safety feature	- / - / ≥ 1	
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA	≥ 1 / ≥ 1 / ≥ 1	
(S)imulator		

Summary

- B.1.a This is an ALTERNATE PATH JPM. The applicant performs 1-SI-85-2, "Reactivity Control Systems Movable Control Assemblies (Modes 1 and 2)," and inserts and withdraws Control Bank D rods 10 steps, returning the bank to its original position. When 1-RBSS ROD BANK SELECT is returned to "AUTO", the applicant responds to the continuous insertion of Control Bank D by performing the IMMEDIATE OPERATOR ACTIONS of AOI-2, "Malfunction of Reactor Control System," and manually trips the reactor.
- b.1.b **THIS IS A TIME CRITICAL JPM.**
The applicant aligns containment spray from the RWST to the containment sump, using ES-1.3, "Transfer to RHR Containment Sump," Steps 21 through 24. The applicant performs steps 21 c. through 24 **RESPONSE NOT OBTAINED** within 120 seconds.
- B.1.c The applicant establishes ERCW flow to the B-B Lower Containment Cooler using SOI-30-03, "Containment HVAC and Pressure Control," Section 5.3, "Lower CNTMT Cooler ERCW Alignment." The applicant places B-B Lower Containment Cooler in service using SOI-30-03, "Containment HVAC and Pressure Control," Section 5.4, "Startup/Reserve Alignment of Lower CNTMT Coolers."
- B.1.d N/A
- B.1.e N/A
- B.1.f N/A
- B.1.g N/A
- B.1.h N/A
- B.1.i The applicant performs ECA-0.0, "Loss of Shutdown Power," Appendix A, "RCP Seals and Thermal Barrier Isolation," Section 2.0, "Local Actions - Performed By Assistant Unit Operator," to Isolate RCP Seal Injection flow by closing valves in the CVCS system and RCP Thermal Barrier flow by closing valves in the Component Cooling system.
- B.1.j The applicant performs E-3, "Steam Generator Tube Rupture," Attachment 4, "Steamline Isolation (Local)," to isolate steam line moisture traps and MFP Turbine steam supplies.
- B.1.k The applicant performs SOI-3.02, "Auxiliary Feedwater System," Section 8.5.1, "SG 1 & 2 Level Control Via AFW Pump A-A," and establishes control of level in SG 1.

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.a
2011-10 NRC Exam

B.1.a
Retrieve a Dropped RCCA

B.1.a
2011-10 NRC Exam

Task: Retrieve dropped RCCA C-5, using AOI-2, “Malfunction of the Reactor Control System.”

Facility JPM #: 3-OT-JPMR095C

<u>K/A</u>	001 A2.03	Ability to operate and / or monitor the following as they apply to the Dropped Control Rod: Controls and components necessary to recover rod
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Evaluation Method: Simulator X In-Plant Classroom

Task Number: RO-085-AOI-2-004 **Title:** Respond to a dropped RCCA.

Validation Time: 18 minutes **Time Critical:** Yes No **X**

Performance Rating: SAT ____ UNSAT ____ Performance Time ____

Examiner: _____ / _____
NAME SIGNATURE DATE

WATTS BA NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.a
2011-10 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 311.
 - c. Right "click" on IC 311.
 - d. Select Reset on the drop down menu.
 - e. Right "click" on RESET.
 - f. Enter the password for IC 311.
 - g. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.

3. ENSURE the following information appears on the Director Summary Screen:

Key	Type	Event	Delay	Inserted	Ramp	Initial	Final	Value
rd13sddc5d		shutdown bank d c5 after 3 to 0 on event 1						
rd13sddde13		shutdown bank d e13 after 4 to 0 on event 1						
rd13sdddl3		shutdown bank d l3 after 5 to 0 on event 1						
rd13sdddn11		shutdown bank d n11 after 4 to 0 on event 1					On	Off

4. Ensure Auto Event Triggers is assigned to Event 1 as follows: Open standard trigger file. Right click on Event 1 trigger and select edit. The description should be "Rod C5 > 34 steps. " The Event Code should read, "pc_rdac0032a>=30."
5. Place simulator in RUN and acknowledge any alarms.
7. ENSURE a marked-up copy of AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA," signed (circled-and-slashed) through Step. 16 is available for each applicant.
8. ENSURE "Extra Operator" is present in the simulator.
9. Place simulator in FREEZE until Examiner cue is given.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.a
2011-10 NRC Exam

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 cue sheet I provided you.

INITIAL CONDITIONS:

1. The plant was operating at 100% power when shutdown rod C-5 dropped into the core due to a power cabinet card problem about 15 minutes ago.
2. AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA," was entered and has been performed through Step 16.
3. Reactor power was reduced to $\leq 75\%$ per the instruction.
4. The problem has been repaired.
5. The Unit Supervisor, Shift Manager, Reactor Engineering and STA have agreed on a retrieval rate of 64 steps per minute and a maximum power level of 75%.
6. You are the Operator-at-the-Controls.

INITIATING CUES:

The Unit Supervisor directs you to realign C-5 rod starting at AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA," Step 17.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 17. PLACE rod control in bank select position for affected bank.</p> <p><u>STANDARD:</u></p> <p>____ Applicant rotates 1-RBSS, ROD BANK SELECT to the left from the "MAN" position to the "SDD" position to select shutdown bank D.</p> <p>Step is critical to assure proper bank is selected to be aligned.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>____ SAT</p> <p>____ UNSAT</p>
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WATTS BAR NUCLEAR PLANT JOB PERFORMANCE MEASURE

B.1.

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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NOTE

Computer Points for individual rods are C0009A through C0035A for shutdown banks and C0039A through C0076A for control banks. Average rod position points are U0001 through U0013. Rod step position points are U0049 through U0056. All points are in ICS "GROUP DISPLAY MENU" listed in "SPECIAL GROUPS" as "SG 1".

STEP 2: 18. **RECORD** the value of the following:

- Affected bank's step counter(s)
- Computer step indication for rods in affected bank
- Bank overlap counter (N/A for shutdown bank) [control rod drive room, el 782, panel 1-L-122]

___ SAT

___ UNSAT

STANDARD:

Applicant records:

Shutdown Bank Group Step Counter 1-SBDG1 - 228 steps

ICS Step Indication for Shutdown Bank D

C-5	0 steps
E-13	228 steps
N11	229 steps
L03	229 steps

Applicant determines that the Bank overlap counter is not applicable to Shutdown Bank D.

COMMENTS:

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p>STEP 3: 19. DISCONNECT all lift coils (toggle up) in affected bank, EXCEPT for dropped RCCA.</p> <p><u>STANDARD:</u></p> <p>___ Applicant places toggle switches for rods E-13, N-11, & L-3 in the disconnect position (up position) in cabinet 1-XS-85-1.</p> <p>Step is critical to assure proper rod is selected to be aligned and the remaining rods are not inadvertently positioned in the following steps.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE</p> <p>The next step will cause a CONTROL ROD URGENT FAILURE alarm (except for Shutdown Banks C and D). After the rods are aligned and the rod position is updated, then this alarm will be reset.</p>	
<p>EXAMINER: During the next step, annunciator 83-D will reflash, due to rod to bank deviation.</p>	
<p>STEP 4: 20. INSERT affected RCCA greater than 10 steps, and CONTINUE until NO RCCA motion observed on RPI.</p> <p><u>STANDARD:</u></p> <p>Applicant inserts rods by placing 1-FLRM, ROD MOTION CONTROL IN-OUT to the "IN" position to insert rod C-5 at least 10 steps on step counter 1-SBDG1, SHUTDOWN BANK D1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5:</u> 21. SET affected step counter to "000".</p> <p><u>STANDARD:</u></p> <p>The applicant lifts the cover on 1-SBDG1, SHUTDOWN BANK D 1 and depresses the reset button (center button labeled "RS") to set the counter to "000". The applicant may depress the "D" button multiple times to set the step counter to "000". The applicant closes the cover.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> 22. USE the Plant Computer to set affected bank's position to zero:</p> <p>a. SELECT NSSS AND BOP.</p> <p>b. SELECT ROD BANK UPDATE.</p> <p>c. ENTER 0 in affected bank position, THEN PRESS F3 to save.</p> <p><u>STANDARD:</u></p> <p>Applicant uses the ICS plant computer Rod Bank update function to set Shutdown Bank D Step Counter to "0".</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 7:</u> 23. DO NOT CONTINUE UNTIL the following agree on a retrieval rate:</p> <ul style="list-style-type: none">• Unit SRO• Shift Manager• Reactor Engineering• STA <p><u>STANDARD:</u></p> <p>Applicant determines that the above personnel have agreed to retrieval rate and maximum power level per initial conditions.</p> <p>CUE: If any one of the above are contacted, state that the Unit SRO, Shift Manager, Rx Engineering and STA are in agreement to retrieve the rod at normal manual speed of 64 steps/minute. Maximum power level is 75%. Recover from present power level. This information is provided in the INITIAL CONDITIONS.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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NOTE

Boric acid requirements can be determined using Reactivity Briefing Sheet.

EXAMINER: The applicant may refer to the **REACTIVITY BRIEFING BOOK** for thumb rule values for boron for possible use in Step 24 (JPM Step 8).

STEP 8: 24. **ALIGN** RCCA to affected bank position:

- (ρ) **USING** rod control in Bank Select, position affected RCCA to bank affected position recorded in Step 18
- (ρ) **BORATE** RCS to maintain T-ave and T-ref within 3°F.
- **MAINTAIN** less than or equal to 75% Reactor power.

STANDARD:

Applicant attempts to realign the rod by placing 1-FLRM, ROD MOTION CONTROL IN-OUT to the OUT position AND determines that the rod is withdrawing. Applicant stops withdrawing rod after recognizing other rods have dropped into core.

COMMENTS:

___ SAT

___ UNSAT

EXAMINER: During the performance of step 24 (JPM Step 8.) when Rod C-5 has been withdrawn approximately 35 steps, all rods in Shutdown Bank D will drop. The applicant will perform the **IMMEDIATE ACTIONS** of AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA."

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 9:</u> 1. PERFORM the following:</p> <p align="center">a. CHECK ONLY ONE rod dropped</p> <p><u>STANDARD:</u></p> <p>Applicant determines that multiple rods have dropped and enters the RESPONSE NOT OBTAINED column for contingency actions.</p> <p><u>COMMENTS:</u></p>	<p align="center">___ SAT</p> <p align="center">___ UNSAT</p>
<p><u>STEP 10:</u> 1. PERFORM the following:</p> <p align="center">RESPONSE NOT OBTAINED:</p> <p align="center">___ a. IF more than one rod dropped, THEN (p) TRIP reactor **GO TO E-0, Reactor Trip or Safety Injection.</p> <p><u>STANDARD:</u></p> <p>Applicant places the Reactor Trip hand switch on 1-M-4 or 1-M-6 to the TRIP position. The applicant begins performance E-0, "Reactor Trip or Safety Injection."</p> <p>Step is critical to task performance as two or more control rods dropped requires reactor trip.</p> <p>CUE: When performer begins to perform to E-0, "Reactor Trip or Safety Injection" actions, inform him/her that the JPM is complete. State that "another operator will continue from here".</p> <p><u>COMMENTS:</u></p> <p align="center">END OF TASK</p>	<p align="center">CRITICAL STEP</p> <p align="center">___ SAT</p> <p align="center">___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. The plant was operating at 100% power when shutdown rod C-5 dropped into the core due to a power cabinet card problem about 15 minutes ago.
2. AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA," was entered and performed through Step 16.
3. Reactor power was reduced to $\leq 75\%$ per the instruction.
4. The problem has been repaired.
5. The Unit Supervisor, Shift Manager, Reactor Engineering and STA have agreed on a retrieval rate of 64 steps per minute and a maximum power level of 75%.
6. You are the Operator-at-the-Controls.

INITIATING CUES:

The Unit Supervisor directs you to realign the C-5 rod starting at AOI-2, "Malfunction of Reactor Control System," Section 3.3, "Dropped RCCA," Step 17.

B.1.b
Evaluate Pressurizer Level Trend And
Take Proper Actions.

B.1.b

EVALUATION SHEET

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b

2011-10 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 307.
 - c. Right “click” on IC 307.
 - d. Select Reset on the drop down menu.
 - e. Right “click” on RESET.
 - f. Enter the password for IC 307.
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.
3. Place simulator in RUN and acknowledge any alarms.
4. ENSURE a marked-up copy of AOI-6, “Small Reactor Coolant System Leak” is available for each applicant and is signed (circled-and-slashed) through Step 15. Step 16 is circled.
5. ENSURE “Extra Operator” is present in the simulator.
6. Place simulator in FREEZE until Examiner cue is given.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.b
2011-10 NRC Exam**

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 cue sheet I provided you.

INITIAL CONDITIONS:

1. The Unit is operating at 100 % power.
2. A small leak has occurred.
3. Letdown and Charging have been isolated per AOI-6, "Small Reactor Coolant System Leak."
4. You are an extra operator assigned to the crew.

INITIATING CUES:

1. The Unit Supervisor has directed you to perform AOI-6, "Small Reactor Coolant System Leak," Step 16.
2. You are to notify the Unit Supervisor when Step 16 is complete.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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START TIME: _____

EXAMINER: AOI-6, "Small Reactor Coolant System Leak," RESPONSE NOT OBTAINED is broken into JPM Steps 1 through 8.

NOTE

Pzr level must be allowed time to change following changes in charging flow.

STEP 1: 16. **CHECK** pzr level DROPPING or STABLE.

___ SAT

___ UNSAT

STANDARD:

Applicant observes a RISING trend on 1-LR-68-339 PZR LEVEL - % enters RESPONSE NOT OBTAINED column for actions.

Applicant may also use the ICS computer to observe pressurizer level trends.

COMMENTS:

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 2:</u> 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>a. OPEN 1-FCV-70-143.</p> <p><u>STANDARD:</u></p> <p>___ 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.</p> <p>NOTE: When the applicant opens 1-FCV-70-143, Annunciator 239-D may be received. This alarm occurs whenever 1-FCV-70-143 is OPEN and flow on 1-FS-70-8 is less than 230 gpm. It will only be received if 1-FCV-70 143 travels full open w/o opening 1-FCV-70-85.</p> <p>Step is critical to establish cooling water to the excess letdown heat exchanger prior to establishing flow from the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p>STEP 3: 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>b. OPEN 1-FCV-70-85.</p> <p><u>STANDARD:</u></p> <p>___ 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.</p> <p>Applicant may use 1-FI-70-84 (panel 1-M-27B) to monitor flow.</p> <p>NOTE: When the applicant opens 1-FCV-70-85, Annunciator 239-D will clear as soon as flow is greater than 230 gpm</p> <p>Step is critical to establish cooling water to the excess letdown heat exchanger prior to establishing flow from the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>c. OPEN 1-FCV-62-54.</p> <p><u>STANDARD:</u></p> <p>___ At panel 1-M-5, the applicant places 1-HS-62-54 to OPEN and ensures the RED light is LIT and the GREEN light is OFF.</p> <p>Step is critical to establish excess letdown flow from the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>d. OPEN 1-FCV-62-55.</p> <p><u>STANDARD:</u></p> <p>___ The applicant places 1-HS-62-55 to OPEN and ensures RED light is LIT and the GREEN light is OFF.</p> <p>Step is critical to establish excess letdown flow from the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>e. ENSURE 1-FCV-62-59 in NORMAL.</p> <p><u>STANDARD:</u></p> <p>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 7:</u> 16. RESPONSE NOT OBTAINED</p> <p>IF pwr level RISING, OR Leak verified isolated using Appendix B THEN PLACE excess letdown in service:</p> <p>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></p> <p>___ 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.</p> <p>Step is critical to establish excess letdown flow from the RCS.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.b
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p>STEP 8: 16. RESPONSE NOT OBTAINED</p> <p style="text-align: center;">STABILIZE pwr level by adjusting seal injection and excess letdown flows. ** GO TO Step 20.</p> <p><u>STANDARD:</u></p> <p>Applicant observes pwr level trend on 1-LR-68-339. Applicant may also set up a trend of pwr level on ICS computer using inputs from 1-LI-68- 339A, 1-LI-68-335A and 1-LI-68-320.</p> <p>The applicant notifies the Unit Supervisor that Step 16 is complete.</p> <p>CUE: When notified, acknowledge the report.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center; margin-top: 20px;">END OF TASK</p>	<p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. The Unit is operating at 100 % power.
2. A small leak has occurred.
3. Letdown and Charging have been isolated per AOI-6, "Small Reactor Coolant System Leak".
4. You are an extra operator assigned to the crew.

INITIATING CUES:

1. The Unit Supervisor has directed you to perform AOI-6, "Small Reactor Coolant System Leak," Step 16.
2. You are to notify the Unit Supervisor when Step 16 is complete.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.c
2011-10 NRC Exam**

**B.1.c
Align an RHR train for Hot Leg
Recirculation per ES-1.4.**

B.1.c
2011-10 NRC Exam

<u>Task:</u>	Align an RHR train for Hot Leg Recirculation per ES-1.4		
<u>Alternate Path:</u>	During alignment of "A" Train, 1-FCV-74-33 Train "A" RHR Crosstie, will not open, therefore the operator will need to realign "A" Train RHR to cold leg recirc and then align "B" RHR Train to Hot Leg Recirc.		
<u>Facility JPM #:</u>	3-OT-JPMR071A		
<u>Safety Function:</u>	3	<u>Title:</u>	RCS Pressure Control
<u>K/A</u>	006 A4.04	Ability to manually operate and/or monitor in the control room: RHRS.	
<u>Rating(s):</u>	3.7 / 3.6	<u>CFR:</u>	41.7/45.5 to 45.8
<u>Evaluation Method:</u>	Simulator	<input checked="" type="checkbox"/> In-Plant	<input type="checkbox"/> Classroom
<u>References:</u>	ES-1.4, "Transfer to Hot Leg Recirculation," Rev. 11.		
<u>Task Number:</u>	RO-113-ES-1.4-001	<u>Title:</u>	
<u>Task Standard:</u>	Applicant attempts to align RHR Train "A" to supply hot leg recirc. Since the attempt is unsuccessful due to a valve failure, the applicant places RHR Train "B" in hot leg recirc.		
<u>Validation Time:</u>	12 minutes	<u>Time Critical:</u>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
=====			
<u>Applicant:</u>	_____	_____	Time Start: _____
	NAME	SSN	Time Finish: _____
<u>Performance Rating:</u>	SAT _____ UNSAT _____	Performance Time _____	
<u>Examiner:</u>	_____	_____ / _____	
	NAME	SIGNATURE	DATE
=====			

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.c
2011-10 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 312.
 - c. Right “click” on IC 312.
 - d. Select Reset on the drop down menu.
 - e. Right “click” on RESET.
 - f. Enter the password for IC 312.
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.

3. ENSURE the following information appears on the Director Summary Screen:

Key	Type	Event	Delay	Inserted	Ramp	Initial	Final	Value
hs-74-33a	R		00:00:00		00:00:00		close	close

3. Place simulator in RUN and acknowledge any alarms.
6. Place simulator in RUN and acknowledge any alarms.
7. Place simulator in FREEZE until Examiner cue is given.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.c
2011-10 NRC Exam**

DIRECTIONS 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. Three hours have elapsed since the Large Break LOCA occurred.**
- 3. ES-1.3, "Transfer to Containment Sump" has been completed.**
- 4. You are the Operator at the Controls.**

INITIATING CUES:

- 1. The Unit Supervisor directs you to align RHR for hot leg recirculation using ES-1.4, "Transfer to Hot Leg Recirculation."**
- 2. You are to notify the Unit Supervisor when RHR is aligned for hot leg recirculation.**

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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START TIME: _____

NOTE If problems are encountered during transfer to hot leg, then cold leg recirc should be continued or restored during TSC evaluation of corrective actions.

STEP 1: 1. **ALIGN** RHR Train A for hot leg recirc:

a. **CLOSE** RHR Train A cold leg isolation valve 1-FCV-63-93.

STANDARD:

Applicant closes 1-FCV-63-93, RHR Train A cold leg isolation valve, by rotating handswitch to the left, and observing that the Red indicating light is DARK and the Green indicating light is LIT.

EXAMINER: 131-F ESF COMPONENT NOT NORMAL will alarm when 1-FCV-63-93 is closed. This is an expected alarm.

COMMENTS:

___ SAT

___ UNSAT

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 2:</u> 1. ALIGN RHR Train A for hot leg recirc:</p> <p style="padding-left: 40px;">b. ENSURE RHR Train B discharge crosstie valve 1-FCV-74-35 CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that 1-FCV-74-35, RHR Train B discharge crosstie valve is closed by observing that the Red indicating light is DARK and the Green indicating light is LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3.</u> 1. ALIGN RHR Train A for hot leg recirc:</p> <p style="padding-left: 40px;">c. ENSURE RHR Train A spray valve 1-FCV-72-40 CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that 1-FCV-72-40, RHR Train A spray valve is closed by observing that the Red indicating light is DARK and the Green indicating light is LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT

JOB PERFORMANCE MEASURE

B.1.c

2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4.</u> 1. ALIGN RHR Train A for hot leg recirc:</p> <p> d. ENSURE RHR Train B spray valve 1-FCV-72-41 CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that 1-FCV-72-41, RHR Train B spray valve is closed by observing that the Red indicating light is DARK and the Green indicating light is LIT.</p> <p><u>COMMENTS:</u></p>	<p>____ SAT</p> <p>____ UNSAT</p>
<p>EXAMINER: An override is active which prevents the applicant from opening 1-FCV-74-33.</p>	

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5.</u> 1. ALIGN RHR Train A for hot leg recirc:</p> <p> e. OPEN RHR Train A discharge crosstie valve 1-FCV-74-33.</p> <p><u>STANDARD:</u></p> <p>Applicant attempts to open 1-FCV-74-33, RHR Train A discharge crosstie valve, by rotating handswitch to the right.</p> <p>EXAMINER: Valve will NOT open.</p> <p>CUE: If dispatched to determine the cause of 1-FCV-74-33 failing to open, repeat back information provided by the applicant. State that 1-FCV-74-33 appears to be jammed in the closed position.</p> <p>Applicant enters RNO column, since the failure of 1-FCV-74-33 will prevent completion of Step 1 Action/Expected Response actions.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> Step 1 <u>RESPONSE NOT OBTAINED</u></p> <p>IF Train A NOT available for hot leg recirc, THEN:</p> <p>1) RETURN RHR Train A to cold leg recirc alignment.</p> <p>2) GO TO Step 2.</p> <p><u>STANDARD:</u></p> <p>Applicant opens 1-FCV-63-93, RHR Train A cold leg valve to re-establish RHR Train A cold leg recirculation alignment.</p> <p>EXAMINER: 131-F ESF COMPONENT NOT NORMAL will clear, and then re-flash when 1-FCV-63-93 is opened.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 7:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p style="padding-left: 40px;">a. CLOSE RHR Train B cold leg isolation valve 1-FCV-63-94.</p> <p><u>STANDARD:</u></p> <p>___ Applicant closes 1-FCV-63-94, RHR Train B cold leg isolation valve, by rotating handswitch to the left, and observing that the Red indicating light is DARK and the Green indicating light is LIT.</p> <p>EXAMINER: 131-F ESF COMPONENT NOT NORMAL will alarm when 1-FCV-63-94 is closed. This is an expected alarm.</p> <p>Step is critical since it will allow RHR flow to be directed later to the correct hot leg.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p style="padding-left: 40px;">b. ENSURE RHR Train A discharge crosstie valve 1-FCV-74-33 CLOSED.</p> <p><u>STANDARD:</u></p> <p>(Applicant has already attempted to open 1-FCV-74-33 unsuccessfully.) Applicant determines that 1-FCV-74-33 is closed by observing the RED indicating light DARK, GREEN indicating light LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 9:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p>c. ENSURE RHR Train A spray valve 1-FCV-72-40 CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-FCV-72-40, RHR Train A spray valve is closed by observing Green indicating light is LIT and Red indicating light is DARK.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p>d. ENSURE RHR Train B spray valve 1-FCV-72-41 CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-FCV-72-41, RHR Train B spray valve is closed by observing Green indicating light is LIT and Red indicating light is DARK.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 11:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p style="padding-left: 40px;">e. OPEN RHR Train B discharge crosstie valve 1-FCV-74-35.</p> <p><u>STANDARD:</u></p> <p>___ Applicant opens 1-FCV-74-35, RHR Train B discharge crosstie valve, by rotating handswitch to the right, and observing that the Red indicating light is LIT and the Green indicating light is DARK.</p> <p>Step is critical since it will allow RHR flow to be directed to the hot leg.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 12:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p style="padding-left: 40px;">f. OPEN RHR hot leg injection valve 1-FCV-63-172</p> <p><u>STANDARD:</u></p> <p>___ Applicant opens 1-FCV-63-172, RHR hot leg injection valve, by rotating handswitch to the right, and observing that the Red indicating light is LIT and the Green indicating light is DARK.</p> <p>Step is critical since it will allow RHR flow to be directed to the hot leg.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 13:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p>g. ENSURE RHR heat exchanger outlet 1-FCV-74-28 OPEN.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-FCV-74-28 RHR heat exchanger outlet valve is open by observing 1-XI-74-28 RHR HX B OUTLET FLOW CNTL FCV-74-28 Red light is LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 14:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p>h. ENSURE RHR hot leg flow on 1-FI-63-173.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures flow is indicated on 1-FI-63-173, RHR to HL 1&3 FLOW</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.c
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p><u>STEP 15:</u> 2. ALIGN RHR Train B for hot leg recirc:</p> <p>i. CLOSE RHR Train A cold leg isolation 1-FCV-63-93.</p> <p><u>STANDARD:</u></p> <p>___ Applicant closes 1-FCV-63-93, RHR Train A cold leg isolation valve, by rotating handswitch to the left, and observing that the Red indicating light is DARK and the Green indicating light is LIT.</p> <p>Step is critical since it will allow RHR flow to be directed to the hot leg.</p> <p>Applicant informs the Unit Supervisor that RHR has been aligned for hot leg recirculation.</p> <p>CUE: Repeat back information provided by the applicant to the Unit Supervisor.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. A Large Break LOCA has occurred.
2. Three hours have elapsed since the Large Break LOCA occurred.
3. ES-1.3, "Transfer to Containment Sump" has been completed.
4. You are the Operator at the Controls.

INITIATING CUES:

1. The Unit Supervisor directs you to align RHR for hot leg recirculation using ES-1.4, "Transfer to Hot Leg Recirculation."
2. You are to notify the Unit Supervisor when RHR is aligned for hot leg recirculation.

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.d
2011-10 NRC Exam

B.1.d
Start a Reactor Coolant Pump

B.1.d
2011-10 NRC Exam

EVALUATION SHEET

Task: Start a Reactor Coolant Pump.

Alternate Path: After RCP is started per SOI-68.02, its #1 seal will fail requiring the performer to stop the RCP based on pump bearing temperature.

Facility JPM #: 3-OT-JPMR028A

Safety Function: 4P **Title:** Heat Removal From Reactor Core

<u>K/A</u>	003 A1.02	Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RCPS controls including:
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Rating(s): 2.9/2.9 **CFR:** 41.5 / 45.5

Evaluation Method:	Simulator	X	In-Plant	Classroom
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References: SOI-68.02 "Reactor Coolant Pumps" Rev. 34
AOI-24 "RCP Seal Abnormalities During Pump Operation" Rev 29

Task Number: RO-068-SOI-68-007 **Title:**

Task Standard: The applicant :

- 1.) Performs action of SOI-68.02, "Reactor Coolant Pumps," to start RCP #1.
- 2.) Evaluates RCP #1 bearing temperatures, determines that temperature is rising and stops RCP #1 due to high bearing temperature.

Validation Time: 18 minutes **Time Critical:** Yes No **X**

Applicant: _____ **Time Start:** _____
 _____ **Docket No.** _____
 _____ **Time Finish:** _____

Performance Rating: SAT ____ UNSAT ____ Performance Time ____

Examiner: _____ / _____
NAME SIGNATURE DATE

COMMENTS

WATTS BA NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.d
2011-10 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 308.
 - c. Right “click” on IC 308.
 - d. Select Reset on the drop down menu.
 - e. Right “click” on RESET.
 - f. Enter the password for IC 308
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.

3. ENSURE the following information appears on the Director Summary Screen:

	Key		Type	Event	Delay	Inserted	Ramp	Initial	Final	Value
	cv17a	rcp 1 seal failure rcp #1	M	1	00:00:00		00:00:00		100	0

4. Place simulator in RUN and acknowledge any alarms.
5. ENSURE a marked-up copy of SOI-68.02, “Reactor Coolant Pumps,” signed off (circled-and-slashed) to Step 6 is available for each applicant
6. ENSURE “Extra Operator” is present in the simulator.
7. Place simulator in FREEZE until Examiner cue is given.
8. When the applicant has stopped RCP 1 Oil lift pump, the Examiner will cue the Console Operator to enter Event 1, causing the failure of the #1 Seal Package.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.d
2011-10 NRC Exam**

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 cue sheet I provided you.

INITIAL CONDITIONS:

1. The Unit is in Mode 3, Hot Standby.
2. RCP # 1 has been shut down 24 hours for repairs to the motor leads.
3. Maintenance reported the repairs have been completed.
4. An AUO has performed Appendix C, RCP Local Inspection.
5. SOI-68.02, "Reactor Coolant Pumps," Section 5.0, "Startup," has been completed through Step 6
6. Section 4.2 Field Preparations are complete.

INITIATING CUES:

The Unit Supervisor has directed you to start RCP #1 using SOI-68.02, "Reactor Coolant Pumps," Section 5.0, "Startup."

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.d
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> [7] ENSURE the following parameters [0-M-27B]:</p> <p>[7.1] Thermal Barrier Flow 35-50 gpm</p> <p>[7.2] LWR Oil Clr flow greater than 5 gpm</p> <p>[7.3] UPR Oil Clr flow greater than 170 gpm</p> <p>[7.4] RCP Seal Water Hx Flow greater than 215 gpm</p> <p><u>STANDARD:</u></p> <p>Applicant observes Thermal Barrier (1-FI-70-115), Lower oil cooler (1-FI-70-119), Upper oil cooler (1-FI-70-116), and Seal Water HTX (1-FI-70-176) flows within the specified ranges.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p style="text-align: center;">CAUTION</p> <p>Inadvertent RCP start may occur if RCP alternate supply breaker is left in its automatic configuration (pulled out).</p>	
<p style="text-align: center;">NOTE</p> <p>Oil Lift Pump is started 2 minutes before RCP start.</p>	

WATTS BAR NUCLEAR PLANT JOB PERFORMANCE MEASURE

B.1.d
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STEP/STANDARD					SAT/UNSAT																									
<p>STEP 2: [8] START applicable Oil Lift Pump:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center; padding: 5px;">NOMENCLATURE</th> <th style="text-align: center; padding: 5px;">LOCATION</th> <th style="text-align: center; padding: 5px;">POSITION</th> <th style="text-align: center; padding: 5px;">UNID</th> <th style="text-align: center; padding: 5px;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">RCP 1 NORMAL BKR & LIFT PUMP</td> <td style="text-align: center; padding: 5px;">1-M-5</td> <td style="padding: 5px;">PULL OUT,[C.8] THEN START</td> <td style="text-align: center; padding: 5px;">1-HS-68-8AA</td> <td style="width: 50px;"></td> </tr> <tr> <td style="padding: 5px;">RCP 2 NORMAL BKR & LIFT PUMP</td> <td style="text-align: center; padding: 5px;">1-M-5</td> <td style="padding: 5px;">PULL OUT,[C.8] THEN START</td> <td style="text-align: center; padding: 5px;">1-HS-68-31AA</td> <td style="width: 50px;"></td> </tr> <tr> <td style="padding: 5px;">RCP 3 NORMAL BKR & LIFT PUMP</td> <td style="text-align: center; padding: 5px;">1-M-5</td> <td style="padding: 5px;">PULL OUT,[C.8] THEN START</td> <td style="text-align: center; padding: 5px;">1-HS-68-50AA</td> <td style="width: 50px;"></td> </tr> <tr> <td style="padding: 5px;">RCP 4 NORMAL BKR & LIFT PUMP</td> <td style="text-align: center; padding: 5px;">1-M-5</td> <td style="padding: 5px;">PULL OUT,[C.8] THEN START</td> <td style="text-align: center; padding: 5px;">1-HS-68-73AA</td> <td style="width: 50px;"></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>___ Applicant pulls out handswitch 1-HS-68-8AA RCP 1 NORMAL BKR&LIFT PUMP and rotates the handswitch to the START position.</p> <p>Step is critical to assure oil lift pressure thrust bearings to prevent metal to metal contact on bearing surfaces when pump is started from idle.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT,[C.8] THEN START	1-HS-68-8AA		RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT,[C.8] THEN START	1-HS-68-31AA		RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT,[C.8] THEN START	1-HS-68-50AA		RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT,[C.8] THEN START	1-HS-68-73AA		<p>CRITICAL TASK</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																										
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RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT,[C.8] THEN START	1-HS-68-73AA																											
<p>STEP 3: [9] VERIFY #1 seal ΔP greater than 200 psid [1-M-5].</p> <p>STANDARD:</p> <p>Applicant locates 1-PDI-62-8A, RCP 1 #1 SEAL ΔP on panel 1-M-5 and observes that the indicator is off-scale high, indicating greater than 400 psid.</p> <p>COMMENTS:</p>					<p>___ SAT</p> <p>___ UNSAT</p>																									

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> [10] VERIFY 8 to 13 gpm to RCP seal [1-M-5].</p> <p><u>STANDARD:</u></p> <p>Applicant locates 1-FI-62-1A, RCP 1 SEAL SUP FLOW and observes flow at 8 approximately gpm.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [11] ENSURE VCT press at least 15 psig [1-M-6].</p> <p><u>STANDARD:</u></p> <p>Applicant locates 1-PI-62-122, VCT PRESS on panel 1-M-6 and observes pressure greater than 15 psig (approximately 20 psig).</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> [12] VERIFY #1 seal leakoff greater than 0.2 gpm, or within Normal Operating Range for existing #1 Seal ΔP (see Appendix B).</p> <p><u>STANDARD:</u></p> <p>Applicant locates 1-FR-62-23, SEAL LEAKOFF - LO RANGE - GPM 1&2 on panel 1-M-5 and observes that the RED indicator is off-scale high, indicating leakoff greater than 0.2 gpm.</p> <p>Applicant locates 1-FR-62-24, SEAL LEAKOFF - HI RANGE - GPM 1&2 on panel 1-M-5 and observes that the RED indicator is at approximately 3.5 gpm.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> [13] IF leakoff flow is NOT established, THEN GO TO Section 8.0.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that leakoff flow is established and marks the step as "N/A."</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p>STEP 8: [14] IF starting RCP for fill and vent only, THEN ENSURE RCS press is greater than 325 psig but less than 1000 psig.</p> <p style="padding-left: 40px;">[14.1] OPEN 1-FCV-62-53, #1 SEAL BYPASS [1-M-5] to VENT RCP.</p> <p style="padding-left: 40px;">[14.2] CLOSE 1-FCV-62-53, #1 SEAL BYPASS [1-M-5].</p> <p>STANDARD:</p> <p style="padding-left: 40px;">Applicant determines that the RCP is NOT being started for fill and vent and marks the step as "N/A."</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE</p> <p>Step 5.0[15] prevents excessive Rod motion upon starting RCP.</p>	
<p>STEP 9: [15] IF restarting RCP with Control Rods withdrawn, THEN ENSURE Rod Bank Select in MANUAL.</p> <p>STANDARD:</p> <p style="padding-left: 40px;">Applicant locates CERPI MONITOR 1 and CERPI MONITOR 2 on panel 1-M-4 and observes that all rods, control and shutdown are fully inserted.</p> <p style="padding-left: 40px;">Applicant marks the step as "N/A."</p> <p style="padding-left: 40px;">Applicant locates 1-RBSS, ROD BANK SELECT and observes that the selector switch is in the "MAN" position.</p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
CAUTION To reduce thermal shock to RCP shaft and seals, a maximum of 1°F per minute temp reduction will be observed, until bearing temp is less than 225°F.	
<p><u>STEP 10:</u> [16] IF restarting RCP after stopping due to high temp limits caused by loss of Injection Water and High CCS temp, THEN ENSURE following parameters established to prevent thermal shock to RCP parts:</p> <p style="margin-left: 40px;">[16.1] CCS temp to thermal barrier less than 105°F (CCS Hx outlet)</p> <p style="margin-left: 40px;">[16.2] Seal leakoff temp less than 180°F</p> <p style="margin-left: 40px;">[16.3] 0.2 to 5 gpm seal leakoff</p> <p><u>STANDARD:</u></p> <p style="margin-left: 40px;">Applicant determines from the INITIAL CONDITIONS that the pump is not being restarted after a high temperature condition.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 11:</u> [17] ENSURE Aux OC Bkr, CLOSED.</p> <p><u>STANDARD:</u></p> <p style="margin-left: 40px;">Applicant determines that the RED indicating light for RCP 1 Aux Overcurrent Protection ACB is LIT (light is located above 1-HS-68-8BA, RCP 1 ALTERANTE BKR & XFRE SELECTOR.)</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 12:</u> [18] IF starting RCP 1, THEN ENSURE Pzr spray, 1-PCV-68-340D, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant observes 1-XI-68-340D PZR SPRAY LOOP 1. GREEN light is LIT. IF RED indicating light is LIT, THEN the applicant locates 1-PIC-68-340D LOOP 1 SPRAY CONTROL on panel 1-M-4 and lifts the toggle switch up to place the controller in MANUAL. The applicant then slides the toggle to the left and observes that 1-XI-68-340D PZR SPRAY LOOP 1 RED indicating light is DARK and the GREEN indicating light is LIT.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 13:</u> [19] IF starting RCP 2, THEN ENSURE Pzr spray, 1-PCV-68-340B, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant marks the step as "N/A" since RCP 1 is being started.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 14:</u> [20] ANNOUNCE RCP start on PA system.</p> <p><u>STANDARD:</u></p> <p style="text-align: center;">EXAMINER CUE: When the applicant addresses the PA announcement, state “another operator will handle the PA announcement.”</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE</p> <p>Below 15% power with station service NOT transferred, the Alternate handswitch is used to start RCP.</p>	

WATTS BAR NUCLEAR PLANT JOB PERFORMANCE MEASURE

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STEP/STANDARD					SAT/UNSAT																																													
<p>STEP 15: [21] START selected RCP (N/A HSs NOT used):</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <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> <th style="text-align: center;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>RCP 1 NORMAL BKR & LIFT PUMP</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-8AA</td> <td></td> </tr> <tr> <td>RCP 1 ALTERNATE BKR & XFER SELECTOR</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-8BA</td> <td></td> </tr> <tr> <td>RCP 2 NORMAL BKR & LIFT PUMP</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-31AA</td> <td></td> </tr> <tr> <td>RCP 2 ALTERNATE BKR & XFER SELECTOR</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-31BA</td> <td></td> </tr> <tr> <td>RCP 3 NORMAL BKR & LIFT PUMP</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-50AA</td> <td></td> </tr> <tr> <td>RCP 3 ALTERNATE BKR & XFER SELECTOR</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-50BA</td> <td></td> </tr> <tr> <td>RCP 4 NORMAL BKR & LIFT PUMP</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-73AA</td> <td></td> </tr> <tr> <td>RCP 4 ALTERNATE BKR & XFER SELECTOR</td> <td>1-M-5</td> <td>PUSH IN, THEN START</td> <td>1-HS-68-73BA</td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;">STANDARD:</p> <p>Applicant enters "N/A" for RCP 2, RCP 3 and RCP 4 handswitches. The applicant enters "N/A" for 1-HS-68-AA, RCP 1 NORMAL BKR & LIFT PUMP.</p> <p>Applicant locates 1-HS-68-8BA RCP 1 ALTERNATE BKR & XFRE SELECTOR, observes that the handswitch is pushed in.</p> <p>___ The applicant then rotates 1-HS-68-8BA RCP 1 ALTERNATE BKR & XFRE SELECTOR to the right to the START position.</p> <p>Applicant observes the RED indicating light LIT and the GREEN indicating light DARK on 1-HS-68-BA. The applicant may also observe flow rising on 1-FI-68-6A, 6B, and 6D LOOP 1 FLOW indicators.</p> <p>Step is critical since this action starts RCP 1, the desired RCP.</p> <p>COMMENTS:</p> <div style="border: 1px solid black; height: 100px; margin-top: 10px;"></div>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-8AA		RCP 1 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-8BA		RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-31AA		RCP 2 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-31BA		RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-50AA		RCP 3 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-50BA		RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PUSH IN, THEN START	1-HS-68-73AA		RCP 4 ALTERNATE BKR & XFER SELECTOR	1-M-5	PUSH IN, THEN START	1-HS-68-73BA		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																																														
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<p>EXAMINER: CUE CONSOLE OPERATOR to activate Event 1 in the following step when oil lift pump is stopped. INSERT MALFUNCTION CV17A @ 100% fails the Number 1 seal (high pressure) on Reactor Coolant Pump 1.</p>																																																		

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STEP/STANDARD	SAT/UNSAT																									
<p>STEP 16: [22] WHEN RCP has operated 1 minute, THEN STOP Oil Lift Pump (N/A HSs NOT used):</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"><thead><tr><th style="width: 30%;">NOMENCLATURE</th><th style="width: 15%;">LOCATION</th><th style="width: 20%;">POSITION</th><th style="width: 20%;">UNID</th><th style="width: 15%;">PERF INITIAL</th></tr></thead><tbody><tr><td>RCP 1 NORMAL BKR & LIFT PUMP</td><td>1-M-5</td><td>PULL OUT [C.8] THEN STOP</td><td>1-HS-68-8AA</td><td></td></tr><tr><td>RCP 2 NORMAL BKR & LIFT PUMP</td><td>1-M-5</td><td>PULL OUT [C.8], THEN STOP</td><td>1-HS-68-31AA</td><td></td></tr><tr><td>RCP 3 NORMAL BKR & LIFT PUMP</td><td>1-M-5</td><td>PULL OUT [C.8], THEN STOP</td><td>1-HS-68-50AA</td><td></td></tr><tr><td>RCP 4 NORMAL BKR & LIFT PUMP</td><td>1-M-5</td><td>PULL OUT [C.8], THEN STOP</td><td>1-HS-68-73AA</td><td></td></tr></tbody></table> <p>STANDARD:</p> <p>Applicant enters "N/A" for RCP 2, RCP 3 and RCP 4 handswitches.</p> <p>Applicant locates 1-HS-68-8AA RCP 1 NORMAL BKR&LIFT PUMP then rotates the handswitch to the STOP position.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	RCP 1 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT [C.8] THEN STOP	1-HS-68-8AA		RCP 2 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT [C.8], THEN STOP	1-HS-68-31AA		RCP 3 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT [C.8], THEN STOP	1-HS-68-50AA		RCP 4 NORMAL BKR & LIFT PUMP	1-M-5	PULL OUT [C.8], THEN STOP	1-HS-68-73AA		<div style="margin-bottom: 20px;">___ SAT</div> ___ UNSAT
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																						
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STEP/STANDARD	SAT/UNSAT
<p>EXAMINER: The following list is taken from AOI-24, "RCP MALFUNCTIONS DURING PUMP OPERATION," Attachment 2.</p> <p style="text-align: center;">RCP IMMEDIATE SHUTDOWN CRITERIA</p> <p>NOTE Exceeding any of the following setpoints will require an immediate pump shutdown. Operating limits can be found in SOI 68.02. This list is immediate shutdown criteria only.</p> <ul style="list-style-type: none">A. Shaft vibration greater than 20 mils or 15 mils with a rate of rise equal to 1 mil/hr (alarm at 15 mils). [Indicators located on 0-PNL-52-R139, Aux Inst Rm.]B. Frame vibration greater than 5 mils or 3 mils with a rate of rise of 0.2 mil/hr [Readings taken by Maint. at Aux Bldg L-Panels, el.737.]C. Motor windings temp greater than 302°F.D. Motor bearing temp greater than 195°F.E. Pump bearing temp greater than 225°F.F. Loss of CCS to oil coolers for greater than 10 minutes.G. No. 1 seal outlet temp greater than 225°F.H. No. 1 seal flow HIGH with rising pump bearing or #1 seal leakoff temperatures.I. No. 1 seal ΔP less than or equal to 200 psid.	

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STEP/STANDARD	SAT/UNSAT
<p>STEP 17: Applicant transitions to AOI-24 OR applicant determines that the bearing temperature will exceed limit and stops the Reactor Cooling pump.</p> <p>STANDARD:</p> <p style="padding-left: 40px;">Applicant transitions to AOI-24 or</p> <p>___ 1-HS-68-8BA is rotated to the STOP position and GREEN ACB light is LIT.</p> <p style="padding-left: 40px;">Step is critical to prevent additional damage to the #1 Seal Package on RCP 1.</p> <p style="padding-left: 40px;">The applicant may elect to stop RCP since it was just started.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>EXAMINER: The following steps are from AOI-24 Section 3.3.</p>	
<p>CAUTION A seal leakoff rise to greater than 2.0 gpm AFTER experiencing low leakoff of less than 0.8 gpm may indicate seal degradation. Plant Management should be notified of leakoff trends.</p> <p>NOTE 1 Anytime #1 seal leakoff flow exceeds the values shown on Attachment 1, system engineering should be requested to perform an evaluation of the #1 seal condition.</p> <p>NOTE 2 During plant startup after seal maintenance, the #1 seal may require 24 hours of run time before the seal seats fully and operates normally.</p> <p>NOTE 3 The #1 seal return should be isolated between 3 and 5 minutes after tripping an RCP to allow for pump coastdown.</p>	

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 18:</u> 1. MONITOR #1 seal leakoff equal to or greater than 6.0 gpm.</p> <p><u>STANDARD:</u></p> <p>Applicant determines seal leakoff flow is equal to or greater than 6 gpm by checking Seal Leakoff - High Range - flow recorder 1-FR-62-24 Red Pen.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 19:</u> 2. MONITOR RCPs lower bearing and #1 seal outlet temp STABLE or DROPPING.</p> <p><u>STANDARD:</u></p> <p>Applicant determines RCPs lower bearing and #1 seal outlet temperatures are increasing and transitions to the RNO column.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 20:</u> 2. RESPONSE NOT OBTAINED:</p> <p style="text-align: center;">GO TO Subsection 3.2, Step 2.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that a transition to Subsection 3.2, Step 2 is required.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 21:</u> 2. CHECK unit in Mode 1 or 2</p> <p><u>STANDARD:</u></p> <p>Applicant determines that the Unit is in Mode 3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 22:</u> 2. RESPONSE NOT OBTAINED:</p> <p>GO TO Step 4.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that Step 4 is to be implemented.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. The Unit is in Mode 3, Hot Standby.
2. RCP # 1 has been shut down 24 hours for repairs to the motor leads.
3. Maintenance reported the repairs have been completed.
4. An AUO has performed Appendix C, RCP Local Inspection.
5. SOI-68.02, "Reactor Coolant Pumps," Section 5.0, "Startup," has been completed through Step 6
6. Section 4.2 Field Preparations are complete.

INITIATING CUES:

The Unit Supervisor has directed you to start RCP #1 using SOI-68.02, "Reactor Coolant Pumps," Section 5.0, "Startup."

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**Align Control Rod Drive Mechanism
Coolers.**

**NOTE: This JPM may be conducted on
the Simulator OR in the Main Control
Room**

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EVALUATION SHEET

Task: Align Control Rod Drive Mechanism Coolers.

Alternate Path: n/a

Facility JPM #: 05-2009 NRC Exam

Safety Function: 5 **Title:** Containment Integrity

K/A 022 A4.01 Ability to manually operate and/or monitor in the control room: CCS fans

Rating(s): 3.6 / 3.6 **CFR:** 41.7 / 45.5 to 45.8

Evaluation Method: Simulator ☒ In-Plant ☐ Classroom ☐

References: SOI-30.03, "Containment HVAC and Pressure Control," Rev. 42.

Task Number: RO-30-SOI-30-002 **Title:** Startup/Place in Standby Alignment the Upper Compartment Coolers.

Task Standard: Applicant shuts down CRDM coolers C-A and D-B, and places CRDM coolers A-A and B-B in service using SOI-30.03, "Containment HVAC and Pressure Control."

Validation Time: 10 minutes **Time Critical:** Yes ☐ No ☒

Applicant: _____ _____ Time Start: _____
NAME Docket No. Time Finish: _____

Performance Rating: SAT ☐ UNSAT ☐ Performance Time _____

Examiner: _____ _____ / _____
NAME SIGNATURE DATE

COMMENTS

**WATTS B/NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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IF CONDUCTED IN THE SIMULATOR, THEN PERFORM THE FOLLOWING:

SIMULATOR OPERATOR INSTRUCTIONS:

- 1. ENSURE NRC Examination Security has been established.**
- 2. RESET to Initial Condition by performing the following actions:**
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).**
 - b. Locate IC 307.**
 - c. Right “click” on IC 307.**
 - d. Select Reset on the drop down menu.**
 - e. Right “click” on RESET.**
 - f. Enter the password for IC 307.**
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.**
 - h. Perform SWITCH CHECK.**
- 3. Place simulator in RUN and acknowledge any alarms.**
- 4. ENSURE the following cooler configuration:**

Lower CNTMT Coolers	Upper CNTMT Coolers	CRDM Coolers
A - RUNNING	A - RUNNING	A - OFF
B - RUNNING	B - RUNNING	B - OFF
C - RUNNING	C - RUNNING	C - RUNNING
D - OFF	D - OFF	D - RUNNING

- 5. Place simulator in FREEZE until Examiner cue is given.**

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.e
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IF CONDUCTED IN THE MAIN CONTROL ROOM, THEN:

Tools/Equipment/Procedures Needed:

ENSURE that copies of SOI-30.03, "Containment HVAC and Pressure Control," available to the EXAMINER, marked as "NRC EXAM MATERIAL, FOR TRAINING ONLY," for each applicant.

Begin the JPM at the Shift Manager's Desk.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.e
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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 cue sheet I provided you.

INITIAL CONDITIONS:

1. Predictive Maintenance has requested that the 1C-A CRDM Cooler be removed from service in order to perform maintenance on its 480V supply breaker.
2. You are an extra operator assigned to the shift.

INITIATING CUES:

1. The Unit Supervisor directs you to place 1A-A and 1B-B CRDM Coolers in service and place 1C-A and 1D-B CRDM Coolers in reserve using SOI-30.03, "Containment HVAC and Pressure Control," Section 5.6, "CRDM Shroud Cooling Alignment and CRDM Cooler Startup."
2. Notify the Unit Supervisor when the CRDM coolers have been aligned.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
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EXAMINER: USE PAGES 6 through 10 if conducting JPM on the Simulator.

SIMULATOR PERFORMANCE

START TIME: _____

CAUTION

Under certain shutdown configurations, starting of CRDM Coolers has the potential to cause the ice condenser lower inlet doors to open if they are NOT properly restrained.

NOTES

1) Normally, two CRDM Coolers are in service and two in reserve. CRDM Coolers 1A-A and 1B-B should be operated together OR 1C-A and 1D-B should be operated together for power train separation. Deviation from this alignment requires 1A-A and 1C-A OR 1B-B and 1D-B to ensure proper air flow.

2) The temperature indicated on each cooler's TIC is that cooler's air inlet temperature. CRDM Cooler air outlet temperature is displayed on ICS points. ICS Point T1014A, OP REFUEL GATE, may be used to determine the temperature in the CRDM shroud area.

STEP 1: [1] IF CRDM CLR D-B is to be used to cool shroud [1-M-9], THEN

___ SAT

[1.1] **ENSURE** 1-HS-30-80A, CRDM CLR D-B MTR 1&2, in A-AUTO and 1-HS-30-81A, CRDM CLR D-B SHROUD SUCT, in P-AUTO, **AND START** CRDM CLR D-B with 1-HS-30-80A.

___ UNSAT

[1.2] **ENSURE** CRDM CLR D-B is RUNNING.

[1.3] **ENSURE** 1-TCO-30-81, CRDM CLR D-B SHROUD SUCT, is OPEN, and 1-TCO-30-82, CRDM CLR D-B LWR CNTMT SUCT, is CLOSED.

STANDARD:

Applicant determines that CRDM CLR D-B is in service, and will be placed in reserve. Applicant enters N/A for this step.

COMMENTS:

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 2:</u> [2] IF CRDM CLR A-A is to be used to cool shroud [1-M-9], THEN</p> <p>[2.1] ENSURE 1-HS-30-83A, CRDM CLR A-A MTR 1&2, in A-AUTO and 1-HS-30-84A, CRDM CLR A-A SHROUD SUCT, in P- AUTO, AND START CRDM CLR with 1-HS-30-83A.</p> <p>[2.2] ENSURE CRDM CLR A-A is RUNNING.</p> <p>[2.3] ENSURE 1-TCO-30-84, CRDM CLR A-A SHROUD SUCT, is OPEN, and 1-TCO-30-85, CRDM CLR A-A LWR CNTMT SUCT, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-HS-30-83A, CRDM CLR A-A MTR 1&2, in A-AUTO and 1-HS-30-84A, CRDM CLR A-A SHROUD SUCT, in P- AUTO.</p> <p>___ Applicant starts CRDM CLR A-A by rotating handswitch 1-HS-30-83A to the START position.</p> <p>Step is critical to ensure CRDM CLR A-A is in service.</p> <p>Applicant ensures 1-TCO-30-84, CRDM CLR A-A SHROUD SUCT is OPEN, and 1-TCO-30-85, CRDM CLR A-A LWR CNTMT SUCT is CLOSED.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> [3] IF CRDM CLR B-B is to be used to cool shroud [1-M-9], THEN</p> <p>[3.1] ENSURE 1-HS-30-92A, CRDM CLR B-B MTR 1&2, in A-AUTO and 1-HS-30-93A, CRDM CLR B-B SHROUD SUCT, in P-AUTO, AND START CRDM CLR with 1-HS-30-92A.</p> <p>[3.2] ENSURE CRDM CLR B-B is RUNNING.</p> <p>[3.3] ENSURE 1-TCO-30-93, CRDM CLR B-B SHROUD SUCT, is OPEN, and 1-TCO-30-94, CRDM CLR B-B LWR CNTMT SUCT, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-HS-30-92A, CRDM CLR B-B MTR 1&2, in A-AUTO and 1-HS-30-93A, CRDM CLR B-B SHROUD SUCT, in P-AUTO.</p> <p>___ Applicant starts CRDM CLR B-B by rotating handswitch 1-HS-30-92A to the START position.</p> <p>Step is critical to ensure CRDM CLR B-B is in service.</p> <p>Applicant ensures 1-TCO-30-93, CRDM CLR B-B SHROUD SUCT, is OPEN, and 1-TCO-30-94, CRDM CLR B-B LWR CNTMT SUCT, is CLOSED</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.e
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> [4] IF CRDM CLR C-A is to be used to cool shroud [1-M-9], THEN</p> <p> [4.1] ENSURE 1-HS-30-88A, CRDM CLR C-A MTR 1&2, in A-AUTO and 1-HS-30-89A, CRDM CLR C- A SHROUD SUCT, in P-AUTO, AND START CRDM CLR with 1-HS-30-88A.</p> <p> [4.2] ENSURE CRDM CLR C-A is RUNNING.</p> <p> [4.3] ENSURE 1-TCO-30-89, CRDM CLR C-A SHROUD SUCT, is OPEN, and 1-TCO-30-90, CRDM CLR C-A LWR CNTMT SUCT, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that CRDM CLR C-A is in service, and will be placed in reserve. Applicant enters N/A for this step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STOP TIME _____

WATTS BAR NUCLEAR PLANT

JOB PERFORMANCE MEASURE

B.1.e
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STEP/STANDARD	SAT/UNSAT
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EXAMINER: USE PAGES 11 through 18 if conducting JPM in the Control Room.

CONTROL ROOM PERFORMANCE

START TIME: _____

CAUTION

Under certain shutdown configurations, starting of CRDM Coolers has the potential to cause the ice condenser lower inlet doors to open if they are NOT properly restrained.

NOTES

1) Normally, two CRDM Coolers are in service and two in reserve. CRDM Coolers 1A-A and 1B-B should be operated together OR 1C-A and 1D-B should be operated together for power train separation. Deviation from this alignment requires 1A-A and 1C-A OR 1B-B and 1D-B to ensure proper air flow.

2) The temperature indicated on each cooler's TIC is that cooler's air inlet temperature. CRDM Cooler air outlet temperature is displayed on ICS points. ICS Point T1014A, OP REFUEL GATE, may be used to determine the temperature in the CRDM shroud area.

STEP 1: [1] IF CRDM CLR D-B is to be used to cool shroud [1-M-9], THEN

___ SAT

[1.1] ENSURE 1-HS-30-80A, CRDM CLR D-B MTR 1&2, in A-AUTO and 1-HS-30-81A, CRDM CLR D-B SHROUD SUCT, in P-AUTO, **AND START** CRDM CLR D-B with 1-HS-30-80A.

___ UNSAT

[1.2] ENSURE CRDM CLR D-B is RUNNING.

[1.3] ENSURE 1-TCO-30-81, CRDM CLR D-B SHROUD SUCT, is OPEN, and 1-TCO-30-82, CRDM CLR D-B LWR CNTMT SUCT, is CLOSED.

STANDARD:

Applicant determines that CRDM CLR C-A is in service, and will be placed in reserve. Applicant enters N/A for this step.

COMMENTS:

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 2:</u> [2] IF CRDM CLR A-A is to be used to cool shroud [1-M-9], THEN</p> <p>[2.1] ENSURE 1-HS-30-83A, CRDM CLR A-A MTR 1&2, in A-AUTO and 1-HS-30-84A, CRDM CLR A-A SHROUD SUCT, in P- AUTO, AND START CRDM CLR with 1-HS-30-83A.</p> <p>[2.2] ENSURE CRDM CLR A-A is RUNNING.</p> <p>[2.3] ENSURE 1-TCO-30-84, CRDM CLR A-A SHROUD SUCT, is OPEN, and 1-TCO-30-85, CRDM CLR A-A LWR CNTMT SUCT, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant ensures 1-HS-30-83A, CRDM CLR A-A MTR 1&2, in A-AUTO and 1-HS-30-84A, CRDM CLR A-A SHROUD SUCT, in P- AUTO.</p> <p>___ Applicant locates 1-HS-30-83A, CRDM CLR A-A and indicates that the handswitch will be rotated to the right to the "START" position.</p> <p>Applicant indicates that the RED indicating light will be LIT and the GREEN indicating light will be DARK on 1-HS-30-83A, CRDM CLR A-A.</p> <p>Applicant locates 1-HS-30-84A, CRDM CLR A-A SHROUD SUCT and indicates that the RED indicating light will be LIT and the GREEN indicating light will be DARK.</p> <p>Applicant locates 1-HS-30-85A, CRDM CLR A-A SHROUD SUCT and indicates that the RED indicating light will be DARK and the GREEN indicating light will be LIT</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-83A is in the IN-AUTO position. RED lights are LIT, and GREEN lights are DARK on 1-HS-30-83A and 1-HS-30-84A.</p> <p>RED light is DARK and GREEN light is LIT on 1-HS-30-85A.</p> <p>Step is critical to ensure CRDM CLR A-A is in service.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.e
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STEP/STANDARD	SAT/UNSAT
<p>STEP 3: [3] IF CRDM CLR B-B is to be used to cool shroud [1-M-9], THEN</p> <p>[3.1] ENSURE 1-HS-30-92A, CRDM CLR B-B MTR 1&2, in A-AUTO and 1-HS-30-93A, CRDM CLR B-B SHROUD SUCT, in P-AUTO, AND START CRDM CLR with 1-HS-30-92A.</p> <p>[3.2] ENSURE CRDM CLR B-B is RUNNING.</p> <p>[3.3] ENSURE 1-TCO-30-93, CRDM CLR B-B SHROUD SUCT, is OPEN, and 1-TCO-30-94, CRDM CLR B-B LWR CNTMT SUCT, is CLOSED.</p> <p>STANDARD:</p> <p>Applicant ensures 1-HS-30-92A, CRDM CLR B-B MTR 1&2, in A-AUTO and 1-HS-30-93A, CRDM CLR B-B SHROUD SUCT, in P- AUTO.</p> <p>___ Applicant locates 1-HS-30-92A, CRDM CLR B-B MTR 1&2, and indicates that the handswitch will be rotated to the right to the "START" position.</p> <p>Applicant indicates that the RED indicating light will be LIT and the GREEN indicating light will be DARK on 1-HS-30-92A, CRDM CLR B-B MTR 1&2.</p> <p>Applicant locates 1-HS-30-93A, CRDM CLR B-B SHROUD SUCT and indicates that the RED indicating light will be LIT and the GREEN indicating light will be DARK.</p> <p>Applicant locates 1-HS-30-94A, CRDM CLR B-B LWR CNTMT SUCT and indicates that the RED indicating light will be DARK and the GREEN indicating light will be LIT</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-92A is in the IN-AUTO position. RED lights are LIT, and GREEN lights are DARK on 1-HS-30-92A and 1-HS-30-93A.</p> <p>RED light is DARK and GREEN light is LIT on 1-HS-30-94A.</p> <p>Step is critical to ensure CRDM CLR B-B is in service.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.e
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> [4] IF CRDM CLR C-A is to be used to cool shroud [1-M-9], THEN [4.1] ENSURE 1-HS-30-88A, CRDM CLR C-A MTR 1&2, in A-AUTO and 1-HS-30-89A, CRDM CLR C- A SHROUD SUCT, in P-AUTO, AND START CRDM CLR with 1-HS-30-88A. [4.2] ENSURE CRDM CLR C-A is RUNNING. [4.3] ENSURE 1-TCO-30-89, CRDM CLR C-A SHROUD SUCT, is OPEN, and 1-TCO-30-90, CRDM CLR C-A LWR CNTMT SUCT, is CLOSED.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that CRDM CLR C-A is in service, and will be placed in reserve. Applicant enters N/A for this step.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.e
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STEP/STANDARD	SAT/UNSAT
EXAMINER: JPM Steps 5 through 8 evaluate Steps 5.1 through 5.4 of SOI-30.03, "Containment HVAC and Pressure Control," Section 5.6, "CRDM Shroud Cooling Alignment and CRDM Cooler Startup."	
<p>STEP 5: [5] IF CRDM Cooler is to be placed in reserve, THEN ENSURE the following: (N/A coolers in service)</p> <p style="padding-left: 40px;">[5.1] 1-HS-30-80A, CRDM CLR D-B MTR 1&2, in A-AUTO, and Cooler NOT running.</p> <p>STANDARD:</p> <p>___ Applicant locates 1-HS-30-80A, CRDM CLR D-B MTR 1&2, and indicates that the handswitch will be rotated to the left to the "STOP" position, and then returned to the "IN A-AUTO," mid position.</p> <p>Applicant indicates that the RED indicating light will be DARK and the GREEN indicating light will be LIT on 1-HS-30-80A, CRDM CLR D-B MTR 1&2.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-80A is in the "IN-AUTO" position. State that the GREEN light is LIT, and RED light is DARK on 1-HS-30-80A.</p> <p>Step is critical to ensure CRDM CLR D-B is in reserve and will auto start if required.</p> <p>COMMENTS:</p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.e
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> [5] IF CRDM Cooler is to be placed in reserve, THEN ENSURE the following: (N/A coolers in service)</p> <p style="padding-left: 40px;">[5.2] 1-HS-30-83A, CRDM CLR A-A MTR 1&2, in A-AUTO, and Cooler NOT running.</p> <p><u>STANDARD:</u></p> <p>Applicant enters N/A for step 5.2 since the A-A CRDM Cooler will remain in service.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> [5] IF CRDM Cooler is to be placed in reserve, THEN ENSURE the following: (N/A coolers in service)</p> <p style="padding-left: 40px;">[5.3] 1-HS-30-92A, CRDM CLR B-B MTR 1&2, in A-AUTO, AND Cooler NOT running.</p> <p><u>STANDARD:</u></p> <p>Applicant enters N/A for steps 5.3 since the B-B CRDM Cooler will remain in service.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 8:</u> [5] IF CRDM Cooler is to be placed in reserve, THEN ENSURE the following: (N/A coolers in service)</p> <p style="padding-left: 40px;">[5.4] 1-HS-30-88A, CRDM CLR C-A MTR 1&2, in A-AUTO, and Cooler NOT running.</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-HS-30-88A, CRDM CLR C-A MTR 1&2, and indicates that the handswitch will be rotated to the left to the "STOP" position, and then returned to the mid position, "IN A-AUTO."</p> <p>Applicant indicates that the RED indicating light will be DARK and the GREEN indicating light will be LIT on 1-HS-30-88A, CRDM CLR C-A MTR 1&2.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-88A is in the "IN-AUTO" position. State that the GREEN light is LIT, and RED light is DARK on 1-HS-30-88A.</p> <p>Step is critical to ensure CRDM CLR C-A is in reserve and will auto start if required.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

B.1.e
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STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Predictive Maintenance has requested that the 1C-A CRDM Cooler be removed from service in order to perform maintenance on its 480V supply breaker.
2. You are an extra operator assigned to the shift.

INITIATING CUES:

1. The Unit Supervisor directs you to place 1A-A and 1B-B CRDM Coolers in service and place 1C-A and 1D-B CRDM Coolers in reserve using SOI-30.03, "Containment HVAC and Pressure Control," Section 5.6, "CRDM Shroud Cooling Alignment and CRDM Cooler Startup."
2. Notify the Unit Supervisor when the CRDM coolers have been aligned.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.f
2011-10 NRC Exam**

**B.1.f
Reinstate Source Range Detectors
Following a Reactor Trip**

B.1.f
2011-10 NRC Exam

WATTS BA NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.f
2011-10 NRC Exam

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 309.
 - c. Right “click” on IC 309.
 - d. Select Reset on the drop down menu.
 - e. Right “click” on RESET.
 - f. Enter the password for IC 309.
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.

3. ENSURE the following information appears on the Director Summary Screen:

Key		Type	Event	Delay	Inserted	Ramp	Initial	Final	Value
ni04a	ir channel failure ir chnl 1	M		00:00:00	00:00:00	00:00:00		200	200

6. Place simulator in RUN and acknowledge any alarms.
7. ENSURE a marked-up copy of ES-0.1, “Reactor Trip Response,” signed (circled-and-slashed) through Step 17 and Step 18 circled, is available for each applicant.
8. ENSURE “Extra Operator” is present in the simulator.
9. Place simulator in FREEZE until Examiner cue is given.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.f
2011-10 NRC Exam**

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 cue sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 was inadvertently tripped from 100% power approximately 20 minutes ago.
2. ES-0.1, "Reactor Trip Response," was entered and the crew just completed Step 17.

INITIATING CUES:

1. The US directs you as the OAC to ensure source range monitors are reinstated per ES-0.1, Step 18.
2. Inform the US when the source range monitors have been reinstated and all functions of the source range monitors are in service.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.f
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> 18. ENSURE nuclear instrumentation operation:</p> <p style="margin-left: 40px;">a. CHECK intermediate range flux less than $1.66 \times 10^{-4} \%$.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that Intermediate Range N135 has failed high and is not indicative of current conditions. Applicant determines that N136 is indicating correctly and continues to step 1.b.</p> <p><u>EXAMINER:</u> Upon recognition of the failed intermediate range channel, if/when the applicant states that AOI-4, "Nuclear Instrumentation Malfunctions," should be implemented, provide the cue "Another operator will perform AOI-4 actions."</p> <p><u>COMMENTS:</u></p>	<p>____ SAT</p> <p>____ UNSAT</p>
<p><u>STEP 2:</u> b. CHECK source range detectors energized.</p> <p><u>STANDARD:</u></p> <p>____ Applicant determines that the source range detectors are NOT energized and enters RESPONSE NOT OBTAINED COLUMN for actions.</p> <p>Step is critical since additional actions are required based on the discovery of the failure of the source ranges to re-energize.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>____ SAT</p> <p>____ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.f
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> <u>RESPONSE NOT OBTAINED</u></p> <p> b. Manually ENERGIZE Source Range detectors:</p> <p> Simultaneously PLACE 1-N33A and 1-N33B to RESET.</p> <p><u>STANDARD:</u></p> <p>____ Applicant places 1-N33A SR TRIP TR A RESET-BLOCK P-6, and 1-N33B, SR TRIP TR B RESET-BLOCK P-6, to the RESET position SIMULTANEOUSLY (required two-handed operation.)</p> <p>Step is critical since the circuit requires SIMULTANEOUS operation of 1-N33A and 1N33B to successfully energize the Source Range Detectors.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>____ SAT</p> <p>____ UNSAT</p>
<p><u>STEP 4:</u> c. SELECT STARTUP SCREEN on 1-NR-92-145 to display SRMs and IRMs.</p> <p><u>STANDARD:</u></p> <p>Applicant uses the touch screen function on 1-NR-92-145 and selects STARTUP SCREEN on 1-NR-92-145 to display SRMs and IRMs.</p> <p><u>COMMENTS:</u></p>	<p>____ SAT</p> <p>____ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.f
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5:</u> d. ENSURE audio count rate operation.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that the audio count rate is functioning properly by audible confirmation.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> e. RESET shutdown monitor alarm setpoints [M-13].</p> <p><u>STANDARD:</u></p> <p>___ Applicant resets the shutdown monitor setpoints by depressing the ALARM SETPOINT RESET pushbutton on 1-M-13.</p> <p>Step is critical to ensure the shutdown monitor alarm circuit is properly initialized after the trip.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 7: f.</u> ENSURE shutdown monitor ALARM LED(s) dark, AND HIGH FLUX AT SHUTDOWN bistable lights dark, THEN PLACE HIGH FLUX AT SHUTDOWN alarm block switches in NORMAL [M-13].</p> <p><u>STANDARD:</u></p> <p>Applicant observes the RED ALARM light is LIT on 1-NI-92-133D SHUTDOWN MONITOR.</p> <p>___ The applicant depresses the RESET pushbutton adjacent to the ALARM light on 1-NI-92-133D, and observes the RED ALARM light is DARK.</p> <p>Applicant observes the RED ALARM light is LIT on 1-NI-92-133E SHUTDOWN MONITOR.</p> <p>___ The applicant depresses the RESET pushbutton adjacent to the ALARM light 1-NI-92-133E, and observes the RED ALARM light is DARK.</p> <p>___ The applicant locates the HIGH FLUX AT SHUTDOWN switch on 1-NI-92-131-D, and rotates the switch to the left from the "BLOCK" to the "NORMAL" position.</p> <p>___ The applicant locates the HIGH FLUX AT SHUTDOWN switch on 1-NI-92-132-E, and rotates the switch to the left from the "BLOCK" to the "NORMAL" position.</p> <p>Step is critical to ensure the shutdown monitor alarm circuit is properly initialized after the trip.</p> <p>Applicant determines that Step 18 has been completed and informs the Unit Supervisor of completion.</p> <p><u>COMMENTS:</u></p> <p style="text-align: center;"><u>END OF TASK</u></p>	<p style="text-align: center;">CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Unit 1 was inadvertently tripped from 100% power approximately 20 minutes ago.
2. ES-0.1, "Reactor Trip Response," was entered and the crew just completed Step 17.

INITIATING CUES:

1. The US directs you as the OAC to ensure source range monitors are reinstated per ES-0.1, Step 18.
2. Inform the US when the source range monitors have been reinstated and all functions of the source range monitors are in service.

**WATTS BAR NUCLEAR PLANT
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**B.1.g
Purge Lower Containment**

**NOTE: This JPM may be conducted on
the Simulator OR in the Main Control
Room**

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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EVALUATION SHEET

Task: Purge Lower Containment

Alternate Path: n/a

Facility JPM #: 3-OT-JPMR173A (Modified)

Safety Function: 8 **Title:** Containment Systems

K/A 029 A2.03 Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Startup operations and the associated required valve lineups

Rating(s): 2.7/3.1 **CFR:** 41.5/43.5/45.3/45.13

Evaluation Method: Simulator X In-Plant Classroom

References: SOI-30.02, "Containment Purge System," Rev. 57.

Task Number: RO-030-SOI-30-008 **Title:** Purge the Lower Containment.

Task Standard: The applicant places Lower Containment Purge in service using SOI-30.02, "Containment Purge System," Section 5.2, "Start Up Lower Containment Purge," through Step 19.

Validation Time: 20 minutes **Time Critical:** Yes No X

=====

<u>Applicant:</u> _____	Time Start: _____
NAME	Docket No.
	Time Finish: _____

Performance Rating: SAT UNSAT Performance Time

Examiner: _____ / _____

NAME	SIGNATURE	DATE
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COMMENTS

WATTS BA **NUCLEAR PLANT**
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IF CONDUCTED IN THE SIMULATOR, THEN PERFORM THE FOLLOWING:

SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. RESET to Initial Condition by performing the following actions:
 - a. Select ICManager on the THUNDERBAR menu (right hand side of Instructor Console Screen).
 - b. Locate IC 308.
 - c. Right “click” on IC 308.
 - d. Select Reset on the drop down menu.
 - e. Right “click” on RESET.
 - f. Enter the password for IC 308.
 - g. Select “Yes” on the INITIAL CONDITION RESET pop-up window.
 - h. Perform SWITCH CHECK.
3. Place simulator in RUN and acknowledge any alarms.
4. ENSURE a marked-up copy of {Insert appropriate procedure here}, signed (circled-and-slashed) through Step,
5. ENSURE “Extra Operator” is present in the simulator.
6. Place simulator in FREEZE until Examiner cue is given.

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IF CONDUCTED IN THE MAIN CONTROL ROOM, THEN:

Tools/Equipment/Procedures Needed:

ENSURE that copies of SOI-30.03, "Containment HVAC and Pressure Control," available to the EXAMINER, marked as "NRC EXAM MATERIAL, FOR TRAINING ONLY," for each applicant.

Begin the JPM at the Shift Manager's Desk.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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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 cue sheet I provided you.

INITIAL CONDITIONS:

1. A purge of Upper Containment was just completed.
2. A purge of the Lower Containment is scheduled to be performed on this shift.
3. The area outside Unit 1 intake is clear of fumes and there are no running vehicles in the area.
4. SOI-30.02, "Containment Purge System," Section 4.0, "Prerequisite Actions" is complete.
5. SOI-30.02, "Containment Purge System," Section 5.2, "Start Up Lower Containment Purge," is complete through Step 10.
6. You are an extra Control Room Operator assigned to the shift.

INITIATING CUES:

The Unit Supervisor has directed you to place "B" train Lower Containment Purge in service, beginning at Step 11.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
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EXAMINER: USE PAGES 6 through 16 if conducting JPM on the Simulator.

SIMULATOR PERFORMANCE

START TIME: _____

NOTE

1-FCV-30-61 and 1-FCV-30-62 MUST remain CLOSED if moving irradiated fuel with Containment open to ABSCE spaces, UNLESS 1-HS-90-410-A and 1-HS-90-415-B are in the REFUEL position.

STEP 1: [11] **PERFORM** the following: (N/A HS NOT used)

NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL
PURGE EXH FAN A SUCT	1-M-9	OPEN	1-HS-30-61	
PURGE EXH FAN B SUCT	1-M-9	OPEN	1-HS-30-62	

**CRITICAL
STEP**

___ SAT

___ UNSAT

STANDARD:

Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.

Applicant enters "N/A" for 1-HS-30-61, PURGE EXH FAN A SUCT.

___ Applicant locates 1-HS-30-62 PURGE EXH FAN B SUCT and rotates the handswitch to the right to the OPEN position.

Applicant observes the PURGE EXH FAN B SUCT is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.

Step is critical to ensure proper purge flowpath is established.

COMMENTS:

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD	SAT/UNSAT															
CAUTION If Lower Containment is purged during modes 1-4, only one set of supply isolation valves may be opened. This means supply valves 1-FCV-30-16 and -17 must remain closed.																
<p>STEP 2: [12] PERFORM the following:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"><thead><tr><th style="width: 30%;">NOMENCLATURE</th><th style="width: 15%;">LOCATION</th><th style="width: 15%;">POSITION</th><th style="width: 20%;">UNID</th><th style="width: 20%;">PERF INITIAL</th></tr></thead><tbody><tr><td>LWR CNTMT PURGE 1-FCV-30-14 & 56</td><td>1-M-9</td><td>OPEN</td><td>1-HS-30-14</td><td></td></tr><tr><td>LWR CNTMT PURGE 1-FCV-30-15 & 57</td><td>1-M-9</td><td>OPEN</td><td>1-HS-30-15</td><td></td></tr></tbody></table> <p>STANDARD:</p> <p>___ Applicant locates 1-HS-30-14 LWR CNTMT PURGE 1-FCV-30-14 & 56 and rotates the handswitch to the right to the OPEN position.</p> <p>Applicant observes the LWR CNTMT PURGE 1-FCV-30-14 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>Applicant observes the LWR CNTMT PURGE 1-FCV-30-56 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK</p> <p>___ Applicant locates 1-HS-30-15 LWR CNTMT PURGE 1-FCV-30-15 & 57 and rotates the handswitch to the right to the OPEN position.</p> <p>Applicant observes the LWR CNTMT PURGE 1-FCV-30-15 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>Applicant observes the LWR CNTMT PURGE 1-FCV-30-57 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	LWR CNTMT PURGE 1-FCV-30-14 & 56	1-M-9	OPEN	1-HS-30-14		LWR CNTMT PURGE 1-FCV-30-15 & 57	1-M-9	OPEN	1-HS-30-15		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL												
LWR CNTMT PURGE 1-FCV-30-14 & 56	1-M-9	OPEN	1-HS-30-14													
LWR CNTMT PURGE 1-FCV-30-15 & 57	1-M-9	OPEN	1-HS-30-15													

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p>[13.1] IF Train A will be run, THEN PERFORM the following:</p> <p><u>STANDARD:</u></p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 13.1.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT															
<p>STEP 4: [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p style="text-align: center;">[13.2] IF Train B will be run, THEN</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 30%;">NOMENCLATURE</th> <th style="width: 15%;">LOCATION</th> <th style="width: 15%;">POSITION</th> <th style="width: 20%;">UNID</th> <th style="width: 20%;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE EXH FAN 1A TO SHIELD BLDG VNT</td> <td>1-M-9</td> <td>CLOSED</td> <td>1-HS-30-213</td> <td></td> </tr> <tr> <td>PURGE EXH FAN 1B TO SHIELD BLDG VNT</td> <td>1-M-9</td> <td>OPEN</td> <td>1-HS-30-216</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant locates 1-HS-30-213 PURGE EXH FAN 1A SHIELD BDLG VNT and observes damper is CLOSED by the RED indicating light DARK and the GREEN indicating light LIT.</p> <p>___ Applicant locates 1-HS-30-216 PURGE EXH FAN 1A SHIELD BDLG VNT and rotates the handswitch to the right to the OPEN position.</p> <p>Applicant observes the damper is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>Step is critical to align Train B of the purge system.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE EXH FAN 1A TO SHIELD BLDG VNT	1-M-9	CLOSED	1-HS-30-213		PURGE EXH FAN 1B TO SHIELD BLDG VNT	1-M-9	OPEN	1-HS-30-216		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL												
PURGE EXH FAN 1A TO SHIELD BLDG VNT	1-M-9	CLOSED	1-HS-30-213													
PURGE EXH FAN 1B TO SHIELD BLDG VNT	1-M-9	OPEN	1-HS-30-216													

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5:</u> [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p style="text-align: center;">[13.3] IF Both Train A and B will be run, THEN</p> <p><u>STANDARD:</u></p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 13.3.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>NOTE</p> <p>Opening 1-FCV-30-2 (Tr A) and/or -5 (Tr B) LAST, ensures negative press in Lower Containment compared to Upper Containment during the Startup transient.</p>	
<p style="text-align: center;">CAUTIONS</p> <p>1) PER 78024 has documented that annulus delta-P indication, and annulus vacuum, are impacted by higher Unit 1 Shield Bldg Vent flows. Operation of the A Train ABGTS in combination with both trains of Containment Purge is NOT presently acceptable. At 22,000 cfm flow through the Unit 1 Shield Bldg Vent, the annulus vacuum fans may automatically control annulus vacuum below the Tech Spec minimum. The 1-SI-0-2-(series) contains the corrected Tech Spec indicated limit.</p> <p>2) Due to proximity of Service Bldg access to air intake, the area outside Unit 1 intake should be checked for potential fumes or running vehicle exhaust prior to starting fans. [C.2]</p> <p style="padding-left: 40px;">CUE: IF contacted as an AUO, state that there are NO fumes or running vehicles near the Unit 1 intake.</p> <p>3) For normal plant operations, purge should NOT be placed in service unless the U1 shield bldg. exhaust monitor and its associated isokinetic sampler are operable.</p>	

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STEP/STANDARD					SAT/UNSAT															
<p>STEP 6: [14] START Selected Sup & Exh Fan: (N/A if NOT started)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center; padding: 5px;">NOMENCLATURE</th> <th style="text-align: center; padding: 5px;">LOCATION</th> <th style="text-align: center; padding: 5px;">POSITION</th> <th style="text-align: center; padding: 5px;">UNID</th> <th style="text-align: center; padding: 5px;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">START</td> <td style="text-align: center; padding: 5px;">1-HS-30-1A</td> <td style="width: 100px;"></td> </tr> <tr> <td style="padding: 5px;">CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">START</td> <td style="text-align: center; padding: 5px;">1-HS-30-4A</td> <td style="width: 100px;"></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 14 addressing 1-HS-30-1A.</p> <p>___ Applicant locates 1-HS-30-4A CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & B and rotates the handswitch to the right to the START position.</p> <p>Applicant observes the fans are RUNNING and dampers are OPEN by the RED indicating lights LIT and the GREEN indicating lights DARK.</p> <p>Step is critical to align Train B of the purge system.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B	1-M-9	START	1-HS-30-1A		CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B	1-M-9	START	1-HS-30-4A		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																
CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B	1-M-9	START	1-HS-30-1A																	
CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B	1-M-9	START	1-HS-30-4A																	
<p>CAUTION</p> <p>If Ice Condenser doors open after opening FCOV-30-2 and/or 30-5, an out-of-balance flow may exist. System Engineering should be notified to evaluate flowrates.</p>																				

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD					SAT/UNSAT															
<p>STEP 7: [15] OPEN Selected Sup Fan Disch damper: (N/A if NOT selected)</p> <table border="1"> <thead> <tr> <th align="center">NOMENCLATURE</th> <th align="center">LOCATION</th> <th align="center">POSITION</th> <th align="center">UNID</th> <th align="center">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE SUP FAN 1A DISCH</td> <td align="center">1-M-9</td> <td align="center">OPEN</td> <td align="center">1-HS-30-2</td> <td></td> </tr> <tr> <td>PURGE SUP FAN 1B DISCH</td> <td align="center">1-M-9</td> <td align="center">OPEN</td> <td align="center">1-HS-30-5</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 14 addressing 1-HS-30-2.</p> <p>___ Applicant locates 1-HS-30-5 PURGE FAN 1B DISCH and rotates the handswitch to the right to the OPEN position.</p> <p>Applicant observes the damper is OPEN by the RED indicating lights LIT and the GREEN indicating light DARK.</p> <p>Step is critical to align Train B of the purge system.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE SUP FAN 1A DISCH	1-M-9	OPEN	1-HS-30-2		PURGE SUP FAN 1B DISCH	1-M-9	OPEN	1-HS-30-5		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																
PURGE SUP FAN 1A DISCH	1-M-9	OPEN	1-HS-30-2																	
PURGE SUP FAN 1B DISCH	1-M-9	OPEN	1-HS-30-5																	

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STEP/STANDARD	SAT/UNSAT																																			
<p>STEP 8: [16] ENSURE the following: (N/A Train NOT used)</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width:30%;">NOMENCLATURE</th> <th style="width:15%;">LOCATION</th> <th style="width:15%;">POSITION</th> <th style="width:20%;">UNID</th> <th style="width:20%;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE SUP SUCT ISOL DAMPER 1-XI-30-294</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-294</td> <td></td> </tr> <tr> <td>PURGE SUP SUCT ISOL DAMPER 1-XI-30-295</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-295</td> <td></td> </tr> </tbody> </table> <p align="center" style="margin-top: 10px;">Train A</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tbody> <tr> <td>DAMPER 1-XI-30-1A</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-1A</td> <td></td> </tr> <tr> <td>DAMPER 1-XI-30-1B</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-1B</td> <td></td> </tr> </tbody> </table> <p align="center" style="margin-top: 10px;">Train B</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tbody> <tr> <td>DAMPER 1-XI-30-4A</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-4A</td> <td></td> </tr> <tr> <td>DAMPER 1-XI-30-4B</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-4B</td> <td></td> </tr> </tbody> </table> <p style="margin-top: 20px;"><u>STANDARD:</u></p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant observes that 1-XI-30-294, PURGE SUP SUCT ISOL DAMPER and 1-XI-30-295 RED indicating lights are LIT and GREEN indicating lights are DARK.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 16 addressing 1-HS-30-1A and 1-HS-30-1B.</p> <p>Applicant observes that damper FCO-30-4A is OPEN by the RED indicating lights LIT and the GREEN indicating light DARK on 1-XI-40-4A.</p> <p>Applicant observes that damper FCO-30-4B is OPEN by the RED indicating lights LIT and the GREEN indicating light DARK on 1-XI-40-4B.</p> <p>Step is critical to align Train B of the purge system.</p> <p><u>COMMENTS:</u></p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE SUP SUCT ISOL DAMPER 1-XI-30-294	1-M-9	OPEN	FCO-30-294		PURGE SUP SUCT ISOL DAMPER 1-XI-30-295	1-M-9	OPEN	FCO-30-295		DAMPER 1-XI-30-1A	1-M-9	OPEN	FCO-30-1A		DAMPER 1-XI-30-1B	1-M-9	OPEN	FCO-30-1B		DAMPER 1-XI-30-4A	1-M-9	OPEN	FCO-30-4A		DAMPER 1-XI-30-4B	1-M-9	OPEN	FCO-30-4B		<p align="center">___ SAT</p> <p align="center">___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																																
PURGE SUP SUCT ISOL DAMPER 1-XI-30-294	1-M-9	OPEN	FCO-30-294																																	
PURGE SUP SUCT ISOL DAMPER 1-XI-30-295	1-M-9	OPEN	FCO-30-295																																	
DAMPER 1-XI-30-1A	1-M-9	OPEN	FCO-30-1A																																	
DAMPER 1-XI-30-1B	1-M-9	OPEN	FCO-30-1B																																	
DAMPER 1-XI-30-4A	1-M-9	OPEN	FCO-30-4A																																	
DAMPER 1-XI-30-4B	1-M-9	OPEN	FCO-30-4B																																	

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<p><u>STEP 9:</u> [17] CHECK flow on 1-FI-90-400, SHIELD BLDG VT FLOW [1-M-9]. (N/A if FI NOT available)</p> <p><u>STANDARD:</u></p> <p>Applicant observes flow rising on 1-FI-90-400, SHIELD BLDG VT FLOW.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [18] IF FI-90-400 is NOT available, THEN ENSURE Flow being estimated per 1-SI-0-2-00, Shift & Daily Log.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that 1-FI-90-400 is available and enters "N/A" for Step 18.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p style="text-align: center;">NOTE</p> <p>Ice Condenser vent curtain should be checked for proper vertical position and repositioned if necessary after starting CONTAINMENT purge.</p>	

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STOP TIME _____

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STEP/STANDARD	SAT/UNSAT
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EXAMINER: USE PAGES 17 through 27 if conducting JPM in the Control Room.

CONTROL ROOM PERFORMANCE

START TIME: _____

NOTE

1-FCV-30-61 and 1-FCV-30-62 MUST remain CLOSED if moving irradiated fuel with Containment open to ABSCE spaces, UNLESS 1-HS-90-410-A and 1-HS-90-415-B are in the REFUEL position.

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<p>STEP 1: [11] PERFORM the following: (N/A HS NOT used)</p> <table border="1" style="width:100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center; padding: 5px;">NOMENCLATURE</th> <th style="text-align: center; padding: 5px;">LOCATION</th> <th style="text-align: center; padding: 5px;">POSITION</th> <th style="text-align: center; padding: 5px;">UNID</th> <th style="text-align: center; padding: 5px;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">PURGE EXH FAN A SUCT</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">OPEN</td> <td style="text-align: center; padding: 5px;">1-HS-30-61</td> <td style="width: 100px;"></td> </tr> <tr> <td style="padding: 5px;">PURGE EXH FAN B SUCT</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">OPEN</td> <td style="text-align: center; padding: 5px;">1-HS-30-62</td> <td style="width: 100px;"></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant enters "N/A" for 1-HS-30-61, PURGE EXH FAN A SUCT.</p> <p>___ Applicant locates 1-HS-30-62 PURGE EXH FAN B SUCT and indicates that the handswitch will be rotated to the right to the OPEN position.</p> <p>Applicant indicates that the PURGE EXH FAN B SUCT is OPEN by the RED indicating light will be LIT and the GREEN indicating light DARK.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-62 is in the OPEN position, RED light is LIT, and GREEN light is DARK.</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE EXH FAN A SUCT	1-M-9	OPEN	1-HS-30-61		PURGE EXH FAN B SUCT	1-M-9	OPEN	1-HS-30-62		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																
PURGE EXH FAN A SUCT	1-M-9	OPEN	1-HS-30-61																	
PURGE EXH FAN B SUCT	1-M-9	OPEN	1-HS-30-62																	
<p align="center">CAUTION</p> <p>If Lower Containment is purged during modes 1-4, only one set of supply isolation valves may be opened. This means supply valves 1-FCV-30-16 and -17 must remain closed.</p>																				

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STEP/STANDARD					SAT/UNSAT															
<p>STEP 2: [12] PERFORM the following:</p> <table border="1" style="width:100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="text-align: center; padding: 5px;">NOMENCLATURE</th> <th style="text-align: center; padding: 5px;">LOCATION</th> <th style="text-align: center; padding: 5px;">POSITION</th> <th style="text-align: center; padding: 5px;">UNID</th> <th style="text-align: center; padding: 5px;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">LWR CNTMT PURGE 1-FCV-30-14 & 56</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">OPEN</td> <td style="text-align: center; padding: 5px;">1-HS-30-14</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="padding: 5px;">LWR CNTMT PURGE 1-FCV-30-15 & 57</td> <td style="text-align: center; padding: 5px;">1-M-9</td> <td style="text-align: center; padding: 5px;">OPEN</td> <td style="text-align: center; padding: 5px;">1-HS-30-15</td> <td style="padding: 5px;"></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>___ Applicant locates 1-HS-30-14 LWR CNTMT PURGE 1-FCV-30-14 & 56 and indicates that the handswitch will be rotated to the right to the OPEN position.</p> <p>Applicant indicates that LWR CNTMT PURGE 1-FCV-30-14 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>Applicant indicates that LWR CNTMT PURGE 1-FCV-30-56 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK</p> <p>___ Applicant locates 1-HS-30-15 LWR CNTMT PURGE 1-FCV-30-15 & 57 and indicates that the handswitch will be rotated to the right to the OPEN position.</p> <p>Applicant indicates that LWR CNTMT PURGE 1-FCV-30-15 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>Applicant indicates that LWR CNTMT PURGE 1-FCV-30-57 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK</p> <p>CUE: After applicant has demonstrated proper switch manipulations, state that 1-FCO-30-14, 1-FCO-30-56, 1-FCO-30-15, and 1-FCO-57 are in the OPEN position, RED lights LIT, and GREEN lights DARK.</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	LWR CNTMT PURGE 1-FCV-30-14 & 56	1-M-9	OPEN	1-HS-30-14		LWR CNTMT PURGE 1-FCV-30-15 & 57	1-M-9	OPEN	1-HS-30-15		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																
LWR CNTMT PURGE 1-FCV-30-14 & 56	1-M-9	OPEN	1-HS-30-14																	
LWR CNTMT PURGE 1-FCV-30-15 & 57	1-M-9	OPEN	1-HS-30-15																	

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STEP/STANDARD	SAT/UNSAT
<p data-bbox="151 275 1154 348"><u>STEP 3:</u> [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p data-bbox="354 386 1211 422">[13.1] IF Train A will be run, THEN PERFORM the following:</p> <p data-bbox="151 462 334 495"><u>STANDARD:</u></p> <p data-bbox="196 533 1183 606">Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 13.1.</p> <p data-bbox="151 644 345 678"><u>COMMENTS:</u></p>	<p data-bbox="1284 275 1409 308">___ SAT</p> <p data-bbox="1284 346 1458 380">___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT															
<p>STEP 4: [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p style="text-align: center;">[13.2] IF Train B will be run, THEN</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width: 30%;">NOMENCLATURE</th> <th style="width: 15%;">LOCATION</th> <th style="width: 15%;">POSITION</th> <th style="width: 20%;">UNID</th> <th style="width: 20%;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE EXH FAN 1A TO SHIELD BLDG VNT</td> <td>1-M-9</td> <td>CLOSED</td> <td>1-HS-30-213</td> <td></td> </tr> <tr> <td>PURGE EXH FAN 1B TO SHIELD BLDG VNT</td> <td>1-M-9</td> <td>OPEN</td> <td>1-HS-30-216</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant locates 1-HS-30-213 PURGE EXH FAN 1A SHIELD BDLG VNT and observes damper is CLOSED by the RED indicating light DARK and the GREEN indicating light LIT.</p> <p>___ Applicant locates 1-HS-30-216 PURGE EXH FAN 1A SHIELD BDLG VNT and indicates that the handswitch will be rotated to the right to the OPEN position.</p> <p>Applicant indicates that PURGE EXH FAN 1A SHIELD BDLG VNT is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-216 is in the OPEN position, RED light is LIT, and GREEN light is DARK.</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE EXH FAN 1A TO SHIELD BLDG VNT	1-M-9	CLOSED	1-HS-30-213		PURGE EXH FAN 1B TO SHIELD BLDG VNT	1-M-9	OPEN	1-HS-30-216		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL												
PURGE EXH FAN 1A TO SHIELD BLDG VNT	1-M-9	CLOSED	1-HS-30-213													
PURGE EXH FAN 1B TO SHIELD BLDG VNT	1-M-9	OPEN	1-HS-30-216													

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5:</u> [13] ALIGN Exh Fans Disch Flood dampers per 5.2[13.1], 5.2[13.2], or 5.2[13.3]: (N/A subsection NOT performed)</p> <p style="padding-left: 40px;">[13.3] IF Both Train A and B will be run, THEN</p> <p><u>STANDARD:</u></p> <p style="padding-left: 20px;">Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 13.3.</p> <p><u>COMMENTS:</u></p>	<p style="text-align: center;">___ SAT</p> <p style="text-align: center;">___ UNSAT</p>
<p>NOTE</p> <p>Opening 1-FCV-30-2 (Tr A) and/or -5 (Tr B) LAST, ensures negative press in Lower Containment compared to Upper Containment during the Startup transient.</p>	
<p style="text-align: center;">CAUTIONS</p> <p>1) PER 78024 has documented that annulus delta-P indication, and annulus vacuum, are impacted by higher Unit 1 Shield Bldg Vent flows. Operation of the A Train ABGTS in combination with both trains of Containment Purge is NOT presently acceptable. At 22,000 cfm flow through the Unit 1 Shield Bldg Vent, the annulus vacuum fans may automatically control annulus vacuum below the Tech Spec minimum. The 1-SI-0-2-(series) contains the corrected Tech Spec indicated limit.</p> <p>2) Due to proximity of Service Bldg access to air intake, the area outside Unit 1 intake should be checked for potential fumes or running vehicle exhaust prior to starting fans. [C.2]</p> <p style="padding-left: 20px;">CUE: IF contacted as an AUO, state that there are NO fumes or running vehicles near the Unit 1 intake.</p> <p>3) For normal plant operations, purge should NOT be placed in service unless the U1 shield bldg. exhaust monitor and its associated isokinetic sampler are operable.</p>	

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<p>STEP 6: [14] START Selected Sup & Exh Fan: (N/A if NOT started)</p> <table border="1" style="width:100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="width:30%;">NOMENCLATURE</th> <th style="width:15%;">LOCATION</th> <th style="width:15%;">POSITION</th> <th style="width:20%;">UNID</th> <th style="width:20%;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B</td> <td>1-M-9</td> <td>START</td> <td>1-HS-30-1A</td> <td></td> </tr> <tr> <td>CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B</td> <td>1-M-9</td> <td>START</td> <td>1-HS-30-4A</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 14 addressing 1-HS-30-1A.</p> <p>___ Applicant locates 1-HS-30-4A CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & B and indicates that the handswitch will be rotated to the right to the START position.</p> <p>Applicant observes the fans are RUNNING and dampers are OPEN by the RED indicating lights LIT and the GREEN indicating lights DARK.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that CNTMT PURGE SUP & EXH FANS 1B and FCO-30-4A & B is in the OPEN position, RED lights are LIT, and GREEN lights are DARK.</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B	1-M-9	START	1-HS-30-1A		CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B	1-M-9	START	1-HS-30-4A		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL												
CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B	1-M-9	START	1-HS-30-1A													
CNTMT PURGE SUP & EXH FANS 1B AND FCO-30-4A & 4B	1-M-9	START	1-HS-30-4A													
<p align="center">CAUTION</p> <p>If Ice Condenser doors open after opening FCO-30-2 and/or 30-5, an out-of-balance flow may exist. System Engineering should be notified to evaluate flowrates.</p>																

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STEP/STANDARD					SAT/UNSAT															
<p>STEP 7: [15] OPEN Selected Sup Fan Disch damper: (N/A if NOT selected)</p> <table border="1"> <thead> <tr> <th align="center">NOMENCLATURE</th> <th align="center">LOCATION</th> <th align="center">POSITION</th> <th align="center">UNID</th> <th align="center">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE SUP FAN 1A DISCH</td> <td align="center">1-M-9</td> <td align="center">OPEN</td> <td align="center">1-HS-30-2</td> <td></td> </tr> <tr> <td>PURGE SUP FAN 1B DISCH</td> <td align="center">1-M-9</td> <td align="center">OPEN</td> <td align="center">1-HS-30-5</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 14 addressing 1-HS-30-2.</p> <p>___ Applicant locates 1-HS-30-5 PURGE FAN 1B DISCH and indicates that the handswitch will be rotated to the right to the OPEN position.</p> <p>Applicant indicates that 1-HS-30-5 is OPEN by the RED indicating light LIT and the GREEN indicating light DARK.</p> <p>CUE: After applicant has demonstrated proper switch manipulation, state that 1-HS-30-216 is in the OPEN position, RED light is LIT, and GREEN light is DARK.</p> <p>Step is critical to ensure proper purge flowpath is established.</p> <p>COMMENTS:</p>					NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE SUP FAN 1A DISCH	1-M-9	OPEN	1-HS-30-2		PURGE SUP FAN 1B DISCH	1-M-9	OPEN	1-HS-30-5		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																
PURGE SUP FAN 1A DISCH	1-M-9	OPEN	1-HS-30-2																	
PURGE SUP FAN 1B DISCH	1-M-9	OPEN	1-HS-30-5																	

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STEP/STANDARD	SAT/UNSAT																																			
<p>STEP 8: [16] ENSURE the following: (N/A Train NOT used)</p> <table border="1" style="width:100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width:30%;">NOMENCLATURE</th> <th style="width:15%;">LOCATION</th> <th style="width:15%;">POSITION</th> <th style="width:20%;">UNID</th> <th style="width:20%;">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>PURGE SUP SUCT ISOL DAMPER 1-XI-30-294</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-294</td> <td></td> </tr> <tr> <td>PURGE SUP SUCT ISOL DAMPER 1-XI-30-295</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-295</td> <td></td> </tr> </tbody> </table> <p align="center">Train A</p> <table border="1" style="width:100%; border-collapse: collapse; margin-bottom: 10px;"> <tbody> <tr> <td>DAMPER 1-XI-30-1A</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-1A</td> <td></td> </tr> <tr> <td>DAMPER 1-XI-30-1B</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-1B</td> <td></td> </tr> </tbody> </table> <p align="center">Train B</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tbody> <tr> <td>DAMPER 1-XI-30-4A</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-4A</td> <td></td> </tr> <tr> <td>DAMPER 1-XI-30-4B</td> <td>1-M-9</td> <td>OPEN</td> <td>FCO-30-4B</td> <td></td> </tr> </tbody> </table> <p><u>STANDARD:</u></p> <p>Applicant determines from the INITATING CUES that Train B equipment will be used for the purge.</p> <p>Applicant observes that 1-XI-30-294, PURGE SUP SUCT ISOL DAMPER and 1-XI-30-295 RED indicating lights are LIT and GREEN indicating lights are DARK.</p> <p>Applicant refers to INITIATING CUES, determines that Train B will be placed in service and enters "N/A" for Step 16 addressing 1-HS-30-1A and 1-HS-30-1B.</p> <p>Applicant observes that damper FCO-30-4A is OPEN by the RED indicating lights LIT and the GREEN indicating light DARK on 1-XI-40-4A.</p> <p>Applicant observes that damper FCO-30-4B is OPEN by the RED indicating lights LIT and the GREEN indicating light DARK on 1-XI-40-4B.</p> <p>Step is critical to align Train B of the purge system.</p> <p><u>COMMENTS:</u></p> 	NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL	PURGE SUP SUCT ISOL DAMPER 1-XI-30-294	1-M-9	OPEN	FCO-30-294		PURGE SUP SUCT ISOL DAMPER 1-XI-30-295	1-M-9	OPEN	FCO-30-295		DAMPER 1-XI-30-1A	1-M-9	OPEN	FCO-30-1A		DAMPER 1-XI-30-1B	1-M-9	OPEN	FCO-30-1B		DAMPER 1-XI-30-4A	1-M-9	OPEN	FCO-30-4A		DAMPER 1-XI-30-4B	1-M-9	OPEN	FCO-30-4B		<p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID	PERF INITIAL																																
PURGE SUP SUCT ISOL DAMPER 1-XI-30-294	1-M-9	OPEN	FCO-30-294																																	
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DAMPER 1-XI-30-4B	1-M-9	OPEN	FCO-30-4B																																	

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.g
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 9:</u> [17] CHECK flow on 1-FI-90-400, SHIELD BLDG VT FLOW [1-M-9]. (N/A if FI NOT available)</p> <p><u>STANDARD:</u></p> <p>Applicant observes flow rising on 1-FI-90-400, SHIELD BLDG VT FLOW.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [18] IF FI-90-400 is NOT available, THEN ENSURE Flow being estimated per 1-SI-0-2-00, Shift & Daily Log.</p> <p><u>STANDARD:</u></p> <p>Applicant determines that 1-FI-90-400 is available and enters "N/A" for Step 18.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p style="text-align: center;">NOTE</p> <p>Ice Condenser vent curtain should be checked for proper vertical position and repositioned if necessary after starting CONTAINMENT purge.</p>	

B.1.g
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STEP 11: [19] **NOTIFY** the Chemistry Countroom of the purge start date and time.

____ SAT

_____ UNSAT

STANDARD:

Applicant notifies the Chemistry Countroom of the purge start date and time.

CUE: When notified, acknowledge the report. State “another operator will continue from here.”

COMMENTS:

END OF TASK

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

- 1. A purge of Upper Containment was just completed.**
- 2. A purge of the Lower Containment is scheduled to be performed on this shift.**
- 3. The area outside Unit 1 intake is clear of fumes and there are no running vehicles in the area.**
- 4. SOI-30.02, "Containment Purge System," Section 4.0, "Prerequisite Actions" is complete.**
- 5. SOI-30.02, "Containment Purge System," Section 5.2, "Start Up Lower Containment Purge," is complete through Step 10.**
- 6. You are an extra Control Room Operator assigned to the shift.**

INITIATING CUES:

The Unit Supervisor has directed you to place "B" train Lower Containment Purge in service, beginning at Step 11.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.h (RO ONLY)
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**B.1.h
Start Standby Main Feedwater Pump**

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WATTS BAY NUCLEAR PLANT
JOB PERFORMANCE MEASURE
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SIMULATOR OPERATOR INSTRUCTIONS:

1. ENSURE NRC Examination Security has been established.
2. Right click on 310, and then select RESET.
3. Enter the password.
4. Select "Yes" on the INITIAL CONDITION RESET pop-up window.
5. Place simulator in RUN and acknowledge any alarms.
7. ENSURE marked-up copy of SOI-2&3.01 "Condensate and Feedwater Systems," is available to the Examiner. Ensure that Step 8.9.[1] of SOI-2&3.01 is marked, "N/A."
8. Place simulator in FREEZE until Examiner cue is given.
9. Call up THUNDERVIEW SCREEN fw3, Main Feedwater which allows for reporting positions of valves associated with SFMP startup.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.h (RO ONLY)
2011-10 NRC Exam**

DIRECTIONS 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. The SMFP is aligned for service per SOI-2&3.01, "Condensate and Feedwater Systems," Section 5.9, "Standby Main Feed Pump Operation Or Standby Alignment."
3. You are the Control Room Operator (CRO).

INITIATING CUES:

1. The Unit Supervisor has directed you to place the Standby Main Feed Pump in service using SOI-2&3.01, "Condensate and Feedwater Systems," Section 8.9, "Replacing Turbine Driven MFP with SMFP, or Periodic Operation of SMFP."
2. Inform the Unit Supervisor when the Standby Main Feedwater Pump is in service, providing between 3500 and 4000 gpm of feedwater flow.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.h (RO ONLY)
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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

NOTE TO EVALUATOR: The following actions are taken from SOI-2&3.01, "Condensate and Feedwater System," Section 8.9, "Replacing Turbine Driven MFP with SMFP, or Periodic Operation of SMFP."

CAUTIONS

- 1) MFP discharge should remain less than 1185 psig when possible. Short duration press up to 1363 psig (MFP Disch Press Admin Limit) is acceptable, but care must be taken to prevent sudden pressure elevations from lifting #1 Heater Reliefs at 1650 psig.
- 2) Tripping either MFP with runback circuitry enabled will cause a BOP runback. Runback circuitry may be verified at 1-L-262 [729, T3J] using PIS-47-13 display. RLY1 indicates load >67% and RLY3, indicates load >85%. Impulse pressure equivalent to 85% load enables the runback circuitry.
- 3) MFP 1B must NOT be operated at a higher speed than MFP 1A or in the resonance speed range between 4900 and 5000 rpm due to high vibration on the inboard bearing and turning gear motor. Speed controllers have been calibrated to prevent this condition; however, a WO should be generated if the controllers fail to control this occurrence.

NOTES

- 1) One MFP is capable of delivering sufficient flow to maintain 67% load.
- 2) Unit load can be maintained at 85% with the SMFP and one MFP in operation.
- 3) Unit load can be maintained at 100% for periodic operation of SMFP with one TDMFP partially unloaded.
- 4) Starting a main feed pump (SBMFP or MFPT) may cause perturbation in heater drain tank levels that may NOT be compensated for by the level controllers.
- 5) In Mode 1, entry into Tech Spec 3.3.2 condition J may be suspended for up to 4 hours when removing one of two Turbine Driven Main Feedwater Pumps (TDMFWP) from service. Refer to Tech Spec 3.3.2 table 3.3.2-1.
- 6) In Mode 2, trip function of all Turbine Driven Main Feedwater Pumps (TDMFWP) is required when one or more (TDMFWP) is supplying feedwater to the Steam Generators. Refer to Tech Spec 3.3.2 condition J.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.h (RO ONLY)
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 1:</u> [1] IF one TDMFP is to be completely shutdown, THEN ENSURE Turbine Runback circuitry reset by verifying RLY3, PIS-47-13 DISPLAY NOT actuated (<85%) [Panel 1-L-262] [729/T3J].</p> <p><u>STANDARD:</u></p> <p>Applicant determines from the INITIAL CONDITIONS that the Main Feedwater pumps will remain in service, and the step is N/A.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 2:</u> [2] ENSURE SMFP is aligned for service per Section 5.9.</p> <p><u>STANDARD:</u></p> <p>Applicant determines from INITIAL CONDITIONS that the SMFP is aligned per Section 5.9.</p> <p><u>COMMENTS</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 3:</u> [3] VERIFY 1-FIC-3-208 [1-FIC-3-208], STANDBY MFWP RECIRC CONTROL [1-M-3], in AUTO, AND SET at 90% (1500 gpm).</p> <p><u>STANDARD:</u></p> <p>Applicant determines from controller 1-FIC-3-208 on 1-M-3 panel that the controller is in AUTO and is set at 90%.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 4:</u> [4] ENSURE 1-FCV-3-205 [1-HS-3-205], STANDBY MAIN FEEDWATER PUMP DISCHARGE ISOL [T1J/729], OPEN.</p> <p><u>STANDARD:</u></p> <p>Applicant contacts Turbine Building AUO and asks if 1-FCV-3-205 is OPEN.</p> <p>CUE: As Turbine Building AUO, when contacted report that 1-FCV-3-205 is open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 5:</u> [5] ENSURE 1-FCV-2-265 [1-HS-2-265], STANDBY MAIN FW PUMP SUCT ISOL [T1J/729], OPEN.</p> <p><u>STANDARD:</u></p> <p>Applicant contacts Turbine Building AUO and asks if 1-FCV-2-265 is OPEN.</p> <p>CUE: As Turbine Building AUO, when contacted report that 1-FCV-2-265 is open.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
B.1.h (RO ONLY)
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 6:</u> [6] VERIFY 1-PI-2-129, MFW PMPS SUCT PRESS [1-M-3], as follows:</p> <p style="margin-left: 40px;">A. Greater than 100 psig (below 50% load).</p> <p style="margin-left: 40px;">B. Greater than 250 psig (at or above 50% load).</p> <p><u>STANDARD:</u></p> <p style="margin-left: 40px;">Applicant observes 1-PI-2-129 MFW PMPS SUCT PRESS on 1-M-3 and determines that suction pressure is approximately 410-430 psig, sufficient for starting the SMFP.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 7:</u> [7] ENSURE 1-FCV-3-208 [1-HS-3-208], STANDBY MAIN FEEDWATER PUMP MIN FLOW [T1J/729], CLOSED.</p> <p><u>STANDARD:</u></p> <p style="margin-left: 40px;">Applicant contacts Turbine Building AUO and asks if 1-FCV-3-208 is CLOSED.</p> <p style="margin-left: 40px;">CUE: As TB AUO, when contacted report that 1-FCV-3-208 is closed.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>CAUTION</p> <p>Manual operation of TDMFP speed control during MFP starts/stops will minimize system fluctuations.</p>	

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
 B.1.h (RO ONLY)
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 8:</u> [8] (p) CONTROL TDMFP speed in MAN.</p> <p><u>STANDARD:</u></p> <p>___ Applicant places 1-PC-46-20, MFPT A & B MASTER SPEED CONTROL in MANUAL.</p> <p>Step is critical to ensure that feedwater oscillations are avoided when starting the SMFP.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 9:</u> [9] (p) IF SMFP to operate with TDMFP, THEN SLOWLY RAISE TDMFP speed until SMFP minimum flow head is achieved (above 1200 psig).</p> <p><u>STANDARD:</u></p> <p>Applicant ensures pressure is slightly above 1200 psig using 1-PI-3-66A (MFWP A DISCH PRESS) or 1-PI-3-80A (MFWP B DISCH PRESS) or 1-PI-3-1 (#1 HTR INLET PRESS). Applicant may increase TDMFP speed if necessary.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE
 B.1.h (RO ONLY)
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 10:</u> [10] (p) IF SMFP to operate with TDMFP, THEN START SMFP with 1-HS-3-200A, STANDBY MFWP, AND LOWER TDMFP flow, OR SHUTDOWN TDMFP per Section 7.3.</p> <p><u>STANDARD:</u></p> <p>Applicant starts SMFP with 1-HS-3-200A, observes amps on 1-EI-3-200, STANDBY MFWP AMPS, and pressure on 1-PI-3-203A, STANDBY MFWP DISCH PRESS.</p> <p>___ Applicant reduces TDMFP flow by reducing the control signal from 1-PC-46-20, MFPT A & B MASTER SPEED CONTROL, and observes a rise in flow from the SMFP. Per the INITIATING CUES the applicant will load the SMFP to between 3500 and 4000 gpm.</p> <p>CUE: When the applicant has loaded the SMFP to between 3500 and 4000 gpm, then state “another operator will perform the remainder of the section.”</p> <p>Step is critical to ensure that the SMFP is properly loaded.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

4. Unit 1 is at 100% power.
5. The SMFP is aligned for service per SOI-2&3.01, "Condensate and Feedwater Systems," Section 5.9, "Standby Main Feed Pump Operation Or Standby Alignment."
6. You are the Control Room Operator (CRO).

INITIATING CUES:

3. The Unit Supervisor has directed you to place the Standby Main Feed Pump in service using SOI-2&3.01, "Condensate and Feedwater Systems," Section 8.9, "Replacing Turbine Driven MFP with SMFP, or Periodic Operation of SMFP."
4. Inform the Unit Supervisor when the Standby Main Feedwater Pump is in service, providing between 3500 and 4000 gpm of feedwater flow.

WATTS BAR NUCLEAR PLANT

JOB PERFORMANCE MEASURE

B.1.i

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B.1.i

**Bypass 1-FCV-62-89 Charging Flow
for Local Control**

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.i
2011-10 NRC Exam**

EVALUATION SHEET

Task: Bypassing of 1-FCV-62-89, charging flow cont vlv, for the purposes of local control per SOI-62.01

Alternate Path: N/A

Facility JPM #: 3-OT-JPMA011 Rev 5

Safety Function: 2 **Title:** Inventory Control

K/A 004 A4.08 Ability to manually operate and/or monitor in the control room: Charging

Rating(s): 3.8/3.4 **CFR:** 41/7 / 45.5 to 45.8

Evaluation Method: Simulator _____ **In-Plant** X Classroom _____

References: SOI-62.01 Rev 62 "CVCS Charging and Letdown"

Task Number: AUO-062-SOI-62.1-007 **Title:** Bypassing 1-FCV-62-89, Charging Flow Control, for Local Control

Task Standard: 1-FCV-62-89, Charging Flow Control Valve has been bypassed in accordance with SOI-62.01, "CVCS-Charging and Letdown," Section 8.6, "Bypassing 1-FCV-62-89, CHARGING FLOW CONT, for Local Control" and Seal Flow to the RCPs has been returned to normal range (8 to 13 gpm).

Validation Time: 15 minutes **Time Critical:** Yes _____ No X

=====

<u>Applicant:</u> _____	Time Start: _____
NAME	Docket No.
	Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ **Performance Time** _____

Examiner: _____ / _____

NAME	SIGNATURE	DATE
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COMMENTS

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.i
2011-10 NRC Exam**

TOOLS/EQUIPMENT/PROCEDURES NEEDED:

Hard-hat,

Safety Glasses,

Hearing Protection

Plant Approved Shoes

Gloves

ALARA considerations

Note: Have a marked up copy of SOI-62.01, "CVCS-Charging and Letdown," Section 8.6, "Bypassing 1-FCV-62-89, CHARGING FLOW CONT, for Local Control" to give to each applicant.

START THIS JPM AT THE, RAD WASTE AUO DESK.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.i
2011-10 NRC Exam**

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 cue sheet I provided you.

INITIAL CONDITIONS:

1. Unit at 100% power.
2. 1-FCV-62-89 is malfunctioning and cannot be controlled from the Main Control Room (MCR).
3. Seal flow is at 6 gpm per RCP.
4. Charging flow is at 55 gpm.
5. You are an AUO on shift.

INITIATING CUES:

The Unit Operator has directed you to establish communications with the MCR, bypass 1-FCV-62-89, and take local control of the seal injection flow using SOI-62.01, "CVCS-Charging and Letdown," Section 8.6, "Bypassing 1-FCV-62-89, CHARGING FLOW CONT, for Local Control," while establishing and maintaining 8 to 13 gpm to each of the RCP seals.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.i

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

<p><u>STEP 1:</u> [1] ESTABLISH communications with personnel at the following areas as required:</p> <p>[1.1] Blender area [PNL 1-L-348, el 713]. _____</p> <p>[1.2] At least one Charging Flow indication area:</p> <p>A. Main Control Room [1-M-6] 1-FI-62-93A, CHARGING FLOW. _____</p> <p>B. Aux Control Room [1-L-10] 1-FI-62-93C, CHARGING FLOW. _____</p> <p>C. PNL 1-L-112A [el 692] 1-FI-62-93B, CVCS CHARGING HEADER FLOW. _____</p> <p><u>STANDARD:</u></p> <p>Applicant establishes communications with the Main Control Room.</p> <p>CUE: <i>When MCR contacted, the current charging flow is 55 gpm and the seal flow is 5 gpm per RCP.</i></p> <p>EXAMINER: <i>When in the area of 1-FCV-62-89 isolation valves (penetration room) the applicant may use the radio or phone to contact the MCR.</i></p> <p><u>COMMENTS:</u></p>	<p>____ SAT</p> <p>____ UNSAT</p>
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**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.i

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 2:</u> [2] OPEN 1-BYV-62-538, CVCS CHARGING FCV-62-89 BYPASS, until full open OR until charging flow rises.</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-BYV-62-538 and throttles it open (turned in the counter-clockwise direction).</p> <p>CUE: <i>After the bypass valve is throttled in the open direction, inform the applicant that there has been an increase in charging flow.)</i></p> <p>Step is critical to establish a flow path around the malfunctioning valve.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.i

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STEP/STANDARD				SAT/UNSAT												
<p>STEP 3: [3] CLOSE one of the following to isolate 1-FCV-62-89 (N/A valve NOT closed):</p> <table border="1"> <thead> <tr> <th align="center">NOMENCLATURE</th> <th align="center">LOCATION</th> <th align="center">UNID</th> <th align="center">PERF INITIAL</th> </tr> </thead> <tbody> <tr> <td>CVCS CHARGING HEADER ISOLATION</td> <td>A4U/692</td> <td>1-ISV-62-537</td> <td></td> </tr> <tr> <td>CVCS CHARGING HEADER ISOLATION</td> <td>A4U/692</td> <td>1-ISV-62-539</td> <td></td> </tr> </tbody> </table> <p>STANDARD:</p> <p>___ Applicant locates 1-ISV-62-537 or 1-ISV-62-539 and closes either valve (turned in the clockwise direction).</p> <p>Applicant enters "N/A" for valve not closed.</p> <p>CUE: <i>After the applicant indicates the valve closes in the clockwise direction, inform the applicant that the hand wheel turns several turns and stops.)</i></p> <p>CUE: <i>After the applicant closes either valve, inform the applicant that RCP seal flow is 14 gpm per pump.</i></p> <p>Step is critical to isolate the flow path thru the malfunctioning valve.</p> <p>COMMENTS:</p>				NOMENCLATURE	LOCATION	UNID	PERF INITIAL	CVCS CHARGING HEADER ISOLATION	A4U/692	1-ISV-62-537		CVCS CHARGING HEADER ISOLATION	A4U/692	1-ISV-62-539		<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	UNID	PERF INITIAL													
CVCS CHARGING HEADER ISOLATION	A4U/692	1-ISV-62-537														
CVCS CHARGING HEADER ISOLATION	A4U/692	1-ISV-62-539														
NOTE																
CLOSING 1-BYV-62-538 raises seal flow.																

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.i

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STEP/STANDARD	SAT/UNSAT
<p>STEP 4: [4] ADJUST 1-BYV-62-538, CVCS CHARGING FCV-62-89 BYPASS [A4U/692], to maintain between 8 and 13 gpm to each RCP.</p> <p><u>STANDARD:</u></p> <p>___ Applicant indicates 1-BYV-62-538 is throttled open (turned counterclockwise) to decrease seal flow and stabilized between 8 to 13 gpm.</p> <p>CUE: <i>After valve throttled counterclockwise to open, state that seal flow is now 9 gpm.</i></p> <p>CUE: <i>After 9 gpm seal flow has been established, state "the Rad Waste AUO will take over and maintain the seal flow."</i></p> <p>Step is critical to ensure adequate seal flow to each RCP.</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>

STOP TIME _____

APPLICANT CUE SHEET

(RETURN TO EXAMINER UPON COMPLETION OF TASK)

INITIAL CONDITIONS:

1. Unit at 100% power.
2. 1-FCV-62-89 is malfunctioning and cannot be controlled from the Main Control Room (MCR).
3. Seal flow is at 6 gpm per RCP.
4. Charging flow is at 55 gpm.
5. You are an AUO on shift.

INITIATING CUES:

The Unit Operator has directed you to establish communications with the MCR, bypass 1-FCV-62-89, and take local control of the seal injection flow using SOI-62.01, "CVCS-Charging and Letdown," Section 8.6, "Bypassing 1-FCV-62-89, CHARGING FLOW CONT, for Local Control," while establishing and maintaining 8 to 13 gpm to each of the RCP seals.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.j
2011-10 NRC Exam**

**B.1.j
Rolling 1B-B DG to Check for Water in
Cylinders Per SOI-82.02**

B.1.j
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**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.j
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TOOLS/EQUIPMENT/PROCEDURES NEEDED:

Hard-hat,

Safety Glasses,

Hearing Protection

Plant Approved Shoes

Gloves

ALARA considerations

Note: Have a marked up copy of SOI-82.02, "Diesel Generator 1B-B," Section 8.2, ""Rolling" DG to Check for Water in Cylinders," to give to each applicant.

START THIS JPM IN THE SERVICE BUILDING CORRIDOR ABOVE MAINTENANCE SHOPS, ELEVATION 729, NEAR THE NORTH EXIT FROM BUILDING (ROLL-UP DOOR).

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.j
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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 cue sheet I provided you.

INITIAL CONDITIONS:

- 1. Unit 1 is in Mode 1 with all equipment operable.**
- 2. Preplanned surveillance testing requires rolling of DG 1B-B.**
- 3. The Unit SRO has approved the DG rolling.**
- 4. DG 1B-B is presently in standby alignment.**
- 5. You are an AUO on shift.**

INITIATING CUES:

- 1. The Control Room Operator directs you to roll 1B-B DG one complete revolution to check for water per SOI-82.02, "Diesel Generator 1B-B," Section 8.2, ""Rolling" DG to Check for Water in Cylinders."**
- 2. Notify the Main Control Room when the task is complete.**

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

NOTE

Source Note C.1 applies to this entire section.

STEP 1: [1] NOTIFY SRO to evaluate entering LCO 3.8.1.

___ SAT

___ UNSAT

STANDARD:

Applicant contacts Unit Supervisor to evaluate entry in LCO 3.8.1 for DG 1B-B.

CUE: *AS Unit Supervisor, acknowledge request, then state that you will make entry into LCO tracking log.*

COMMENTS:

STEP 2: [2] PLACE 1-HS-82-48, DG MODE SELECTOR SWITCH, in UNIT, PULL FOR LOCAL TRANSFER [0-M-26].

___ SAT

___ UNSAT

STANDARD:

Applicant contacts MCR to have 1-HS-82-48, DG MODE SELECTOR, placed in PULL FOR LOCAL TRANSFER.

CUE: *When contacted, repeat back, then report that 1-HS-82-48 has been placed in PULL FOR LOCAL TRANSFER.*

COMMENTS:

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p>STEP 3: [3] PRESS 1-HS-82-52, TRIP TO LOCAL GEN 1B-B, to trip LRX1B to LOCAL. [1-ARB-82-B/3, Diesel Generator 1B-B Relay Board]</p> <p>STANDARD:</p> <p>Applicant locates switch 1-HS-82-52, TRIP TO LOCAL GEN 1B-B and indicates that it would be pressed.</p> <p>CUE: <i>If asked, state that an audible snap of a relay was heard when hand switch was depressed.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 4: [4] CHECK 1-RLY-82-LRX1B, DG 1B-B LOCAL/REMOTE CONTROL LOCKOUT, in LOCAL. [1-ARB-82-B/1, Diesel Generator 1B-B Relay Board]</p> <p>STANDARD:</p> <p>Applicant locates 1-RLY-82-LRX1B, DG 1B-B LOCAL/REMOTE CONTROL LOCKOUT, and checks that it is in the LOCAL position.</p> <p>CUE: <i>When LRX1B is checked, indicate that it is in the LOCAL position if pushbutton was correctly addressed in previous step.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p>STEP 5: [5] PLACE 1-HS-82-53, MAINT-AUTO SWITCH GEN 1B-B, in MAINT [1-PNL-82-B/2, Diesel Engine 1B1/1B2 Control Panel].</p> <p>STANDARD:</p> <p>___ Applicant locates switch 1-HS-82-53, MAINT-AUTO SWITCH GEN 1B-B, and indicates it would be rotated to the MAINT position.</p> <p>CUE: <i>When rotating the switch to the MAINT position is addressed, cue that it is in the MAINT position.</i></p> <p>Step is critical to block auto starts of the DG.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 6: [6] OPEN 1-SW-82-B/1, DG 1B-B DISCONNECT SWITCH, [Local Switchgear Pnl, 1B-B DG Rm]</p> <p>STANDARD:</p> <p>___ Applicant locates switch 1-SW-82-B/1, DG 1B-B DISCONNECT SWITCH and indicates the switch would be opened by pulling the handle down.</p> <p>CUE: <i>When applicant addresses opening the switch by pulling the handle down cue that the handle is in the down position.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>Step is critical to ensure DG does not rotate.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.j
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STEP/STANDARD	SAT/UNSAT																				
NOTE The following step will cause annunciator window 202C to alarm.																					
<p>STEP 7: [7] PERFORM the following:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"><thead><tr><th style="width: 35%;">NOMENCLATURE</th><th style="width: 15%;">LOCATION</th><th style="width: 15%;">POSITION</th><th style="width: 35%;">UNID</th></tr></thead><tbody><tr><td>DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL</td><td>DGB</td><td>CLOSED</td><td>1-ISV-82-520B1</td></tr><tr><td>DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL</td><td>DGB</td><td>CLOSED</td><td>1-ISV-82-528B1</td></tr><tr><td>DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL</td><td>DGB</td><td>CLOSED</td><td>1-ISV-82-554B2</td></tr><tr><td>DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL</td><td>DGB</td><td>CLOSED</td><td>1-ISV-82-562B2</td></tr></tbody></table> <p style="margin-top: 10px;">STANDARD:</p> <p>___ Applicant locates the above listed valves to be closed and indicates they would be closed by turning their handles clockwise (90 deg. to pipe).</p> <p>CUE: <i>As applicant locates and addresses closing the valves, cue that their handles turned clockwise and are 90 deg. to pipe.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p style="margin-top: 10px;">This step is critical to isolate air to the air start motors for the DG.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-520B1	DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-528B1	DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-554B2	DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-562B2	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID																		
DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-520B1																		
DG ENG 1B1 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-528B1																		
DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-554B2																		
DG ENG 1B2 AIR STARTMOTOR SUPPLY ISOL	DGB	CLOSED	1-ISV-82-562B2																		
NOTES																					
<p>1) Maintenance may assist with Steps 8.2[8] thru 8.2[13], if available, BUT in ALL cases, these steps must be performed and signed off. [C.7]</p> <p>2) The cylinder test plugs are reverse threaded and reverse acting. Turning the operating nut counter clockwise opens the valve, but the operating nut itself moves toward the valve body. See Appendix C.</p>																					

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p>STEP 8: [8] OPEN counter clock wise all the cylinder test plugs, on both engines, one and one half turns using a 5/8" wrench or equivalent. There are 32 test plugs (1-16 on each engine).</p> <p><u>STANDARD:</u></p> <p>___ Applicant describes how to open one cylinder test plug one and one half turns. (Described in Appendix C).</p> <p>CUE: <i>After the first cylinder test plug is demonstrated, inform operator that all test plugs are now open.</i></p> <p>Step is critical to ensure test plug is opened correctly to vent water and prevent engine damage.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p style="text-align: center;">CAUTION</p> <p>If a jack handle extension is used with the Engine Turning Jack Assembly, it shall be no longer than 55 inches.</p>	

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 9:</u> [9] INSTALL jacking device.</p> <p style="padding-left: 40px;">[9.1] ROTATE engine through one revolution manually</p> <p><u>STANDARD:</u></p> <p>Applicant indicates where the jacking device would be installed to rotate the DG one revolution. Physically locating the device is not required.</p> <p>CUE: <i>If applicant begins to leave to obtain the jacking device cue that he has the device.</i></p> <p>CUE: <i>After installation and use is discussed, cue that the device was installed and the engine has been rotated through one revolution.</i></p> <p>EXAMINER: To install the jacking device, the panel covering the air start gear is removed. The jacking device sits in a mount behind this panel when in use.</p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [10] REMOVE jacking device</p> <p><u>STANDARD:</u></p> <p>Applicant indicates the Jacking device is removed from the DG.</p> <p>CUE: <i>After removal is addressed, cue that the device has been removed.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
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STEP/STANDARD	SAT/UNSAT
NOTE	
<p>If excessive amounts of water are ejected, a gasket leak or crack has developed and repairs should be initiated.</p>	
<p>STEP 11: [11] IF water discharges from the test plug holes, THEN</p> <p style="padding-left: 40px;">[11.1] DISCONTINUE startup.</p> <p style="padding-left: 40px;">[11.2] NOTIFY SM.</p> <p><u>STANDARD:</u></p> <p>___ Applicant checks for water discharge from the test plug holes.</p> <p>CUE: <i>When checked, state that no water was discharged.</i></p> <p>Step is critical to ensure no water leaks in DG Engine.</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>
NOTE	
<ol style="list-style-type: none"> 1) The cylinder test plugs are reverse threaded <u>and</u> reverse acting. Turning the operating nut clockwise closes the valve, but the operating nut itself moves away from the valve body. Use the D/G Test Plug Feeler Gauge between the hex-shaped operating nut and valve body to verify the valve is closed. See Appendix D. 2) Do not over-torque the operating nut. 2-2 1/2 turns of the nut are required to fully close the test plug assembly from the full open position. "Snug tight" is all that is required to ensure full closure. 	

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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STEP/STANDARD	SAT/UNSAT
<p>STEP 12: [12] CLOSE clockwise the cylinder test plug valves (32) snug tight, using a cylinder 5/8" wrench or equivalent. Use the D/G Test Plug Feeler Gauge to ensure all (32) plug valves are closed.</p> <p>STANDARD:</p> <p>___ Applicant discusses how to tighten and verify one cylinder plug using 5/8" wrench and D/G Test Plug Feeler Gauge (Described in Appendix D). Physically locating the wrench and feeler gauge is not required.</p> <p>CUE: <i>If applicant begins to leave to obtain the 5/8" wrench and D/G Test Plug Feeler Gauge cue that he has them.</i></p> <p>CUE: <i>After the first cylinder test plug is demonstrated, inform operator that, all 32 test plugs are closed.</i></p> <p>This step is critical to enable the DG to be started.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 13: [13] VERIFY all (32) cylinder test plug valves are closed using the D/G Test Plug Feeler Gauge.</p> <p>STANDARD:</p> <p>Applicant requests IV to verify all (32) cylinder test plug valves are closed using the D/G Test Plug Feeler Gauge.</p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>COMMENTS:</p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.j
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STEP/STANDARD	SAT/UNSAT																				
<p>NOTE</p> <p>The following step will allow annunciator window 202C to clear, if alarm is in.</p>																					
<p>STEP 14: [14] PERFORM the following:</p> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width:30%;">NOMENCLATURE</th> <th style="width:15%;">LOCATION</th> <th style="width:15%;">POSITION</th> <th style="width:40%;">UNID</th> </tr> </thead> <tbody> <tr> <td>DG ENG 1B1 AIR START MOTOR SUPPLY ISOL</td> <td>DGB</td> <td>LOCKED OPEN</td> <td>1-ISV-82-520B1</td> </tr> <tr> <td>DG ENG 1B1 AIR START MOTOR SUPPLY ISOL</td> <td>DGB</td> <td>LOCKED OPEN</td> <td>1-ISV-82-528B1</td> </tr> <tr> <td>DG ENG 1B2 AIR START MOTOR SUPPLY ISOL</td> <td>DGB</td> <td>LOCKED OPEN</td> <td>1-ISV-82-554B2</td> </tr> <tr> <td>DG ENG 1B2 AIR START MOTOR SUPPLY ISOL</td> <td>DGB</td> <td>LOCKED OPEN</td> <td>1-ISV-82-562B2</td> </tr> </tbody> </table> <p style="margin-top: 20px;">STANDARD:</p> <p>___ Applicants locates and describes opening the above listed valves. Valves are opened by turning their handles counter clockwise.</p> <p>CUE: <i>As applicant locates and addresses opening the valves, cue that their handles turned counter clockwise and are parallel to the pipe.</i></p> <p>CUE: <i>If the operator requests an CV, acknowledge the request.</i></p> <p>This step is critical to line air to the air start motors for the DG.</p> <p>COMMENTS:</p>	NOMENCLATURE	LOCATION	POSITION	UNID	DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-520B1	DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-528B1	DG ENG 1B2 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-554B2	DG ENG 1B2 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-562B2	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
NOMENCLATURE	LOCATION	POSITION	UNID																		
DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-520B1																		
DG ENG 1B1 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-528B1																		
DG ENG 1B2 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-554B2																		
DG ENG 1B2 AIR START MOTOR SUPPLY ISOL	DGB	LOCKED OPEN	1-ISV-82-562B2																		

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.j
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STEP/STANDARD	SAT/UNSAT
<p>STEP 15: [15] CLOSE 1-SW-82-B/1, DG 1B-B DISCONNECT SWITCH, [Local Switchgear Pnl, 1B-B DG Rm]</p> <p>STANDARD:</p> <p>___ Applicant indicates 1-SW-82-B/1, DG 1B-B DISCONNECT SWITCH, would be closed by moving the handle to the up position.</p> <p>CUE: <i>When applicant addresses closing the switch by moving the handle up cue that the handle is in the up position.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>This step is critical to restore DG operability.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 16: [16] PLACE 1-HS-82-53, MAINT-AUTO SWITCH GEN 1B-B, in AUTO. [1-PNL-82-B/2, Diesel Engine 1B1/1B2 Control Panel].</p> <p>STANDARD:</p> <p>___ Applicant locates switch 1-HS-82-53, MAINT-AUTO SWITCH GEN 1B-B, and indicates it would be rotated to the AUTO position.</p> <p>CUE: <i>When rotating the switch to the AUTO position is addressed, cue that it is in the AUTO position.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>This step is critical to enable DG operation.</p> <p>COMMENTS:</p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.j
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STEP/STANDARD	SAT/UNSAT
NOTE	
<p>If returning to Section 8.1.2 upon completion of this section, then Steps 8.2[17] and 8.2[18] are N/A.</p>	
<p>STEP 17: [17] PLACE 1-RLY-82-LRX1B, DG 1B-B LOCAL/REMOTE CONTROL LOCKOUT, in REMOTE [1-ARB-82-B/1 Diesel Generator 1B-B Relay Board].</p> <p><u>STANDARD:</u></p> <p>___ Applicant indicates 1-RLY-82-LRX1B, DG 1B-B LOCAL/REMOTE CONTROL LOCKOUT would be rotated to the REMOTE position. (Vertical Position).</p> <p>CUE: <i>When rotating the relay to the REMOTE position is addressed, cue that it is in the REMOTE position.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>This step is critical to allow return to standby of DG.</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
JOB PERFORMANCE MEASURE**

B.1.j
2011-10 NRC Exam

STEP/STANDARD	SAT/UNSAT
<p>STEP 18: [18] PLACE 1-HS-82-48, DG MODE SELECTOR, in UNIT (PUSHED IN position) [0-M-26]</p> <p><u>STANDARD:</u></p> <p>___ Applicant contacts the MCR to place 1-HS-82-48, DG MODE SELECTOR, in UNIT.</p> <p>CUE: <i>When contacted, repeat back, and then report that 1-HS-82-48 has been placed in UNIT.</i></p> <p>CUE: <i>If the operator requests an IV, acknowledge the request.</i></p> <p>This step is critical to allow return to standby of DG.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p>STEP 19: [19] NOTIFY SRO to evaluate exiting LCO 3.8.1.</p> <p><u>STANDARD:</u></p> <p>Applicant contacts Unit Supervisor to evaluate exiting LCO 3.8.1 for DG 1B-B.</p> <p>CUE: <i>AS Unit Supervisor, acknowledge request, then state that you will make entry into LCO tracking log.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.j
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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 20:</u> [20] ENSURE 0-SI-82-9 has been updated (Diesel Generator out of service log).</p> <p><u>STANDARD:</u></p> <p>Applicant contacts the MCR to update 0-SI-82-9 (Diesel Generator Out Of Service Log).</p> <p>CUE: <i>When contacted, repeat back, then report 0-SI-82-9 has been updated.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 21:</u> Notify Main Control Room that 1B-B DG has been rolled to check for water in cylinders.</p> <p><u>STANDARD:</u></p> <p>Main Control Room is notified that the 1B-B DG has been rolled.</p> <p><u>COMMENTS:</u></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)

INITIAL CONDITIONS:

1. Unit 1 is in Mode 1 with all equipment operable.
2. Preplanned surveillance testing requires rolling of DG 1B-B.
3. The Unit SRO has approved the DG rolling.
4. DG 1B-B is presently in standby alignment.
5. You are an AUO on shift.

INITIATING CUES:

1. The Control Room Operator directs you to roll 1B-B DG one complete revolution to check for water per SOI-82.02, "Diesel Generator 1B-B," Section 8.2, ""Rolling" DG to Check for Water in Cylinders."
2. Notify the Main Control Room when the task is complete.

B.1.k
Swap Seal Injection Filters

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

B.1.k

2011-10 NRC Exam

EVALUATION SHEET

Task: Swap Seal Injection Filters.

Alternate Path: n/a

Facility JPM #: 3-OT-JPMA116

Safety Function: 4P **Title:** Heat Removal from Reactor Core

K/A 003 A4.01 Ability to manually operate and/or monitor in the control room: Seal injection

Rating(s): 3.3/3.2 **CFR:** 41.7 / 45.5 to 45.8

Evaluation Method: Simulator _____ In-Plant _____ **X** Classroom _____

References: SOI-62.01, CVCS - CHARGING AND LETDOWN, Rev. 62.

Task Number: AUO-062-SOI-62.1-014 **Title:** Swap Seal Injection Filters.

Task Standard: Seal Injection Filters have been swapped with "A" in service and "B" out of service in accordance with SOI-62.01, "CVCS-Charging and Letdown," Section 8.9.2, "Replacing Filter B with Filter A."

Validation Time: 15 minutes **Time Critical:** Yes _____ No **X** _____

Applicant: _____ _____ Time Start: _____
NAME Docket No. Time Finish: _____

Performance Rating: SAT _____ UNSAT _____ Performance Time _____

Examiner: _____ _____ / _____
NAME SIGNATURE DATE

COMMENTS

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

**B.1.k
2011-10 NRC Exam**

Tools/Equipment/Procedures Needed:

Hard-hat,
Safety Glasses,
Hearing Protection
Plant Approved Shoes
Gloves
ALARA considerations

Note: Have a marked up copy of SOI-62.01, "CVCS-Charging and Letdown," Section 8.9.2, "Replacing Filter B with Filter A," to give to the applicant.

Note: START THIS JPM AT THE RADWAST AUO DESK.

**WATTS BAR NUCLEAR PLANT
JOB PERFORMANCE MEASURE**

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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 cue sheet I provided you.

INITIAL CONDITIONS:

1. Unit 1 is at 90% power.
2. Seal injection filter B is in service and Window 101-D RCP SEAL INJ FILTER A/B ΔP HI is in alarm.
3. You are an AUO on shift.

INITIATING CUES:

1. The Unit Operator has directed you to swap seal injection filters per SOI-62.01, "CVCS-Charging and Letdown," Section 8.9.2, "Replacing Filter B with Filter A."
2. You are to place A seal injection filter in service and remove B seal injection filter from service.
3. You are to notify the Unit Operator when the seal injection filter swap is complete.

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STEP/STANDARD	SAT/UNSAT
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START TIME: _____

NOTE

Opening valves slowly when placing the seal water injection filters in service allows the pressure to equalize across filter and prevents filter cartridge failure. Slow operation also minimizes the potential for torque storage in the cable coupling between the reach rod and the handwheel, which may result in unwanted rapid opening of the valve and loss of seal injection flow.

STEP 1: [1] **CHECK** 1-PDIS-62-96, CVCS SEAL WTR INJECTION FILTER B DIFF PRESS [A5T/713], indicates ΔP greater than 20 psid. (**N/A** if filter changed at discretion of Unit SRO)

___ SAT

___ UNSAT

STANDARD:

Applicant locates 1-PDIS-62-96, CVCS SEAL WTR INJECTION FILTER B DIFF PRESS and checks indicated differential pressure.

Cue: *After located and checked, indicate a value of 22 psid.*

COMMENTS:

STEP 2: [2] **ENSURE** RCP standpipe levels NORMAL (HI/LO alarm clear).

___ SAT

STANDARD:

___ UNSAT

Applicant contacts the Operator-at-the-Controls (OAC) and requests status of the RCP Standpipe level alarms.

Cue: *After OAC is contacted, state that there are NO alarms or other indication of abnormal stand pipe level.*

COMMENTS:

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 3:</u> [3] SLOWLY OPEN 1-ISV-62-548, CVCS SEAL WTR INJ FLTR A IN ISOL [A5T/713].</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-ISV-62-548, CVCS SEAL WTR INJ FLTR A IN ISOL and demonstrates how to open the valve (rotating hand wheel in the counter clockwise direction.)</p> <p>Cue: <i>After hand wheel is rotated CCW, state that the hand wheel turns several rotations and stops.</i></p> <p>Step is critical to proper alignment of flow path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 4:</u> [4] SLOWLY OPEN 1-ISV-62-550, CVCS SEAL WTR INJ FILTER A OUT ISOL [A5T/713].</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-ISV-62-550, CVCS SEAL WTR INJ FILTER A OUT ISOL and demonstrates how to open the valve (rotating hand wheel in the counter clockwise direction.).</p> <p>Cue: <i>After hand wheel is rotated CCW, state that the hand wheel turns several rotations and stops.</i></p> <p>Step is critical to proper alignment of flow path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 5:</u> [5] ENSURE RCP seal injection flow between 8 and 13 gpm.</p> <p><u>STANDARD:</u></p> <p>Applicant contacts the Operator-at-the-Controls (OAC) and requests that RCP seal injection flows be checked between 8 and 13 gpm.</p> <p>Cue: <i>After MCR called, state the seal flow is 9 gpm per pump.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 6:</u> [6] CHECK ΔP rose on A filter prior to isolating B filter.</p> <p><u>STANDARD:</u></p> <p>Applicant locates 1-PDIS-62-97, CVCS SEAL WTR INJECTION FILTER A DIFF PRESS and checks for a rise in pressure prior to isolating B filter.</p> <p>Cue: <i>When 1-PDIS-62-97, CVCS SEAL WTR INJECTION FILTER A DIFF PRESS is checked indicate on gage a value of 6 psid</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 7:</u> [7] CLOSE 1-ISV-62-549, CVCS SEAL WTR INJ FILTER B OUT ISOL [A5T/713].</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-ISV-62-549, CVCS SEAL WTR INJ FILTER B OUT ISOL and demonstrates how to close the valve (rotating hand wheel in the clockwise direction.)</p> <p>Cue: <i>After hand wheel is rotated CW, state that the hand wheel turns several rotations and stops.</i></p> <p>Step is critical to proper alignment of flow path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 8:</u> [8] CLOSE 1-ISV-62-547, CVCS SEAL WTR INJ FLTR B IN ISOL [A5T/713].</p> <p><u>STANDARD:</u></p> <p>___ Applicant locates 1-ISV-62-547, CVCS SEAL WTR INJ FLTR B IN ISOL and demonstrates how to close the valve (rotating hand wheel in the clockwise direction.)</p> <p>Cue: <i>After hand wheel is rotated CW, state that the hand wheel turns several rotations and stops.</i></p> <p>Step is critical to proper alignment of flow path.</p> <p><u>COMMENTS:</u></p>	<p>CRITICAL STEP</p> <p>___ SAT</p> <p>___ UNSAT</p>

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STEP/STANDARD	SAT/UNSAT
<p><u>STEP 9:</u> [9] ENSURE 1-PDIS-62-97, CVCS SEAL WTR INJECTION FILTER A DIFF PRESS [A5T/713], indicates ΔP less than 20 psid.</p> <p><u>STANDARD:</u></p> <p>Applicant locates 1-PDIS-62-97, CVCS SEAL WTR INJECTION FILTER A DIFF PRESS and Filter A's ΔP is checked to be <20 psid on 1-PDIS-62-96.</p> <p>Cue: <i>After ΔP check, indicate value of 12 psid on the gage.</i></p> <p><u>COMMENTS:</u></p>	<p>___ SAT</p> <p>___ UNSAT</p>
<p><u>STEP 10:</u> [10] INITIATE SR to replace clogged filter, and NOTIFY UO to record SR number. (N/A if open SR available for filter replacement)</p> <p><u>STANDARD:</u></p> <p>Applicant indicates that a Service Request (SR) must be initiated, and that the Unit Operator must be informed of SR number.</p> <p>Cue: <i>When notified, state that another operator will initiate the Service Request and inform the UO of the SR number.</i></p> <p>Cue: <i>When notified, repeat back the information provided by the applicant.</i></p> <p><u>COMMENTS:</u></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)

INITIAL CONDITIONS:

1. Unit 1 is at 90% power.
2. Seal injection filter B is in service and Window 101-D RCP SEAL INJ FILTER A/B ΔP HI is in alarm.
3. You are an AUO on shift.

INITIATING CUES:

1. The Unit Operator has directed you to swap seal injection filters per SOI-62.01, "CVCS-Charging and Letdown," Section 8.9.2, "Replacing Filter B with Filter A."
2. You are to place A seal injection filter in service and remove B seal injection filter from service.
3. You are to notify the Unit Operator when the seal injection filter swap is complete.