

Facility: KewauneeTask No: A-CC-31Task Title: Isolate Leak in SW HXJob Performance Measure No: B.1.dK/A References: 008.A4.01 (3.3/3.1)

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_

## READ TO THE EXAMINEE

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

Initial Conditions:

- The plant is at 100% power.
- Annunciator 47041-L, "VCT TEMPERATURE HIGH," has just alarmed.
- You are the Nuclear Control Operator.

Task Standards: A-CC-31, "Abnormal Component Cooling Operations," ARP 47041-L, "VCT TEMPERATURE HIGH," and ARP 47024-H, "CC SURGE TANK LEVEL HIGH/LOW."

Required Materials: A-CC-31, "Abnormal Component Cooling Operations," ARP 47041-L, "VCT TEMPERATURE HIGH," and ARP 47024-H, "CC SURGE TANK LEVEL HIGH/LOW."

General References: A-CC-31, "Abnormal Component Cooling Operations," ARP 47041-L, "VCT TEMPERATURE HIGH," and ARP 47024-H, "CC SURGE TANK LEVEL HIGH/LOW."

Initiating Cue: **The CRS directs you to address annunciator 47041-L, "VCT TEMPERATURE HIGH."**

Time Critical Task: **NO**

Validation Time: 12 minutes

Facility: Kewaunee

Job Performance Measure No: B.1.d

Initial Conditions:

- The plant is at 100% power.
- Annunciator 47041-L, "VCT TEMPERATURE HIGH," has just alarmed.
- You are the Nuclear Control Operator..

Initiating Cue: **The CRS directs you to address annunciator 47041-L, "VCT TEMPERATURE HIGH."**

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

Starting Time: \_\_\_\_\_

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1 Performance step: Refer to ARP 47041-L, “VCT TEMPERATURE HIGH.”

Standard:

1. VERIFY proper operation of CC-302/CV-31100 Letdown Cont Outl Temp.
2. Check Seal Water Heat Exchanger outlet temp (Local Temp indicator TI-120), IF outlet temp is high THEN increase component cooling water flow to Seal Water Heat Exchanger - NCO contacts local operator to obtain Local Temp Indication.

Comment: Annunciator 47024-H, “CC SURGE TANK LEVEL HIGH/LOW,” will Alarm, then NCO will receive cue: “The seal water heat exchanger flange has a large leak.”

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2 Performance step: ARP 47041-L, “VCT TEMPERATURE HIGH,” recommended action 3

Standard: Divert Letdown flow from the VCT to the CVC Holdup tanks.

Comment:

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NOTE: START ALTERNATE PATH HERE

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3 Performance step: Refer to ARP 47024-H, “CC SURGE TANK LEVEL HIGH/LOW.”

Standard: Recommended Action 3 directs the NCO to A-CC-31, “Abnormal Component Cooling System Operations.”

Comment:

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4 Performance step: A-CC-31, “Abnormal Component Cooling Operations,” steps 4.0, 1, 2, 4 and 5.

Standard: Refer to procedure A-CC-31, “Abnormal Component Cooling Operations”, and VERIFY previous continuous action steps (CAS).

Comment: Provide working copy of A-CC-31, “Abnormal Component Cooling Operations.”

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5\* Performance step: A-CC-31, "Abnormal Component Cooling Operations," step 2.b  
Check CC surge tank level LI-618 - GREATER THAN 45%

Standard: Initiate surge tank makeup -

Locally throttle DW-161, make up supply from demineralized water, as necessary to maintain surge tank level stable at 45 - 52%.

Comment:

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6 Performance step: A-CC-31, "Abnormal Component Cooling Operations", step 8.

Standard: Check CC Flow to Seal Water Heat Exchanger (SWHX):

- CC Pumps - At least one running
- VCT Outlet Temp., TI-140 - Stable or Decreasing

Comment:

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7\* Performance step: A-CC-31, "Abnormal Component Cooling Operations", step 17,  
Cont. Actions. Candidate determines that the SWHX is not intact.

Standard: Isolate seal water heat exchanger:

- a. OPEN CVC-218, SWHX Bypass.
- b. CLOSE CVC-217, SWHX Outlet.
- c. CLOSE CVC-216, SWHX Inlet.
- d. MONITOR VCT Temp., TI-140.
- e. ADJUST CC-302/CV-31100, Non Rgn Hx Ltdn Outlet Temp., as necessary to maintain VCT Temp. < 130°F

Terminating cue: **When the SWHX is isolated the JPM is completed.**

Completion Time:

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.d    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

Every JPM should:

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3.  be designed as either SRO only, **RO/SRO** or AO/RO/SRO.
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  - b.  initiating cues
  - c.  references and tools, including associated procedures
  - d.  validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
  - e.  specific performance criteria that include:
    - (1)  expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
    - (2)  system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
    - (3)  statements describing important observations that should be made by the examinee
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    - (6)  restrictions on the sequence of steps

**FOR SIMULATOR USE ONLY**

Setup:

100% power IC.

Insert override (or malfunction) to light annunciator 47041-L, VCT TEMPERATURE HIGH.

Insert override (or malfunction) to raise TI-140 to 130°F and slowly increasing.

EITHER CC pump is running (only ONE).

Radiation monitors are NORMAL.

RXCPs, CCHX Outlet and LDHX Outlet parameters are NORMAL.

CC pipe/flange leak at inlet to SWHX

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Facility: KewauneeTask No: E-CVC-35Task Title: Emergency BorationJob Performance Measure No: B.1.bK/A References: 004.A4.01Examinee: \_\_\_\_\_NRC Examiner: \_\_\_\_\_Facility Evaluator: \_\_\_\_\_Date: \_\_\_\_\_Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_

## READ TO THE EXAMINEE

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

Initial Conditions:

- The plant just tripped from 100% power.
- There is NO indication of control rod position indication on IRPI.
- You are in procedure ES-0.1, Reactor Trip Response, Step 3.
- You are the Nuclear Control Operator.

Task Standards: E-CVC-35, "Emergency Boration".Required Materials: E-CVC-35, "Emergency Boration"General References: E-CVC-35, "Emergency Boration"Initiating Cue: **The CRS directs you to perform E-CVC-35, "Emergency Boration," for the loss of IRPI indication.**Time Critical Task: **NO**Validation Time: 12 minutes

Facility: Kewaunee

Job Performance Measure No: B.1.a

Initial Conditions:

- The plant just tripped from 100% power.
- There is NO indication of control rod position indication on IRPI.
- You are in procedure ES-0.1, Reactor Trip Response, Step 3.
- You are the Nuclear Control Operator.

Initiating Cue: **The CRS directs you to perform E-CVC-35, “Emergency Boration,” for the loss of IRPI indication.**

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*\*”)

Starting Time: \_\_\_\_\_

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1 Performance step: Refer to procedure E-CVC-35, “Emergency Boration,”

Standard: E-CVC-35, “Emergency Boration,” 3.0 IMMEDIATE ACTIONS.

Comment: Provide working copy of E-CVC-35, “Emergency Boration,” after the candidate locates the desired procedure.

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2 Performance step: OPEN CVC-440/MV-32127, Emergency Boration to Charging Pumps

Standard: Candidate POSITIONS CVC-440 Control switch to OPEN.

Comment: CVC-440 does NOT open. (CVC-440 green light ON, red light OFF.)

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NOTE: START ALTERNATE PATH HERE

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3 Performance step: DIRECTS NAO to OPEN CVC-440/MV-32127 Emergency Boration from BA Tanks MV locally

Standard: Calls simulator booth and DIRECTS NAO to OPEN CVC-440/MV-32127 Emergency Boration from BA Tanks MV locally.

Comment: **BOOTH CUE: Local Operator reports that CVC-440 WILL NOT open locally. CUE: If candidate informs SRO that CVC-440 will not open and requests guidance, ask the candidate, What do you recommend?”**

---

4\* Performance step: Candidate continues with 4.0 SUBSEQUENT ACTION section for Emergency boration flow NOT established.

Standard: Positions CVC-403/CV-31902, Boric Acid to Blender control switch to OPEN and spring return to AUTO.

Comment: VERIFIES Red light ON, green light OFF.

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## PERFORMANCE INFORMATION

(Denote critical steps with a "\*\*")

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5\* Performance step: Performs Step 4.1.1.b

Standard: Positions CVC-408/CV-31903, Boric Acid Blender to Charging pumps control switch to OPEN.

Comment: VERIFIES Red light ON, green light OFF.

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6\* Performance step: Performs Step 4.1.1.d to start both BATPs in fast speed.

Standard: POSITIONS BA Transfer Pump A and B speed selector switch to FAST speed.  
POSITIONS BA Transfer Pump A and B control switches to START

Comment: VERIFIES fast speed red light ON, green light OFF for both BATPs  
(Starting the BATP is a critical step but speed selection is not a critical item.)

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7\* Performance step: ESTABLISH at least 80 gpm charging flow.

Standard: MANUALLY controls charging pump speed to establish  $\geq 80$  gpm as indicated by the sum of charging flow to regen Hx, FI-128 AND #1 seal injection flow meters FI-115 AND FI-116.

Comment:

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8 Performance step: ESTABLISH 80 gpm letdown flow.

Standard: POSITIONS letdown orifice isolation valve control switches as required to establish 80 gpm letdown flow on FI-134, Letdown Hx Outlet Flow.

Comment:

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9 Performance step: VERIFY Emergency boration flow established.

Standard: Boric Acid flow totalizer 44559/YIC-110 indicates flow.

Comment:

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## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

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10 Performance step: Divert letdown flow when VCT >56%.

Standard: When VCT level is >56%, VERIFY letdown flow is diverted to the CVC Holdup Tanks.

Comment: Verifies LD-27 diverts to VCT, amber light ON.

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11\* Performance step: Determines the required amount of emergency boration.

Standard: For loss of IRPI indication following a trip, BA required to Borate the RCS to Hot Shutdown Boron concentration per RD 6.6 and RD 2.2.6:

- a. Per RD 6.6, the candidate must borate from 1100 to 1520 ppm (a **420** ppm increase).
- b. Per RD 2.2.6, this requires FOUR 100 ppm plus ONE 20 ppm BORATE iterations ( $279.3 + 281.5 + 283.7 + 286.0 + 57.5 = \mathbf{1188}$  gallons 8% BA)

Comment: CUE: Core burnup is now **6200 Mwd/MTU** and current boron concentration is **1100 ppm**.

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12 Performance step: Determines that the required amount of BA has been added.

Standard: Determines that **at least 1188 gallons** of 8% boric acid has been added.

Comment: CUE: For Time Compression, inform the candidate that the calculated amount of Boron has been added and continue with the procedure.

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13\* Performance step: Stops the emergency boration.

Standard:

- a. POSITIONS control switches for both BA Transfer Pumps to OFF/AUTO.
- b. POSITIONS CVC-408/CV-31093 control switch to CLOSE or AUTO.

Comment:

- a. VERIFIES Green light ON, red light OFF for both BATPs.
- b. VERIFIES Green light ON, red light OFF.

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Terminating cue: **This JPM is completed.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.b    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

Every JPM should:

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  - c.  references and tools, including associated procedures
  - d.  validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
  - e.  specific performance criteria that include:
    - (1)  expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
    - (2)  system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
    - (3)  statements describing important observations that should be made by the examinee
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    - (6)  restrictions on the sequence of steps

## **FOR SIMULATOR USE ONLY**

### Setup:

Reactor shutdown with core burnup about MOL.

Insert override 46230 CLOSE to fail CVC-440 closed.

Place a hold card on CVC301/MV-32056 CLOSED to prevent the charging pumps from taking a suction on the RWST.

Place A charging pump in manual and increase to maximum charging until pressurizer level is ~23%, then return charging flow to pre-trip value.

VERIFY pressurizer level is >20% and letdown is in service.

If chemistry sample results board is displayed, indicate that today's RCS boron concentration is 1100 ppm.

Facility: KewauneeTask No: E-1Task Title: Secure ICS PumpsJob Performance Measure No: B.1.gK/A References: 026.A4.01 (4.5/4.3)

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_

## READ TO THE EXAMINEE

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

Initial Conditions:

- A LOCA has occurred.
- A plant trip and Safety Injection, Containment Isolation and Containment Spray actuated 50 minutes ago.
- Containment radiation is currently 1500 mR/hr.
- The crew has completed procedure E-1, "Loss of Reactor or Secondary Coolant" through step 12.

Task Standards: E-1, "Loss of Reactor or Secondary Coolant".Required Materials: E-1, "Loss of Reactor or Secondary Coolant".General References: E-1, "Loss of Reactor or Secondary Coolant".Initiating Cue: **The CRS directs you to perform step 13 of E-1, "Loss of Reactor or Secondary Coolant".**Time Critical Task: **NO**Validation Time: 10 minutes

Facility: Kewaunee

Job Performance Measure No: B.1.g

Initial Conditions:

- A LOCA has occurred.
- A plant trip and Safety Injection, Containment Isolation and Containment Spray actuated 50 minutes ago.
- Containment radiation is currently 1500 mR/hr.
- The crew has completed procedure E-1, "Loss of Reactor or Secondary Coolant" through step 12.

Initiating Cue: **The CRS directs you to perform step 13 of E-1, "Loss of Reactor or Secondary Coolant".**

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*\*”)

Starting Time: \_\_\_\_\_

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1 Performance step: Refer to procedure E-1, “Loss of Reactor or Secondary Coolant”.

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13

Comment: Provide working copy of E-1, “Loss of Reactor or Secondary Coolant”.

---

2 Performance step: CHECK if Containment Spray should be stopped:

- ICS Pumps - ANY RUNNING

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.a.

Comment: ICS Pumps are running - Candidate should PROCEED to step 13.b.

---

3 Performance step: CHECK if Containment Spray should be stopped:

- ICS Pumps run time - Greater than 55 minutes

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.b.

Comment: ICS Pumps run time is LESS than 55 minutes - Candidate should PROCEED to step 13.b. CONTINGENCY ACTIONS.

---

4\* Performance step: IF Containment radiation is > 2 R/hr, THEN

- Continue with step 14 and do 13.c through 13.h when ICS Pumps run time is greater than 55 minutes.

IF NOT, THEN continue with step 13.c.

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.b. CONTINGENCY ACTIONS.

Comment: The IF applies to the Containment radiation criterion, therefore the IF NOT applies to Containment radiation as well. **It is expected that the candidate continue with step 13.c without waiting for > 55 minutes to elapse.**

**IF the candidate chooses to wait: CUE: “5 minutes have now elapsed”.**

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5 Performance step: CHECK if Containment Spray should be stopped:

- Containment pressure - LESS than 4 psig.

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.c.

Comment: Containment pressure is less than 4 psig - PROCEED to step 13.d.

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## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

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- 6\* Performance step: CHECK if Containment Spray should be stopped:
- RESET Containment Spray signal.

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.d.

Comment:

- 
- 7\* Performance step: CHECK if Containment Spray should be stopped:
- STOP ICS Pumps AND PLACE in “**AUTO**”.

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.e.

Comment:

- 
- 8\* Performance step: CHECK if Containment Spray should be stopped:
- CLOSE the following “ICS Pump Discharge Isolation” valves:
    - ICS-5A AND B
    - ICS-6A AND B

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.f.

Comment:

- 
- 9\* Performance step: CHECK if Containment Spray should be stopped:
- CLOSE CI-1001A AND B, “Caustic Additive to CNTMT Spray”

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.g.

Comment:

- 
- 10 Performance step: CHECK if Containment Spray should be stopped:
- IF RHR Pumps supplying CNTMT Sump Recirc. flow...

Standard: E-1, “Loss of Reactor or Secondary Coolant”, step 13.h.

Comment: CNTMT Sump Recirc. has not been established, so no action is required. The candidate should inform the CRS that the task is complete.

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Terminating cue: **This JPM is completed.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.g    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

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## **FOR SIMULATOR USE ONLY**

### Setup:

1. INITIALIZE to IC-12, 100%, MOL
2. INSERT Malf RC04A at 10% severity.
3. UNFREEZE
4. PULLOUT TD AFW pump and BOTH RXCPs
5. RESET SI and ICS.
6. CLOSE LD-4A, B and C and RESET Containment Isolation
7. ALIGN Charging per E-1, step 11.
8. Ensure RWST level > 40% and Containment pressure is less than 4 psig.
9. ALIGN plant per E-1, steps 1 - 12
10. FREEZE, if desired take snapshot.

Facility: KewauneeTask No: A-MI-87Task Title: Excure NIS OOSJob Performance Measure No: B.1.aK/A References: 015.A4.03(3.8/3.9)

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

-

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_**READ TO THE EXAMINEE**

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

Initial Conditions:

- The plant is at 48% power.
- Power Range Instrument Channel N-41 has failed.
- The Control Bank Selector switch is in MANUAL.
- A-NI-48, "Abnormal Nuclear Instrumentation", has been reviewed.
- SP-47-316A, "Channel I (Red) Instrument Channel Test", is complete.
- You are the Operator at the controls

Task Standards: A-MI-87, "Bistable Tripping for Failed RPS or Safeguards Inst." .Required Materials: A-MI-87, "Bistable Tripping for Failed RPS or Safeguards Inst."General References: A-MI-87, "Bistable Tripping for Failed RPS or Safeguards Inst."Initiating Cue: **The Shift Manager directs you to remove failed instrument channel N-41 from service by performing steps 1 and 2 of A-MI-87, Attachment 2.**Time Critical Task: **NO**Validation Time: 8 minutes

Facility: Kewaunee

Job Performance Measure No: B.1.a

Initial Conditions:

- The plant is at 48% power.
- Power Range Instrument Channel N-41 has failed.
- The Control Bank Selector switch is in MANUAL.
- A-NI-48, "Abnormal Nuclear Instrumentation", has been reviewed.
- SP-47-316A, "Channel I (Red) Instrument Channel Test", is complete.
- You are the Operator at the controls

Initiating Cue:     **The Shift Manager directs you to remove failed instrument channel N-41 from service by performing steps 1 and 2 of A-MI-87, Attachment 1.**

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

Starting Time: \_\_\_\_\_

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1 Performance step: Refer to procedure A-MI-87, “Bistable Tripping for Failed RPS or Safeguards Inst.”.

Standard: Procedure A-MI-87, “Bistable Tripping for Failed RPS or Safeguards Inst.”, 4.0 SUBSEQUENT ACTIONS and Attachment I (pages 18 - 20) are referred to.

Comment: Provide working copies of A-MI-87, Attachment I (pages 18 - 20) after the candidate locates the desired procedure.

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2\* Performance step: Position Upper Section switch on Detector Current Comparator to

“**PR N41**”.

Standard: A-MI-87, Att. 1, step 1.1 - The candidate performs the action.

Comment: The “**Channel Defeat**” light will illuminate above the control switch.

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3\* Performance step: Position Lower Section switch on Detector Current Comparator to “**PR N41**”.

Standard: A-MI-87, Att. 1, step 1.2 - The candidate performs the action.

Comment: The “**Channel Defeat**” light will illuminate above the control switch.

---

4\* Performance step: Position Rod Stop Bypass switch on Miscellaneous Control and Indication Panel to “**BYPASS PR N41**”.

Standard: A-MI-87, Att. 1, step 1.3 - The candidate performs the action.

Comment: The “**N41 Rod Stop Bypassed**” status light will illuminate on panel 44906-0501.

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## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

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5\* Performance step: Position Power Mismatch Bypass switch on Miscellaneous Control and Indication Panel to “**BYPASS PR N41**”.

Standard: A-MI-87, Att. 1, step 1.4 - The candidate performs the action.

Comment:

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6\* Performance step: Position Comparator Channel Defeat switch on Comparator and Rate Drawer to “**N41**”

Standard: A-MI-87, Att. 1, step 1.5 - The candidate performs the action.

Comment: Annunciator 47033-K “**Power Range Channel Deviation**” will CLEAR.

---

7 Performance step: Review CAUTION regarding P-10 bistable.

Standard: The CAUTION is not a concern at current conditions. It would only be a concern IF power was reduced to less than 10% power AND another NI is greater than 10% power.

Comment: CUE- **Supervision is aware of the situation and the other NIs will be closely monitored if a power reduction is required.**

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8\* Performance step: Position N41A drawer Control Power breaker to OFF.

Standard: A-MI-87, Att. 1, step 2.1 - The candidate performs the action.

Comment: After the breaker is OFF - CUE - **I&C will perform the bistable tripping.**

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Terminating cue: **This JPM is completed.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.a    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

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  - d.  validated time limits (average time allowed for completion) and specific designation of those JPMs that are deemed to be time-critical by the facility operations department
  - e.  specific performance criteria that include:
    - (1)  expected actions with exact control and indication nomenclature and criteria (switch position, meter reading), even if these criteria are not specified in the procedural step
    - (2)  system response and other cues that are complete and correct so that the examiner can properly cue the examinee, if asked
    - (3)  statements describing important observations that should be made by the examinee
    - (4)  criteria for successful completion of the task
    - (5)  identification of those steps that are considered critical
    - (6)  restrictions on the sequence of steps

**FOR SIMULATOR USE ONLY**

Simulator Setup:

Reset simulator to **IC-19** - 50% power, BOL

Place simulator in **RUN** and ensure simulator is stable.

Reduce turbine load by 3% to make reactor power about 48%.

Adjust RCS boron concentration as necessary to maintain Tavg.

Insert Malfunction (**NI05A, 1%**) to fail NI-41 to 0 **AND FREEZE** the simulator immediately to prevent rod motion and to have alarms.

Place the Control Bank Selector switch to the "**MANUAL**" position.

Acknowledge annunciators.

Snap a temporary IC if desired.

Facility: KewauneeTask No: SP-36-018Task Title: Loss of Secondary Heat SinkJob Performance Measure No: B.1.eK/A References: 010.A4.03

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

-

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_**READ TO THE EXAMINEE**

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

Initial Conditions:

- The reactor tripped on a loss of feedwater ATWS.
- The AFW pumps tripped.
- 1FRS.1 and 1E-0 have been performed and a transition to 1ES-0.1 "Reactor Trip Recovery" was just made.
- The crew identified a red path on heat sink.
- Outplant operators are attempting to establish AFW flow.

Task Standards: Feed and Bleed established to the RCS.Required Materials: None.General References: FR-H.1

Initiating Cue: You have been directed by the CRS to respond to the heat sink red path per FR-H.1 "Loss of Secondary Heat Sink", step 1.

Time Critical Task: **NO**Validation Time: 15 minutes

Facility: Kewaunee

Job Performance Measure No: B.1.e

Initial Conditions:

- The reactor tripped on a loss of feedwater ATWS.
- The AFW pumps tripped.
- 1FRS.1 and 1E-0 have been performed and a transition to 1ES-0.1 “Reactor Trip Recovery” was just made.
- The crew identified a red path on heat sink.
- Outplant operators are attempting to establish AFW flow.

Initiating Cue: You have been directed by the SS to respond to the heat sink red path per FR-H.1 “Loss of Secondary Heat Sink”, step 11.

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*\*”)

Starting Time: \_\_\_\_\_

---

1 Performance step: REFER to FR-H.1, Response to Loss of Secondary Heat Sink, Step 11

Standard: REFER to FR-H.1, Step 11

Comment:

---

2\* Performance step: Depress both SI Manual Initiation Pushbuttons.

Standard: DEPRESS Safety Injection Train A & B Initiation Pushbuttons. (Critical Step)  
VERIFY status light (44905-1201) SI Signal Actuated is OFF  
VERIFY annunciators 47021-A and 47021-B, SI Train A/B Actuated OFF

Comment:

---

3 Performance step: CHECK SI pumps - at least one running.

Standard: VERIFY Safety Injection Pump A and B indicating lights - green light ON, red light OFF  
VERIFY Safety Injection Pump A and B motor current 4131303 and 4131403 at 0 amps.  
OR  
VERIFY Safety Injection Pump A and B discharge pressure PI-922 and PI-923 at 0 psig.

Comment:

---

4 Performance step: CHECK SI valve alignment for operating pumps - proper emergency alignment.

Standard: VERIFY the following:

SI-4A/MV-32109 or SI-4B/MV-32110, RWST Supply to SI Pumps, OPEN - red light ON, green light OFF.

SI-5A/MV-32107 and SI-5B/MV-32108, SI Pump A/B Suction Isolation, OPEN - red light ON, green light OFF.

SI-9A/MV-32094, Safety Injection To RCS Cold Legs, OPEN - red light ON, green light OFF.

SI-11A/MV-32092 and SI-11B/MV-32097, Safety Injection To Loop A/B Cold Leg, OPEN-red light ON, green light OFF.

Comment:

---

PERFORMANCE INFORMATION

(Denote critical steps with a “\*\*”)

---

5\* Performance step: START 1A **OR** 1B Safety Injection Pump

Standard: POSITION Safety Injection Pump A or B control switch to START (Critical Step)

VERIFY Safety Injection Pump A or B control switch to START

VERIFY Safety Injection Pump A or B motor current 4131303 or 4131403 indicates running current.

OR

VERIFY Safety Injection Pump A or B discharge pressure PI-922 or PI-923 indicates >200 psig.

Comment:

---

6 Performance step: VERIFY power to PR-1A and B, Pressurizer PORV Block Valves - available.

Standard: VERIFY PR-1A/MV-32089 and PR-1B/MV-32090 - red or green light ON.

Comment:

---

7 Performance step: VERIFY both PR-1A and B, both OPEN.

Standard: VERIFY PR-1A/MV-32089 and PR-1B/MV-32090 OPEN - red light ON, green light OFF.

Comment:

---

8\* Performance step: OPEN both PR-2A and B, PRZR PORVs.

Standard: POSITION PR-2A/CV-31110 (Critical Step)

AND

PR-2B/CV-31109 PRZR PORV to OPEN (Critical Step)

VERIFY red light ON, Green light OFF

Comment:

NOTE: PR-2A will **NOT** open.

---

PERFORMANCE INFORMATION

(Denote critical steps with a "\*\*")

---

9\* Performance step: Isolate Letdown

Standard: POSITION control switch for LD-4A to CLOSE (Critical Step)

VERIFY that control switches for LD-4B and LD-4C are in CLOSE position

VERIFY LD-4A,B,C green lights ON, red lights OFF

Comment:

---

10\* Performance step: RESET SI

Standard: DEPRESS Safety Injection Train A and B reset pushbuttons (Critical Step)

VERIFY status light (44905-1202) Automatic SI disabled is BRIGHT

VERIFY status light (44905-1201) SI signal actuated is DIM

VERIFY annunciators 47021-A and 47021-B SI Train A/B Actuated, clear

Comment: CUE:

---

11 Performance step: Reset Containment Isolation

Standard: DEPRESS Containment Isolation Train A and B RESET push buttons. (Critical Step)

VERIFY annunciators 47021-C and 47021-D, CI Train A and B Actuated CLEAR.

Comment:

---

12 Performance step: Verify Instrument Air to Containment - ESTABLISHED

Standard: VERIFY IA-101/CV-31309 Instrument Air to Containment Isolation OPEN - red light ON, green light OFF.

VERIFY Reactor Bldg Air Pressure meter reads >60 psig

Comment:

---

---

PERFORMANCE INFORMATION

---

(Denote critical steps with a "\*\*")

---

13 Performance step: VERIFY MCC-5262 - ENERGIZED

Standard: VERIFY **ONE** of the following:

C-13 light lit

Air Compressor A light lit OR

Annunciator 47055-U lit

Comment:

---

14 Performance step: VERIFY adequate RCS bleed path:

Standard: PR-2A will **NOT** be open.

Comment:

---

15\* Performance step: OPEN all RCS high point vents

Standard: OPEN the following

PR-33A, PRZR Head Vent Train A

PR-45A, Reactor Head Vent Train A

RC-46, RX/PRZR Head Vent to PRZR Relief Tank

PR-33B, PRZR Head Vent Train B

PR-45B, Reactor Head Vent Train B

RC-49, RX/PRZR Head Vent to Containment.

Comment:

---

Terminating cue: **SI Pumps running, one PRZR PORV open, RCS vents open.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.e    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

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  - b.  initiating cues
  - c.  references and tools, including associated procedures
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  - e.  specific performance criteria that include:
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## **FOR SIMULATOR USE ONLY**

### Setup:

23. INITIALIZE to **IC5**, HSD BOC.
24. TRIP the Reactor.
25. PERFORM a 25° cooldown using the S/G PORVs.
26. REDUCE primary system pressure to 2000 psig.
27. PLACE the master controller in MANUAL.
28. ALLOW the Simulator to stabilize at 2000 psig.
29. FREEZE the Simulator.
30. SNAP a temporary IC if desired.

Facility: KewauneeTask No: N-EHV-39Task Title: Shift Bus 5 From TAT to RATJob Performance Measure No: B.1.cK/A References: 062.K1.04 (3.7/4.2)

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:

Simulated Performance \_\_\_\_\_ Actual Performance XClassroom \_\_\_\_\_ Simulator X Plant \_\_\_\_\_

READ TO THE EXAMINEE

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

Initial Conditions: Breaker Maintenance is required on Breaker 1-501, TAT to Bus 5.

Task Standards: N-EHV-39, "4160V AC Supply and Distribution System", step 4.2.1

Required Materials: Procedure N-EHV-39, "4160V AC Supply and Distribution System"

General References: Procedure N-EHV-39, "4160V AC Supply and Distribution System"

Initiating Cue: **The CRS directs you to Shift Bus 5 From the TAT to the RAT per N-EHV-39, "4160V AC Supply and Distribution System", step 4.2.1.**

Time Critical Task: **No**

Validation Time: 10 minutes

**INITIAL CONDITIONS**

Facility: Kewaunee

Job Performance Measure No: B.1.c

Initial Conditions: Breaker Maintenance is required on Breaker 1-501, TAT to Bus 5.

Initiating Cue: **The CRS directs you to Shift Bus 5 From the TAT to the RAT per N-EHV-39, “4160V AC Supply and Distribution System”, step 4.2.1.**

## PERFORMANCE INFORMATION

(Denote critical steps with a "\*\*")

Starting Time: \_\_\_\_\_

---

1 Performance step: Refer to procedure N-EHV-39, "4160V AC Supply and Distribution System".

Standard: Procedure N-EHV-39, "4160V AC Supply and Distribution System", step 4.2.1 is referred to.

Comment: Provide a working copy of N-EHV-39 after the candidate locates the procedure.

---

Performance step: VERIFY power is available for incoming source. 2

Standard: N-EHV-39, step 4.2.1.a - The candidate performs the action.

Comment: Incoming power is verified using the Power Meter for RAT Winding A.

---

3 Performance step: ANNOUNCE evolution via Gaitronics

Standard: N-EHV-39, step 4.2.1.b - The candidate performs the action.

Comment: Per procedure, "**Attention all personnel, shifting 4160 Volt power supplies. Stand clear of electrical bus work.**" is announced.

---

4\* Performance step: **For Bus 5, Breaker 1-503:**  
 31. POSITION 43 switch to "**MAN**". (Critical Step)  
 32. VERIFY Annunciator "Bus 5 SOURCE BKR 43 SW IN MAN" is in alarm (47093-H).

Standard: N-EHV-39, step 4.2.1.c - The candidate performs the actions.

Comment:

---

5\* Performance step: Review precautions, and  
 POSITION synchronizing switch to  
 "**ON**" for incoming source breaker. (Critical Step)

Standard: N-EHV-39, step 4.2.1.d - The candidate performs the actions.

Comment: Reviewing precautions is NOT considered to be critical but is expected.

---

## PERFORMANCE INFORMATION

(Denote critical steps with a "\*\*")

---

6 Performance step: VERIFY incoming and running voltmeter indications within 6 volts.

Standard: N-EHV-39, step 4.2.1.e - The candidate performs the action.

Comment: **Incoming AC Volts** and **Running AC Volts** are located below synchroscope.

---

7\* Performance step: VERIFY synchroscope indicator within 3.33 minutes (20°) of 12:00 and **CLOSE** breaker 1-503.

Standard: N-EHV-39, step 4.2.1.f & g - The candidate performs the actions.

Comment:

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

---

8 Performance step: VERIFY the following indications for breaker 1-503:

- Incoming breaker red light **ON**.
- Megawatt and kiloamp indicators **INCREASE**.

Standard: N-EHV-39, step 4.2.1.h - The candidate performs the action.

Comment:

---

9\* Performance step: POSITION breaker 1-501 to "**TRIP**" and VERIFY the following:

- Green light **ON**.
- Megawatt and kiloamp indicators **DECREASE**.

Standard: N-EHV-39, step 4.2.1.i.1 - The candidate performs the actions.

Comment:

---

10 Performance step: POSITION synchronizing switch to "**OFF**".

Standard: N-EHV-39, step 4.2.1.j - The candidate performs the action.

Comment:

---

11\* Performance step: **For Bus 5, Breaker 1-503:**

1. POSITION 43 switch to "**AUTO**". (Critical Step)
  2. VERIFY Annunciator "Bus 5 SOURCE BKR 43 SW IN MAN" is **CLEAR** (47093-H).
- 

Standard: N-EHV-39, step 4.2.1.k - The candidate performs the actions.

Comment:

---

12 Performance step: PERFORM an Independent Verification per NAD 3.9 on:

- 43 Switch
- Sync Switch
- Breaker Position

Standard: N-EHV-39, step 4.2.1.l - The candidate performs the actions.

Comment: CUE: **An Independent Verification per NAD 3.9 is complete.**

---

13 Performance step: INFORM CRS that Bus 5 has been shifted from the TAT to the RAT.

Standard: The candidate performs the action.

Comment: CUE: **The CRS acknowledges your report.**

---

Terminating cue: **This JPM is completed.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.c    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

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**FOR SIMULATOR USE ONLY**

Simulator Setup:

Initialize to JPM-specific IC.

Facility: KewauneeTask No: ES-1.3Task Title: Transfer to Recirc ModeJob Performance Measure No: B.1.fK/A References: 006.A4.05 (3.9/3.8)

Examinee: \_\_\_\_\_

NRC Examiner: \_\_\_\_\_

Facility Evaluator: \_\_\_\_\_

Date: \_\_\_\_\_

Method of testing:Simulated Performance \_\_\_\_\_ Actual Performance X \_\_\_\_\_Classroom \_\_\_\_\_ Simulator X \_\_\_\_\_ Plant \_\_\_\_\_

READ TO THE EXAMINEE

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

Initial Conditions:

- A large break LOCA has occurred.
- All safeguards equipment is operable.
- RCS pressure is at containment pressure.
- RWST level is approximately 36%.
- You are the Nuclear Control Operator.

Task Standards: ES-1.3, "Transfer to Containment Sump Recirculation".Required Materials: ES-1.3, "Transfer to Containment Sump Recirculation".General References: ES-1.3, "Transfer to Containment Sump Recirculation".Initiating Cue: **The CRS directs you to perform ES-1.3, "Transfer to Containment Sump Recirculation", steps 8 to 18.**Time Critical Task: **NO**Validation Time: 10 minutes

**INITIAL CONDITIONS**

---

Facility: Kewaunee

Job Performance Measure No: B.1.f

Initial Conditions:

- A large break LOCA has occurred.
- All safeguards equipment is operable.
- RCS pressure is at containment pressure.
- RWST level is approximately 36%.
- You are the Nuclear Control Operator.

Initiating Cue: **The CRS directs you to perform ES-1.3, “Transfer to Containment Sump Recirculation”, steps 8 to 18.**

## PERFORMANCE INFORMATION

(Denote critical steps with a "\*\*")

Starting Time: \_\_\_\_\_

---

1 Performance step: Refer to procedure ES-1.3, "Transfer to Containment Sump Recirculation", **and** VERIFY RCS Pressure < 2100 PSIG (CAS).

Standard: ES-1.3, "Transfer to Containment Sump Recirculation", step 8

Comment: Provide working copy of ES-1.3, "Transfer to Containment Sump Recirculation".

2\*

---

Performance step: Close both SI Recirculation to RWST Valves:

- SI-208
- SI-209

Standard: ES-1.3, "Transfer to Containment Sump Recirculation", step 9.

Comment:

---

3 Performance step: VERIFY Train A Injection Flow:

- a. SI Pump A - Running **AND** Pump amps indicate flow.
- OR**
- b. RHR Pump A - Running **AND** F626 indicates flow.

Standard: ES-1.3, "Transfer to Containment Sump Recirculation", step 10.

Comment:

---

4\* Performance step: ALIGN RHR Train B for Recirculation:

- OPEN SI-350B, CNTMT Sump B Supply to RHR Pump B.

Standard: ES-1.3, "Transfer to Containment Sump Recirculation", step 11.a.

Comment:

---

5\* Performance step: ALIGN RHR Train B for Recirculation:

- CLOSE SI-300B, RWST Supply to RHR Pump B.

Standard: ES-1.3, "Transfer to Containment Sump Recirculation", step 11.b.

Comment:

---

## PERFORMANCE INFORMATION

(Denote critical steps with a “\*”)

---

6 Performance step: ALIGN RHR Train B for Recirculation:  
 ● Do **NOT** continue until SI-300B is **CLOSED**.

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 11.c.

Comment: Candidate must take no further action until SI-300B indicates **CLOSED**.

---

7\* Performance step: ALIGN RHR Train B for Recirculation:  
 ● OPEN SI-351B, CNTMT Sump B Supply to RHR Pump B.

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 11.d.

Comment: Candidate must **NOT** take this action until SI-300B indicates **CLOSED**.

---

8\* Performance step: ALIGN RHR Train B for Recirculation:  
 ● CLOSE RHR-8B, RHR Heat Exchanger B Flow CV.

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 11.e.

Comment: Candidate must **NOT** take this action until SI-300B indicates **CLOSED**.

---

9\* Performance step: ALIGN RHR Train B for Recirculation:  
 ● START RHR Pump B.

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 11.f.

Comment: Candidate must **NOT** take this action until SI-300B indicates **CLOSED**.

---

10\* Performance step: VERIFY Train B RHR Recirculation Flow:  
 a. CHECK RCS pressure - **<150 psig**  
 b. THROTTLE RHR-8B, RHR Heat Exchanger B Flow CV as necessary to maintain RHR Recirc. Flow at **1500 gpm**  
 c. **GO TO STEP 18**

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 12.

Comment: Establishing RHR Recirc. Flow at 1500 gpm is the objective of this step.

---

11 Performance step: CHECK RWST Level - LESS than or EQUAL to **4%**.

Standard: ES-1.3, “Transfer to Containment Sump Recirculation”, step 18.

Comment: IF RWST level is approximately 4%, the step may be performed. Otherwise, the JPM may be considered completed without completing this step.

---

Terminating cue: **This JPM is completed.**

Completion Time: \_\_\_\_\_

VERIFICATION OF COMPLETION

Job Performance Measure No.     B.1.f    

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Response: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Result: SAT or UNSAT

Examiner's signature and date: \_\_\_\_\_

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## **FOR SIMULATOR USE ONLY**

Setup: (REF: O-LRQ-JPM115A)

1. INITIALIZE to IC-12, 100%, MOL
2. INSERT Malf RC04A at 10% severity.
3. UNFREEZE
4. PULLOUT TD AFW pump and BOTH RXCPs
5. RESET SI and ICS.
6. CLOSE LD-4A, B and C and RESET Containment Isolation
7. ALIGN Charging Pump suction to VCT, THEN START A and B Charging pumps and INCREASE to MAXIMUM speed.
8. ADJUST CVC-7 as necessary
9. STOP BOTH Diesel Generators
10. TURN ON power (SI2, line 9) and CLOSE SI-20A and SI-20B
11. OPEN CC-400A and CC-400B.
12. WHEN problem time is 15 minutes, DECREASE RWST level to 36% (SI2, line 1)
13. ALIGN ECCS per ES-1.3, steps 1 - 7 (Leave TRAIN A running/Stop TRAIN B)
14. FREEZE, if desired take snapshot.