

Facility: Indian Point 2 Task No: \_\_\_\_\_Task Title: 2-ES-0.1 actions (alternate paths)K/A Reference: 004A2.14 (3.8/3.9)Job Performance Measure No: 2007-  
NRC-  
S-1

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: Five minutes ago, the reactor was manually tripped from 250 MWe per POP-3.1. Required actions of E-0 steps 1-4 are complete with a transition to ES-0.1 Reactor Trip Response. The CRS has directed you to perform ES-0.1 Starting at step 1 through step 7 (i.e. including step 7)

Task Standard: Required actions of ES-0.1 step 1 and 7 complete.

**Required Materials:**

ES-0.1 with attachments

2-SOP-3.2 (may be request by candidate but is not required for performance)

General References: Reactivity summary sheet for IC

Initiating Cue: Perform ES-0.1 Steps 1 through step 7 (inclusive)

Time Critical Task: No

Validation Time:

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Performance Information

(Denote critical steps with a check mark)

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**√1. Performance Step: Check RCS temperature and close 21 ADV.**

**Standard:** Observes RCS temperature indication and observes that Tave is <547°F and decreasing, transitions to RNO column of Step 1 and shuts the 21 Atmospheric Dump valve.

**Note:** First action for step 1 RNO is to “stop dumping steam” at which point the student should take action to shut the 21 Atmospheric Dump. This may be accomplished by either adjusting the set point up or placing the controller in manual and shutting it. Either of these actions will close the malfunctioning valve. Additional steps in RNO column are to verify SG blowdown isolation and if necessary adjusting feed flow for which no action should be necessary.

**Comments:**

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**2. Performance Step: Check 345 KV MO Disc Switch F7-9 open**

**Standard:** Candidate verifies 345 KV MO Disc Switch F7-9 open.

**Note:** No manipulation required.

**Comments:**

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Performance Information

(Denote critical steps with a check mark)

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**3. Performance Step: Verify the all 480V buses are energized from off-site**

Standard: Candidate verifies the all 480V buses are energized from off-site.

Note: No manipulation required.

Comments:

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**4. Performance Step: Check PRZR Level Control**

Standard: Candidate verifies:

- PRZR level is > 18% and trending toward 37%
- Charging and letdown are inservice.
- Any CCW pump is running.

Note: No manipulation required.

Comments:

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**5. Performance Step: Check PRZR Pressure Control**

Standard: Candidate verifies:

- PRZR Pressure stable at or trending to 2235psig (and > 1840 psig)

Note: No manipulation required.

Comment:

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## Performance Information

(Denote critical steps with a check mark)

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**6.a & b Performance Step: Check all control rods Fully Inserted.**

Standard: Observes IRPI indications for all control rods and notes that three control rod IRPI's (N-11, C-5, P-6) indicate greater than 7.5 steps and transitions to RNO column of step 6.b.

Note: No manipulation required.

Comments:

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**√ 6.b. RNO Performance Step: Check all control rods <12 steps and determine required boration.**

Standard: Observes PICS indications for all control rods and notes that three control rod IRPI's (N-11, C-5, P-6) indicate greater than 12 steps and continues on to next step. Candidate may require reference to 2-ES-0.1 attachment 2, for getting the data from PICS. Once this is determined the student will continue on to start an emergency boration.

Note: The candidate should determine with 3 rods are > 12 steps and that boration of  $230\text{ppm/rod} \times 3\text{rods} = 690\text{ ppm}$  is required. Student may not verbalize the PPM change required. If so, follow up question will need to be asked.

Comments:

## Performance Information

(Denote critical steps with a check mark)

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**√6.b.1)a). Performance Step: Open emergency boration valve MOV-333**

Standard: Places control switch on panel SFF to open. Observes that valve does open.

Comments:

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**√6.b.1) b). Performance Step: Place both Boric Acid pumps is high speed mode.**

Standard: Boric Acid Trans Pump No. 21 Speed in FAST on panel FCF  
Boric Acid Trans Pump No. 22 Speed in FAST on panel FCF

Comments:

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**√6.b.1)c) Performance Step: Place charging pump control in MAN.**

Standard: On panel FBF places AUTO-BAL-MAN switch to MAN.

Comments:

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Performance Information

(Denote critical steps with a check mark)

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√ 6.b.1)d) **Performance Step: Establish a minimum charging flow of 75 GPM.**

Standard: On panel FBF adjusts charging flow to ensure flow rate of > 75gpm.

Comments:

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**6.b.1)e) Performance Step: When boration is complete, Then secure the boration per 2-SOP-3.2....**

Cue: The CRS requests how many PPM change is required if not previously verbalized and prompt the candidate to continue with the EOP while boration continues

Standard: Candidate should report 690 ppm additional.

Note: No manipulation required.

Comments:

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**7.a. Performance Step: Check RCS temperature <554 degrees**

Standard: Verifies temperature < 554 using various board indications.

Note: No manipulation required. Temperature should be at or trending to ~547

Comments:

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## Performance Information

(Denote critical steps with a check mark)

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**7.b & c. Performance Step: Verify main and bypass FW reg. valves are closed**

Standard: Verifies main and bypass FW reg. valves are closed on panel FBF.

Note: No manipulation required.

Comments:

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**7.d. Performance Step: Verify total feed flow > 400gpm**

Standard: Verifies total Aux Feedwater Flow > 400gpm to SG's on panel SCF.

**Terminating Cue: Once the candidate has verified feed flow the JPM is complete.**

Comments:

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## VERIFICATION OF COMPLETION

Job Performance Measure No. 2007-NRC-S-1, Perform actions of 2-ES-0.1 steps 1-7

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

Reset simulator to IC-??

IC will contain MAL-CRF001AE, MAL-CRF002AC, MAL-CRF001AV and XMT-SGN037A  
(1050psig)

**Initial Conditions:**

- Five minutes ago, the reactor was manually tripped from 250 MWe per POP-3.1.
- Required actions of E-0 steps 1-4 are complete with a transition to ES-0.1 Reactor Trip Response.
- The CRS has directed you to perform ES-0.1 steps 1-7.

**Initiating Cue:**

- Perform 2-ES-0.1 Steps 1-7.

**RETURN THIS TO THE EVALUATOR WHEN THE TASK IS COMPLETE**

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 1 of 8

**2007-NRC-S-2(All)  
JOB PERFORMANCE MEASURE**

**Operator Name:** \_\_\_\_\_

**Employee ID #:** \_\_\_\_\_

**Evaluator:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **SAT** **UNSAT**

This JPM was administered for qualification? **YES** **NO**

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 2 of 8

**DIRECTIONS TO OPERATOR:**

When I tell you to begin, you are to perform E-0, Reactor Trip or Safety Injection, Attachment 1.

I will describe the general system conditions. Before you start, I will state the Task Standard and Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

**INITIATING CUES:**

1. An event occurred a short time ago that resulted in a Reactor Trip and a Safety Injection.
2. The CRS has directed you to perform E-0, Attachment 1.

**TASK STANDARD:**

E-0, Attachment 1, completed with all required actions performed.

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 3 of 8

● **Denotes Critical Step**

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	Obtain correct procedure	E-0, Attachment 1, Step 1	
1	Review Note prior to step 1 and	Note Reviewed	
1	Evaluate containment conditions a) determine that Adverse Containment Conditions exist.	Determine that Adverse Containment applies and continue in left column.	
●2	<b>Start at least 1 Charging Pump</b>	At least 1 Charging Pump running in Manual at Max Speed	
●3	<b>Align Charging Pump Suction to RWST</b>	LCV-112B Open, LCV-112C Closed MU control switch to Stop	
4	Place RCS makeup control switch to STOP	M/U control switch in STOP	
5	Check 345 KV MO Disc Switch F7-9 position	Verify Disc Switch F7-9 Open	
●6	Check Status of 480V Buses  <b>CUE:</b> Acknowledge NPO dispatched  <b>NOTE: Stopping Pumps is Critical</b>	Verify all 480V buses energized by offsite power  Dispatch NPO to reset All Lighting, MCCs 24A, 27A and 29A  Stop All condensate pumps	

2007-NRC-S-2(All)

Time: 20 minutes

Parent Task # 3000010501

E-0 Attachment 1 REV: 0

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 4 of 8

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
7	Check FW Isolation Status	Verify MBFPs tripped; Discharge vlvs Closed; Reg Vlvs Closed, FW stop vlvs Closed; SG B/D isolation vlvs Closed	
8	Check if Main Steamlines should be Isolated	Verifies VC pressure was >24 psig and MSIVs Closed	
9	Verify Proper Service Water System Operation	Verify 3 Essential Service Water Pumps Running  Verify SW valves from EDGs open	
10	Verify SI System Pumps Running	Verify 3 SI Pumps Running  Verify MOV-851A/B Open  Verify 2 RHR Pumps Running	
11	Verify Proper SI System Valve Alignment	Verify 822A/B Open  Verify 746/747 Open	
12	Verify Containment Fan Coolers in Service	Verify 5 FCUs Running  Verify Norm Out Valves Open	

2007-NRC-S-2(All)

Time: 20 minutes

Parent Task # 3000010501

E-0 Attachment 1 REV: 0

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 5 of 8

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
		Verify TCV-1104/1105 Open	
13	Verify AFW Flow to SGs	Verify AFW Flow to ALL SGs	
14	Verify Containment Ventilation Isolation	Verify FCV-1170s and PCV-1190s Closed	
15	Review Note prior to step 12	Note Reviewed	
●16	Verify Phase A  Note: <b>Manual Actuation of Phase A is critical</b>	Verify Phase A NOT Actuated and initiate Manual Phase A  Verify Phase A Valves Closed  Verify IVSW and WCP Valves Open  Place personnel and equipment hatch solenoid control switches to Incident  Direct NPO to check IVSW tank level >92%, press >57 psig and WCP press >52 psig	
17	Review Note prior to step 13	Note Reviewed	
●18	Check if Containment Spray should be actuated and note that: <b>-21 Spray pump did not start and must be manually started and</b> <b>-22 Spray pump discharge valves are closed and must be opened</b>	Verify: Spray Pumps Running; 21 Spray pump will need to be manually started. <b>This is critical.</b>  Discharge Valves	

2007-NRC-S-2(All)

Time: 20 minutes

Parent Task # 3000010501

E-0 Attachment 1 REV: 0

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 6 of 8

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
		Open, MOV-866C and MOV-866D will need to be opened. <b>This is critical.</b>  Phase B Actuated  RCP secured  IVSW valves Open	
19	Verify CCR Air Conditioner Running	Verify CCR Vent running in Incident Mode 2	
20	Notify CRS that Attachment 1 is Complete  <b>CUE:</b> Acknowledge as CRS	Notify CRS	

**Perform E-0. Attachment 1 with failure of: Phase A to actuate, 22  
Spray pump discharge valves to open and 21 spray pump to  
start.**

Page 7 of 8

Description of problem area:

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Description of reviewed information:

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**INITIATING CUES:**

1. An event occurred a short time ago that resulted in a Reactor Trip and a Safety Injection.
2. The CRS has directed you to perform E-0, Attachment 1.

**TASK STANDARD:**

E-0, Attachment 1, completed with all required actions performed.

**RETURN THIS TO INSTRUCTOR WHEN YOU HAVE COMPLETED**

Facility: Indian Point Unit 2 Task No.: 300 040 05 01

Task Title: Align the SI System Recirculation During Transfer to Cold Leg Recirculation with NO Recirc Pumps Available JPM No.: 2007-NRC-S-3(R,I)

K/A Reference: 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:
1. A large break LOCA has occurred approximately 40 minutes ago.
  2. The RWST level has decreased to 9.24 feet.
  3. Safety Injection is RESET.
  4. Containment Spray is RESET.
  5. Phase A & B are RESET.
  6. Service Water is in three-header operation.

Task Standard: The SI system is aligned for cold leg recirculation.

Required Materials: ES-1.3

General References: ES-1.3

Handouts: NONE

Initiating Cue: SRO has directed you to transfer to cold leg recirculation in accordance with ES-1.3.

Time Critical Task: NO

Validation Time: 30 Minutes

**Simulator Setup**

Reset to IC similar to 30017416.01 IP2 JPM

**Restore IC to SNAP 96 through 100 as follows:**

**on TSM Terminal:**

**if no TSM> prompt, enter "Ctrl A" twice**

**at name, enter "system"**

**at password, enter "ipsystem"**

**at TSM> prompt enter:**

**"DR\_SNAP 3001741601 096"**

**NOTE: 096 may also be entered into 097, 098, 099 or 100 IC slots. Once snap is restored, reset to that IC and run drill as directed.**

**Booth Operator: MOV-882, MCC 26B, will need to be energized during this JPM when requested by operator at step 18**

(Denote Critical Steps with an asterisk)

**Performance Step: 1** Obtain correct procedure.

**Standard:** ES-1.3

**Comment:**

**Performance Step: 2** Reset SI.

**Standard:** Verify SI reset.

**Comment:**

**Performance Step: 3** Establish full SW flow to CCW heat exchangers.

**Standard:** Direct NPO to fully open SWN-35 & SWN-35-1.

**Comment:** **CUE: Acknowledge as NPO.**

**Performance Step: 4** Reduce AC 480V loads.

**Standard:** Charging pump(s) stopped and PRZR heaters to off.

**Comment:**

**Performance Step: 5** Reset Containment Spray.

**Standard:** Containment Spray Reset Pushbuttons Depressed on at a time.

**Comment:**

**CAUTION: IF RWST LEVEL DECREASES TO 3.0 FT., THEN SI PUMPS TAKING SUCTION FROM RWST SHALL BE STOPPED. If RWST DECREASES TO 2.0 FT., THEN SPRAY PUMPS TAKING SUCTION FROM RWST SHALL BE STOPPED.**

**NOTE: WHEN 3.0 FT. is reached in the RWST, then trainee should stop all SIS pumps and RHR pumps.**

**WHEN 2.0 FT. is reached in the RWST, then candidate should stop Spray Pumps**

- \* **Standard:** Observes caution, stops SIS and RHR pumps when 3 ft. is reached. Stops Spray pumps when 2.0 feet is reached
- \* **Performance Step: 6** Perform No. 1 and 3 Recirc Switch Sequence.
- NOTE: Operator should verify all required actions have taken place.**
- Standard:** Recirc SW #1 and #3 turned to on, verifies following stopped:
- 21 SI pump
  - 21 Spray pump
  - 21 and 22 RHR pumps
- Performance Step: 7** Check Service Water System aligned for three header operation.
- Standard:** Request NPO to check SWN-4 & 5 Closed.
- Comment:**
- CUE: NPO reports SWN-4, SWN-5 closed.**
- NOTE: Operator may request status of 3 header valves from RNO – all closed.**
- \* **Performance Step: 8** Perform No. 2 Recirc Switch Sequence.
- Standard:** Recirc SW #2 turned to on.  
Verifies 1 non-ess SW pump running,  
Verifies three CCW pumps running,  
Stops 23 CCW pump,  
Checks function complete light lit.

**Comment:** **NOTE: Operator should verify all required actions have taken place.**

**Performance Step: 9** Check VC Sump Level for Recirc.  
**Standard:** Verify VC Sump Level > 47'10" on LI-939 or 941.

**Comment:**

**Performance Step: 10** Perform No. 4 Recirc Switch Sequence.  
**Standard:** Recirc SW #4 turned to on. Manual start of 21/22 Recirc Pump attempted.

**Comment:** **NOTE: Manual start of 21 and 22 Recirc Pump should be attempted.**

**NOTE: Procedure steps corresponding to JPM Steps 11 through 21 below are performed using attachment 2 of ES-1.3.**

**Performance Step: 11** Dispatch operator to shutdown FSB ventilation.  
**Standard:** Dispatches operator.

**Comment:** **CUE: NPO reports FSB ventilation secured.**

**Performance Step: 12** Check 885A and 885B energized.  
**Standard:** Verify 885A/B energized by light indication.

**Comment:**

**Performance Step: 13** Energize MOV-882.  
**Standard:** Direct NPO to energize 882 on MCC 26B.

**Comment:** **CUE: Acknowledge as NPO.**

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- \* **Performance Step: 14** Ensure Recirc SWs 3, 4 & 5 OFF.  
**Standard:** Place Recirc SWs 3 & 4 to OFF and verify SW 5 in OFF.  
  
**Comment:**
- Performance Step: 15** Ensure both RHR Pumps stopped.  
**Standard:** Verify both RHR Pumps STOPPED.  
  
**Comment:**
- Performance Step: 16** Ensure both Recirc Pumps stopped.  
**Standard:** Verify both Recirc Pumps STOPPED.  
  
**Comment:**
- Performance Step: 17** Close 1802A and 1802B.  
**Standard:** CLOSE both 1802A and 1802B.  
  
**Comment:**
- \* **Performance Step: 18** Close RHR suction valve from RWST.  
**Standard:** CLOSE MOV 882.  
  
**Comment:**
- Performance Step: 19** Check RHR pump discharge valve Open.  
**Standard:** Verify MOV 744 OPEN by Two-is-True.  
  
**Comment:** **NOTE: Operator may request MOV 744 to be energized.**
- \* **Performance Step: 20** Ensure RHR pump suction valves from containment are Open.  
**Standard:** Verify 1805 Open and OPEN MOV-885A/B.

**Comment:**

- \* **Performance Step: 21** Start 22 RHR Pump.  
**Standard:** 22 RHR Pump running by Red light indication.

**Comment:**

**NOTE: Trainee should return to PROCEDURE ES-1.3 STEP 9.a.2) and continue with step 11 of procedure.**

- Performance Step: 22** Verify adequate Low Head Recirculation flow established.  
**Standard:** Lowest flow indicator > 630 gpm or sum of two lowest flow indicators verified to be > 950 gpm.

**Comment:** **NOTE: Determine flow from flow indicators 946A-D – this is for flow in all 4 headers.**

- \* **Performance Step: 23** Perform No. 7 Recirc Switch Sequence.  
**Standard:** Recirc SW #7 turned to on.  
Checks SI pumps all stopped, function complete light lit.

**Comment:** **NOTE: Operator should verify all required actions have taken place.**

- \* **Performance Step: 24** Perform No. 8 Recirc Switch Sequence.  
**Standard:** Recirc Sw #8 turned to on, checks containment spray pump test line valve 1813 closed.

**Comment:** **NOTE: Operator should verify all required actions have taken place.**

- \* **Performance Step: 25** Close SI test Line Valves to RWST.  
**Standard:** Place 842/843 interlock switches to OFF and CLOSE valves.

**Comment:**

**Performance Step: 26** Verify Recirc Pump Status.

**Standard:** Verify NO recirc pump running. Dispatch NPO to energize MOV-1810 on MCC-26A.

**Comment:** **Cue: NPO Acknowledges order to energize MOV-1810**  
**NOTE: GO TO step 19 in procedure is not required for completion of JPM.**

**Terminating Cue:** When Recirculation is aligned, the evaluation for this JPM is complete

Job Performance Measure No.: 2007-NRC-S-3(R,I)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:                      SAT    \_\_\_\_\_                      UNSAT    \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

- INITIAL CONDITIONS:
1. A large break LOCA has occurred approximately 30 minutes ago.
  2. The RWST level has decreased to 9.24 feet.
  3. Safety Injection is RESET.
  4. Containment Spray is RESET.
  5. Phase A & B are RESET.
  6. Service Water is in three-header operation.

INITIATING CUE: The SRO has directed you to transfer to cold leg recirculation in accordance with ES-1.3.

Facility: Indian Point Unit 2 Task No.: N/A

Task Title: Respond to a bearing failure of 22 RCP with reactor < 20% power and with a failure of the turbine to trip after the reactor is tripped. JPM No.: 2007-NRC-S-4(R, I)

K/A Reference: 003 A2.02 (3.7/3.9)

Examinee: NRC Examiner:  
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: Plant at 18% power with the main turbine on-line and power ascension in progress.

Task Standard: Respond to 22 RCP bearing failure by tripping the Reactor, 22 RCP and shutting the MSIV's.

Required Materials: 2-AOP-RCP-1, 2-ARP-SCF, 2-E-0

General References: 2-AOP-RCP-1, 2-ARP-SCF, 2-E-0

Handouts: NONE

Initiating Cue: You have just relieved the Reactor Operator and should respond to indications and alarms as required.

Time Critical Task: NO

Validation Time: TBD

**SIMULATOR SETUP**

Reset simulator to IC-TBD

IC will be 15-20% power with main turbine on line. A malfunction of the main turbine to trip manually or automatically will be inserted into the IC.

A lower radial bearing failure of 22 RCP will be inserted on a trigger (XMT-RCP022A final value 210 on a 60 second ramp)

(Denote Critical Steps with an asterisk)

**Performance Step: 1** ARP STEPs 3.1 & 3.2 CHECK bearing temperature on PICS to DETERMINE which pump is affected.

**Standard:** Using available indication (PISC computer primarily) determine the affected RCP is 22

**Comment:**

**Performance Step: 2** ARP STEP 3.3 Evaluate the bearing temperatures of 22 RCP.

**Standard:** Determine that they are >200F and require a reactor trip.

**Comment:**

\* **Performance Step: 3** **ARP STEP 3.3.1 TRIP the Reactor**

**Standard:** Reactor tripped.

**Comment:**

\* **Performance Step: 4** **ARP STEP 3.3.2 Trip the 22 RCP**

**Standard:** 22 RCP tripped after reactor tripped

**Comment:** **The immediate actions of E-0 should be performed at this point.**

**Performance Step: 5** Verify the Reactor Trip.

**Standard:** Verifies:

- trip breakers open
- flux decreasing
- Rod Bottom lights lit.
- RPI's < 7.5 inches

**Cue:**

**Comment:** May have already performed after initial trip and continue on with step 2 of E-0.

- 
- \* **Performance Step: 6**      **Verify Turbine trip**
- Standard:**                      Checks All turbine stop valves closed. The turbine will not have tripped at this point and the actions per the RNO column attempt to trip the turbine (this will not work) and close the MSIV's
- Cue:**
- Comment:**
- 
- Performance Step: 7**      Verify power to the 480V buses.
- Standard:**                      Checks 480V buses and determines all are energized
- Comment:**
- 
- Performance Step: 8**      Checks SI Status
- Standard:**                      Determines SI has not actuated and verifies the parameters in RNO column to determine that an SI is not required
- Comment:**                      **If the timing of the MSIV closure causes an SI then both trains of SI will be verified at this point and then transition to attachment 1. Either path would be acceptable as long as poor performance did not lead to the SI (i.e. delay in actions up to MSIV closure)**
- 
- Terminating Cue:**              When the reactor and 22 RCP are tripped, the MSIV's closed, and the immediate actions (steps 1-4) of E-0 are complete the evaluation for this JPM is complete.

Job Performance Measure No.: 2007-NRC-S-4 (R, I)

Examinee's Name:

Date Performed:

Examiner:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:                      SAT    \_\_\_\_\_    UNSAT    \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

INITIAL CONDITIONS: Plant at 18% power with the main turbine on-line and power ascension in progress.

INITIATING CUE: You have just relieved the Reactor Operator and should respond to indications and alarms as required.

Facility: Indian Point Unit 2 Task No.: N/A  
 Task Title: Response to High Containment Radiation JPM No.: 2007-NRC-S-5(R,U)  
 K/A Reference: 022/027 A4.01 (3.6/3.3)

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: An RCS leak has occurred inside containment and failed fuel has resulted in elevated radiation levels. RCS pressure and level are stable with two charging pumps and minimum letdown. The team is implementing ES-0.1 and the CRS has directed the performance of FR-Z.3.  
 A Critical Safety Function Status Tree Yellow Path exists on Containment due to high radiation levels.

Task Standard: All available IRU's and FCU are operating with cooling aligned.

Required Materials: FR-Z.3

General References: FR-Z.3

Handouts: NONE

Initiating Cue: The CRS has directed you to perform the actions of FR-Z.3.

Time Critical Task: NO

Validation Time: ~10 Minutes

**SIMULATOR SETUP**

Reset to IC-TBD

Must contain:

- RCS leak within the capacity of two charging pumps and not requiring an SI
- 21 & 23 FCU not running
- 21 FCU outlet valve failed closed
- TCV-1104 not open

(Denote Critical Steps with an asterisk )

**Performance Step: 1** Verify Containment Ventilation Isolation:  
a. Containment purge valves – CLOSED:

- FCV-1170
- FCV-1171
- FCV-1172
- FCV-1173

**Standard:** Verifies valves indicate closed.

**Performance Step: 2** b. Containment pressure relief valves – CLOSED:

- PCV-1190
- PCV-1191
- PCV-1192

**Standard:** Verifies valves indicate closed.

**Comment:**

\* **Performance Step: 3** Place Iodine filter Units and Fan units in service.

**Standard:** IRUs operating.

**Comment:**

\* **Performance Step: 4** Verify containment fan coolers are –IN SERVICE.

**Standard:** Recognizes that 21 and 23 FCU's are not running and attempts to start them both. Both fans will start and run.

**Comment:**

**Performance Step: 5** .Verify NORM OUT valves -OPEN

---

<b>Standard:</b>	Determines 21 FCU NORM OUT valve not open. Attempts to manually open valve. When valve will not open, continues with actions in "response not obtained" column and calls TSC.
<b>Cue:</b>	Acknowledge the communication as the TSC.
<b>Comment:</b>	Student may secure the 21 FCU due to improper line-up but this action is not required for this JPM. Only the attempt to manually open the outlet valve is critical.
<b>* Performance Step: 6</b>	Verify TCV-1104 and TCV-1105 both open
<b>Standard:</b>	Recognizes that TCV 1104 is not open and opens it manually.
<b>Cue</b>	
<b>Comment:</b>	
<b>Performance Step: 7</b>	Notify TSC of radiation levels to obtain recommended actions
<b>Standard:</b>	Calls TSC with current radiation readings and requests recommendations.
<b>Cue:</b>	TCS will evaluate repair options and recommend continuing. After communication terminate the JPM.
<b>Comment:</b>	
<b>Terminating Cue:</b>	When the lineup of fans, filters and cooling is complete and The TSC is called with radiations levels, the evaluation for this JPM is complete

Job Performance Measure No.: 2007-NRC-S-5(R)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:                      SAT        \_\_\_\_\_        UNSAT        \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**INITIAL CONDITIONS:** An RCS leak has occurred inside containment and due failed fuel has resulted in elevated radiation levels. RCS pressure and level are stable with two charging pumps and minimum letdown. The team is implementing ES-0.1 and the CRS has directed the performance of FR-Z.3.

A Critical Safety Function Status Tree Yellow Path exists on Containment due to high radiation levels.

**INITIATING CUE:** The CRS has directed you to perform the actions of FR-Z.3.

Facility: Indian Point Unit 2 Task No.: N/A  
Task Title: Transfer 6.9KV Buses 1 Through 4  
To Buses 5 And 6 (Station Aux  
Transformer) JPM No.: 2007-NRC-S-6  
K/A Reference: 062 A4.01 (3.3/3.1)

Examinee: NRC Examiner:  
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: Plant shutdown is in progress. Load has been stabilized at ~ 35 MWe.

Buses 5 and 6 are energized from the Station Auxiliary Transformer.  
Busses 1-4 are energized from the Unit Auxiliary Transformer.

Task Standard: Busses 1-4 are energized from the Station Auxiliary Transformer.

Required Materials: SOP-27.1.4 and blank 2-DRS-1

General References: SOP-27.1.4

Handouts: NONE

Initiating Cue: You are directed to transfer 6.9KV buses 1, 2, 3 and 4 to the Station Aux Transformer in accordance with SOP 27.1.4.

Time Critical Task: NO

Validation Time: 10 Minutes

**SIMULATOR SETUP**

Reset to IC-TBD

(Denote Critical Steps with an asterisk)

**Performance Step: 1** Obtain and review SOP-27.1.4  
**Standard:** Locates and reviews procedure

**Comment:**

**Performance Step: 2** Ensure LESS THAN 50 volt difference between Station and Unit Auxiliary Transformers by placing Station or Unit Auxiliary Transformers Tap Changers in MANUAL and adjusting.  
**Standard:** LESS THAN 50 volt difference between Station and Unit Auxiliary Transformer.

**Comment:**

\* **Performance Step: 3** Place 6900V Bus No. 1 Synchroscope in Bus 1 Bus 5 position.  
**Standard:** Synchroscope in Bus 1 Bus 5 position.

**Comment:**

\* **Performance Step: 4** If Synchroscope is at 12 o'clock then CLOSE Bus No. 1-5 tie breaker UT1-ST5.  
**Standard:** Red light ON and green light OFF.

**Comment:**

\* **Performance Step: 5** OPEN 6900 Bus No. 1 Normal Feed Breaker UT-1.  
**Standard:** Green light ON and red light OFF.

**Comment:**

**Performance Step: 6** Place 6900V Bus No. 1 Synchroscope in OFF.  
**Standard:** Synchroscope is in OFF position.

**Comment:**

- 
- Performance Step: 7**      Ensure UAT and SAT supplying voltage at 7.050 – 7.2 KV  
**Standard:**                Verifies voltage 7.050 – 7.2 KV
- Comment:**                2-DSR-1 may be referenced at this point but is not required
- 
- Performance Step: 8**      Ensure LESS THAN 50 volt difference between Station and Unit Auxiliary Transformers by placing Station or Unit Auxiliary Transformers Tap Changers in MANUAL and adjusting voltage.  
**Standard:**                LESS THAN 50 volt difference between Station and Unit Auxiliary Transformers.
- Comment:**
- 
- \* **Performance Step: 9**      Place 6900V Bus No. 2 Synchroscope in Bus 2 Bus 5.  
**Standard:**                Synchroscope in Bus 2 Bus 5 position.
- Comment:**
- 
- \* **Performance Step: 10**    If Synchroscope is at 12 o'clock then CLOSE 6900V Bus No. UT2-ST5 tie breaker.  
**Standard:**                Red light ON green light OFF.
- Comment:**
- 
- \* **Performance Step: 11**    OPEN 6900V Bus No. 2 Normal Feed Breaker UT-2.  
**Standard:**                Green light ON and red light OFF.
- Comment:**
- 
- Performance Step: 12**    Place 6900V Bus No. 2 Synchroscope in OFF.  
**Standard:**                Synchroscope in OFF.
- Comment:**

<b>Performance Step: 13</b>	Ensure UAT and SAT supplying voltage at 7.050 – 7.2 KV	Ensure U/
<b>Standard:</b>	Verifies voltage 7.050 – 7.2 KV	Verifies vc
<b>Comment:</b>	2-DSR-1 may be referenced at this point but is not required	
<b>Performance Step: 14</b>	Ensure LESS THAN 50 volt difference between Station and Unit Auxiliary Transformers by placing Station or Unit Auxiliary Transformer Tap Changers in Manual and adjusting voltage.	
<b>Standard:</b>	LESS THAN 50 volt difference between Station and Unit Auxiliary Transformers.	
<b>Comment:</b>		
* <b>Performance Step: 15</b>	Place 6900V Bus No. 3 Synchroscope in Bus 3 Bus 6.	
<b>Standard:</b>	Synchroscope in Bus 3 Bus 6 position.	
<b>Comment:</b>		
* <b>Performance Step: 16</b>	If Synchroscope is at 12 o'clock then CLOSE 6900V Bus No. 3-6 Tie Breaker UT3-ST6.	
<b>Standard:</b>	Red light ON and green light OFF.	
<b>Comment:</b>		
* <b>Performance Step: 17</b>	OPEN 6900V Bus No. 3 Normal Feed Breaker UT3.	
<b>Standard:</b>	Green light ON and red light OFF.	
<b>Comment:</b>		
<b>Performance Step: 18</b>	Place 6900V Bus No. 3 Synchroscope in OFF.	
<b>Standard:</b>	Synchroscope in OFF.	
<b>Comment:</b>		

<b>Performance Step: 19</b>	Ensure UAT and SAT supplying voltage at 7.050 – 7.2 KV	Ensure U/
<b>Standard:</b>	Verifies voltage 7.050 – 7.2 KV	Verifies vc
<b>Comment:</b>	2-DSR-1 may be referenced at this point but is not required	
* <b>Performance Step: 20</b>	Place 6900V Bus No. 4 Synchroscope in Bus 4 Bus 6.	
<b>Standard:</b>	Synchroscope in Bus 4 position.	
<b>Comment:</b>		
* <b>Performance Step: 21</b>	If Synchroscope is at 12 o'clock then CLOSE 6900V Bus No. 4-6 Tie Breaker UT4-ST6.	
<b>Standard:</b>	Red light ON and green light OFF.	
<b>Comment:</b>		
* <b>Performance Step: 22</b>	OPEN 6900V Bus No. 4 Normal Feed Breaker UT4.	
<b>Standard:</b>	Green light ON and red light OFF.	
<b>Comment:</b>		
<b>Performance Step: 23</b>	PLACE 6900V Bus No. 4 Synchroscope in OFF.	
<b>Standard:</b>	Synchroscope in OFF.	
<b>Comment:</b>		
<b>Performance Step: 24</b>	Ensure UAT and SAT supplying voltage at 7.050 – 7.2 KV	Ensure U/
<b>Standard:</b>	Verifies voltage 7.050 – 7.2 KV	Verifies vc
<b>Comment:</b>	2-DSR-1 may be referenced at this point but is not required	

---

**Performance Step: 25** When transfer is complete then ensure the Unit and Station Auxiliary Transformer Tap Changers are in AUTO.

**Standard:** Unit and Station Auxiliary Transformer Tap Changers are in AUTO.

**Comment:**

**Terminating Cue:** When Busses 1-4 are energized from the Station Auxiliary Transformer, the evaluation for this JPM is complete

Job Performance Measure No.: 2007-NRC-S-6(R, I)

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:                      SAT    \_\_\_\_\_    UNSAT    \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

INITIAL CONDITIONS: Plant shutdown is in progress.

Buses 5 and 6 are energized from the Station Auxiliary Transformer. Busses 1-4 are energized from the Unit Auxiliary Transformer.

INITIATING CUE: You are directed to transfer 6.9KV buses 1, 2, 3 and 4 to the Station Aux Transformer in accordance with SOP 27.1.4.

2007-NRC-S-7(R, I)  
TASK BEING PERFORMED:

**SIMULATOR**

Perform the Required Actions for a Failure of Intermediate  
Range Channel N35 (with Control Power Fuses Removed)

TIME: 10 Minutes

DIFFICULTY: 4

PARENT TASK: 015.002.04.01

PROCEDURE: SOP 13.1 (Rev.15)

STARTING STEP: 4.6

ENDING STEP: 4.6.4

OPERATOR PERFORMING JPM \_\_\_\_\_

PERFORMANCE:

PASS

FAIL

EVALUATOR: \_\_\_\_\_

Signature

DATE

CRITICAL STEP(S): 2; 7; 8; 11

COMMENTS: (If results are unsatisfactory, record required data on sheet provided in back of this  
JPM.)

**DIRECTIONS TO OPERATOR:**

When I tell you to begin, you are to remove Intermediate Range Channel N35 from service in accordance with the SOP due to its failure.

I will describe the general system conditions. Before you start, I will state the Task Standard and Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

**INITIATING CUES:**

1. The plant is at indicated power.
2. The plant is stable.
3. The SRO has directed you to remove Intermediate Range Channel N35 from service per the SOP.
4. All precautions and limitations have been reviewed as well as the initial conditions verified.

**TASK STANDARD:**

Plant stable with appropriate procedure completed.

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
1	Obtain correct procedure and section	SOP 13.1	
*2	Place Level Trip Switch for selected channel to BYPASS	Level Trip Switch for N35 to BYPASS	
3	Verify Level Trip Bypass lamp illuminated on IR drawer	Operator verifies N35 drawer lamp lit	
4	Verify Intermediate Range Trip Bypass lamp illuminated on FBF	Operator verifies Intermediate Range Bypass light lit on FBF	
5	Verify NIS TRIP BYPASS alarm has annunciated	Operator verifies alarm can lit on FCF	
6	Determine if control power is to be removed from affected channel  CUE: Inform operator that control power will be removed from the affected channel	N/A	
*7	Place blocking strips across Trip and Rod Stop relays  NOTE: Operator should direct I & C to perform  CUE: As I & C, acknowledge and report that blocking strips installed	Operator directs that NC 35FX in red rack E6 and F6 and NC 35EAX in Rack G4 rear be blocked	
*8	Deenergize the affected channel as directed by SWS  CUE: Inform operator as SWS to deenergize the affected channel	Instrument Power fuses for N35 removed	
9	Verify INTERMEDIATE RANGE 3X LOSS OF COMPENSATE VOLTAGE alarm has annunciated	Operator verifies alarm can lit on FCF	
10	Verify NIS INTERMEDIATE RANGE LOSS OF DETECTOR VOLTAGE alarm has annunciated	Operator verifies alarm can lit on FCF	
*11	Remove control power fuses  CUE: Inform operator, as SWS, to remove control power fuses for affected channel.  JPM complete.	Control Power fuses for N35 removed	



Facility: Indian Point Unit 2 Task No.: N/A

Task Title: Implementation of 2-AOP-LICCW-1 to address indications of leakage into the CCW system with malfunctions. JPM No.: 2007-NRC-S-8(R, I)

K/A Reference: 008 A2.02(3.2/3.5) & A2.04 (3.3/3.5)

Examinee: \_\_\_\_\_ NRC Examiner: \_\_\_\_\_  
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: Plant at 100% power.

A series of related alarms have annunciated and the CRS has directed the implementation of 2-AOP-LICCW-1 to address indications of leakage into the CCW system.

Task Standard: Perform the actions of 2-AOP-LICCW-1 to stabilize plant conditions.

Required Materials: 2-AOP-LICCW-1

General References: 2-AOP-LICCW-1

Handouts: NONE

Initiating Cue: There is a leak into the CCW system. Perform actions in accordance with 2-AOP-LICCW-1.

Time Critical Task: NO

Validation Time: TBD

**SIMULATOR SETUP**

## Reset to IC-TBD

IC will need to have a moderate sized leak into the CCW system. Large enough to provide indications of high thermal barrier flow, low seal D/P, R-47 alarm etc. Leak rate must not be so great that additional automatic actions take place during the predicted (*reasonable*) period that it will take to address the event I.A.W the AOP. The following automatic actions will be disabled: RCV-017 will not close after R-47 alarm, FCV 625 & 789 do not auto close on high flow.

(Denote Critical Steps with an asterisk)

**Performance Step: 1** Obtain 2-AOP-LICCW-1  
**Standard:** Locates and reviews procedure

**Comment:**

**Performance Step: 2** Step 4.1 stop M/U to CCW  
**Standard:** Asks CRS  
**CUE:** As CRS report that no M/U is in progress.  
**Comment:**

**Performance Step: 3** Step 4.2 Check if either the R-47 is in alarm or CCW surge tank level is rising.  
**Standard:** Checks indications and determines one or both conditions exist.

**Comment:** Both conditions will exist.

\* **Performance Step: 4** Step 4.3 Check RCV-017 closed  
**Standard:** Determines it is NOT closed and closes RCV-017

**Comment:**

**Performance Step: 5** Step 4.4/4.5 Check for indications of increased CCW activity  
**Standard:** Determine that there is indication of increased activity and make notifications to Health Physics  
**Cue:** CRS will make notifications to Health Physics.

**Comment:**

**Performance Step: 6** 4.6 If SM desires to drain the CCW surge tank initiate 2-SOP-4.1.2

**Standard:** Asks CRS for SM's direction.  
**Cue:** Do not drain the CCW surge tank at this point.  
**Comment:**

- 
- Performance Step: 7** 4.7 Perform attachments one at a time as determined by SM/CRS
- Standard:** Asks for direction or recommends Attachment 1
- Cue:** If asked for direction, ask "what attachment they recommend?" It should be attachment 1. If not direct attachment 1 be implemented.
- Comment:**
- 
- Performance Step: 8** Att. 1 step 1.1 is FCV 625/FCV-789 closed?
- Standard:** Determine that they are not and transition to step 1.6
- Comment:** **Candidate may determine at this point or an earlier point that the mentioned valve should have shut and shut them in which case he may continue on to steps 1.2-1.5. This should not affect completion of the critical steps which are mirrored in steps 1.6-1.10. The steps from here on assume completion of steps 1.6-1.10 although similar actions are completed with 1.2-1.5 and is an acceptable alternate path.**
- 
- Performance Step: 9** Att. 1 step 1.9 Evaluate RCP thermal barrier D/P's
- Standard:** Determine that 21 RCP has low D/P
- Comment:**
- 
- **Performance Step: 10** Closed FCV-625 & FCV-789
- Standard:** Valves closed manually from CCR
- Comment:**

- 
- \* **Performance Step: 11** Att. 1 step 1.8 request that 21 RCP thermal barrier return stop be closed (781A)
- Standard:** Based on board indications determine that 21 RCP needs to be isolated and request correct valve (781A) from the table in step 1.8.
- Cue:** Acknowledge request and have simulator operator close the valve requested.  
2 minutes after the request report the valve in closed.
- Comment:** Although this is critical there is an opportunity in step 1.9 to self correct.
- 
- \* **Performance Step: 12** Open FCV-625 & FCV-789
- Standard:** Valves open and observe indications that the leak is isolated.
- Comment:** **If thermal barrier leak restarts due to previous error the valve could be re-closed and steps 1.7-1.9 re-performed to recover.**
- 
- Performance Step: 13** After FCV-625 & FCV-789 are open and the attachment is exited at step 1.10 the JPM is complete
- Standard:** Reads step 1.10 and reports the attachment complete.
- Cue:** When told the attachment is complete tell the operator that the JPM is complete.
- Comment:**
- 
- Terminating Cue:** When 21 RCP seal has been isolated and thermal barrier cooling restored to other three RCP's, the evaluation for this JPM is complete

Job Performance Measure No.: 2007-NRC-S-8 (R, I)

Examinee's Name:

Date Performed:

Examiner:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:                      SAT    \_\_\_\_\_                      UNSAT    \_\_\_\_\_

Examiner's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

INITIAL CONDITIONS: Plant at 100% power.

A series of related alarms have annunciated and the CRS has directed the implementation of 2-AOP-LICCW-1 to address indications of leakage into the CCW system.

INITIATING CUE: There is a leak into the CCW system. Perform actions in accordance with 2-AOP-LICCW-1.

**Perform the Required Actions to Locally isolate RCP Seals per  
2-ECA-0.0**

Page 1 of 6

**2007-NRC-P-1(RO, I)  
JOB PERFORMANCE MEASURE**

**Operator Name:** \_\_\_\_\_

**Employee ID #:** \_\_\_\_\_

**Evaluator:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **SAT** **UNSAT**

**Perform the Required Actions to Locally isolate RCP Seals per  
2-ECA-0.0**

Page 2 of 6

**DIRECTIONS TO OPERATOR:**

When I tell you to begin, you are to simulate locally isolating RCP seals per 2-ECA-0.0 step 8

I will describe the general system conditions. Before you start, I will state the Initiating Cues and answer any questions. Utilize all reference material appropriate for this task.

**INITIATING CUES:**

1. A loss of All AC power has occurred and 2-ECA-0.0 has been implemented.
2. The CRS has directed you to isolate RCP seals locally in accordance with 2-ECA-0.0 step 8.
3. The control switch operation required in this step will be performed by the CCR staff.

**TASK STANDARD:**

All Unit 2 RCP Seals have been (simulated) isolated locally per 2-ECA-0.0 step 8.

## Perform the Required Actions to Locally isolate RCP Seals per

### 2-ECA-0.0

Page 3 of 6

● Denotes Critical Step

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: Remind operator to NOT change any switch or valve positions. For each valve the candidate will need to describe the proper method of operating an MOV (i.e engage clutch and rotate hand wheel) prior to giving cue for proper valve operation. In addition this JPM is in the RCA and proper RCA/ALARA behaviors should be observed.		
1	Obtains correct procedure and step. Once the operator locates the procedure, provide a working copy for use.		
●2	Locates and simulates manual closure of MOV-222 the RCP seal return isolation valve  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-222	
●3	Locates and simulates manual closure of MOV-250A RCP seal injection isolation valve  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-250A	
●4	Locates and simulates manual closure of MOV-250B seal injection isolation valve  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-250B	
●5	Locates and simulates manual closure of MOV-250C seal injection isolation valve  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-250C	

**Perform the Required Actions to Locally isolate RCP Seals per**

**2-ECA-0.0**

Page 4 of 6

6	Locates and simulates manual closure of MOV-250D seal injection isolation valve  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-250D	
7	Locates and simulates manual closure of MOV-789 RCP thermal barrier CCW return isolation valve.  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper clutch operation and handwheel direction to CLOSE MOV-789	
8	<b>Terminating Cue:</b> After student has completed step seven and reports his completion the JPM is complete	Reports completion of the directed step (2-ECA-0.0 step 8)	

**Perform the Required Actions to Locally isolate RCP Seals per  
2-ECA-0.0**

Page 5 of 6

Any area of weakness observed?

YES  NO

\_\_\_\_\_

\_\_\_\_\_  
Evaluator Initials

Description of problem area:

\_\_\_\_\_

**INITIATING CUES:**

4. A loss of All AC power has occurred and 2-ECA-0.0 has been implemented.
5. The CRS has directed you to isolate RCP seals locally in accordance with 2-ECA-0.0 step 8.
6. The control switch operation required in this step will be performed by the CCR staff.

**TASK STANDARD:**

All Unit 2 RCP Seals have been (simulated) isolated locally per 2-ECA-0.0 step 8.

**RETURN THIS TO INSTRUCTOR WHEN YOU HAVE COMPLETED**

**Perform the Required Actions to Locally Close 21 Main Steam  
Isolation Valve (MS-1-23)**

Page 1 of 5

**2007-NRC-P-2(All)  
JOB PERFORMANCE MEASURE**

**Operator Name:** \_\_\_\_\_

**Employee ID #:** \_\_\_\_\_

**Evaluator:** \_\_\_\_\_

**Date:** \_\_\_\_\_ **SAT** **UNSAT**

# Perform the Required Actions to Locally Close 21 Main Steam Isolation Valve (MS-1-23)

Page 2 of 5

## DIRECTIONS TO OPERATOR:

When I tell you to begin, you are to simulate closing 23 Main Steam Isolation Valve

I will describe the general system conditions. Before you start, I will state the Task Standard and Initiating Cues, and answer any questions. Utilize all reference material appropriate for this task.

## INITIATING CUES:

1. The CCR has been evacuated due to a fire and 2-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, has been implemented.
2. 23 MSIV could not be closed from the Control Room.
3. The CRS has directed you to close 23 Main Steam Isolation Valve from the Auxiliary Feed Building per 2-AOP-SSD-1, Attachment 3.

## TASK STANDARD:

23 Main Steam Isolation Valve has been (simulated) closed locally.

## Perform the Required Actions to Locally Close 21 Main Steam Isolation Valve (MS-1-23)

Page 3 of 5

● Denotes Critical Step

STEP	DESCRIPTIONS / CUES & NOTES	STANDARD	S/U
	NOTE: Remind operator to NOT change any switch or valve positions		
1	Obtains correct procedure and step. Once the operator locates the procedure, provide a working copy for use.	2-AOP-SSD-1, Attachment 3, Step 3.3	
●2	Close the Instrument Air supply stop to the MSIV  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper direction to CLOSE IA-800 for 23 MSIV	
●3	Close the MSIV accumulator outlet stop  <b>CUE:</b> After valve is located and simulated movement, cue that valve is CLOSED	Locates and indicates proper direction to CLOSE IA-801 for 23 MSIV	
4	Check OPEN the gauge stop  <b>CUE:</b> After valve is located and simulated movement, cue that valve is OPEN	Locates and indicates proper direction to check OPEN IA-962 for 23 MSIV	
●5	OPEN the instrument air supply header vent on the header side of the accumulator outlet  <b>CUE:</b> After valve is located and simulated movement, cue that valve is OPEN, air has vented and MSIV CLOSED  NOTE: <u>If</u> IA stop <u>not</u> closed in step 2, cue that air continues to vent and MSIV is open.	Locates and indicates proper direction to OPEN IA-799 for 23 MSIV	

**Perform the Required Actions to Locally Close 21 Main Steam Isolation Valve (MS-1-23)**

Page 4 of 5

Any area of weakness observed?

YES

NO

\_\_\_\_\_

\_\_\_\_\_  
Evaluator Initials

Description of problem area:

\_\_\_\_\_

**INITIATING CUES**

1. The CCR has been evacuated due to a fire and 2-AOP-SSD-1, Control Room Inaccessibility Safe Shutdown Control, has been implemented.
2. 23 MSIV could not be closed from the Control Room.
3. The CRS has directed you to close 23 Main Steam Isolation Valve from the Auxiliary Feed Building per 2-AOP-SSD-1, Attachment 3.

**TASK STANDARD:**

23 Main Steam Isolation Valve has been simulated closed locally.

**RETURN THIS TO INSTRUCTOR WHEN YOU HAVE COMPLETED**

Facility: Indian Point 2Task No: 0710011604Task Title: Align 24 Large Gas Decay Tank for start of dischargeK/A Reference: 071A4.05 (2.6/2.6)Job Performance Measure No: 2007-  
NRC-P-  
3(All)

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

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

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

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

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

## 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: System is aligned in accordance with COL 5.2.1. The SM has directed 24 Large Gas Decay Tank is to be released. 24 Large Gas Decay Tank has been isolated, sampled, and the sample has been analyzed. Release Permit has been completed and approved to release 24 LGDT in accordance with SOP-5.2.1. Radiation monitor R-44 is in service.  $R_{TA}$  for the release permit is  $3.525 \text{ E-06 } \mu\text{Ci/cc}$

Task Standard: 24 LGDT Release has been started

Required Materials: SOP-5.2.1 Rev. 27, Gaseous Waste Disposal System Operation

General References: SOP-5.2.1 Rev. 27, Gaseous Waste Disposal System Operation

Initiating Cue: You have been directed to *simulate* lining up and starting a release on 24 Large Gas Decay Tank in accordance with SOP-5.2.1.

Time Critical Task: NO

Validation Time: 30 minutes

---

**PERFORMANCE INFORMATION**

(Denote critical steps with a check mark)

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1. Performance Step: Obtain correct procedure

CUE: Provide candidate SOP 5.2.1.

Standard: SOP 5.2.1 section 4.4 and Attachment 4.

Comment:

---

**2. Performance Step: Verify RCV-014 Plant Stack Discharge Valve CLOSED**

CUE: After locating Valve indication on waste Disposal Panel, state valve is closed.

Standard: Valve indication on WDP located and position checked closed.

Comment:

---

**√ 3. Performance Step: CLOSE 1644D, PCV-1039A Inlet Stop**

CUE: After valve located and position indication checked, cue valve closed.

Standard: Valve located and position checked.

Comment: Attachment 4 should be used for the next sequence of steps.

---

---

**PERFORMANCE INFORMATION**

(Denote critical steps with a check mark)

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**√ 4. Performance Step: CLOSE 1632, 24 LGDT Reuse Outlet**

CUE: After valve located and position indication checked, cue valve closed.

Standard: Valve located on WDP.

Comment:

---

**√ 5. Performance Step: CLOSE PCV-1039B, Gas Analyzer Sample Inlet**

CUE: After valve located, question candidate on method to determine its position. If candidate states that he would use the print, allow the candidate to use print 9321-2730. After appropriate discussion, cue that valve is CLOSED.

NOTE: Drawing indicates that the valve fails closed. Air supply is from under the diaphragm. Therefore, air to open, spring to close. Closed would be stem in the "down" position.

Standard: Valve located and methods for position verification discussed.

Comment:

---

**√ 6. Performance Step: CLOSE 1617, 21 LGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

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---

**PERFORMANCE INFORMATION**

(Denote critical steps with a check mark)

---

**√ 7. Performance Step: CLOSE 1618, 22 LGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

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**√ 8. Performance Step: CLOSE 1619, 23 LGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

---

**√ 9. Performance Step: CLOSE 1652F, 21 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

---

## PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

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√ **10. Performance Step: CLOSE 1652E, 22 SGGT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

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√ **11. Performance Step: CLOSE 1652D, 23 SGGT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

---

√ **12. Performance Step: CLOSE 1652C, 24 SGGT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

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**PERFORMANCE INFORMATION**

(Denote critical steps with a check mark)

---

**√ 13. Performance Step: CLOSE 1652B, 25 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

---

**√ 14. Performance Step: CLOSE 1652A, 26 SGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve closed.

Standard: Valve located and hand wheel turned clockwise until closed.

Comment:

---

**√ 15. Performance Step: OPEN 1620, 24 LGDT Outlet Stop**

CUE: After valve located and proper motion simulated, cue valve open.

Standard: Valve located and hand wheel turned counter clockwise until open.

Comment:

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---

**PERFORMANCE INFORMATION**

(Denote critical steps with a check mark)

---

**√ 16. Performance Step: OPEN 1643D, 24 LGDT Stop (Inlet and PT)**

**CUE:** After valve located and proper motion simulated, cue valve open.

**Standard:** Valve located and hand wheel turned counter clockwise until open.

**Comment:**

---

**17. Performance Step: Manually select Waste Gas Release Line on Gas Analyzer per SOP-5.2.3**

**CUE:** After Waste Gas Analyzer is located, cue Analyzer is in manual with WG RELEASE Switch in SAMPLE position.

**Standard:** Place Gas Analyzer in manual and select WG RELEASE SW to SAMPLE position.

**Comment:** DO NOT have operator perform SOP-5.2.3. Locating the Waste Gas Analyzer is sufficient.

---

**18. Performance Step: Prepare release permit**

**CUE:** CCR has prepared the release. State that the permit number is 07-5

**Standard:** Check that a permit has been prepared and number recorded on attachment 1.

**Comment:**

---

## PERFORMANCE INFORMATION

(Denote critical steps with a check mark)

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20. Performance Step: Verify Iodine and Particulate Composite Collection device in service

CUE: Device is in service.

Standard: Checks device operating.

Comment:

---

**20. Performance Step: Verify PAB exhaust fan running**

CUE: If necessary, cue that the fan is running.

Standard: Checks fan running.

Comment:

---

**√ 21. Performance Step: Commence Release**

CUE: When CCR asked, direct the operator to commence the release.

CUE: When RCV-014 is simulated to be open, indicate that R-44 is slowly increasing but never gets to the Release Target Activity setpoint. (3.525 e-6)

Standard: Determine release target value  
Record on checkoff  
Open RCV-014 to indicated point.

Comment:

---

Terminating Cue: 24 LGDT release has been started.

---

Simulator Setup

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VERIFICATION OF COMPLETION

Job Performance Measure No. 2007-NRC-P-3(All), Align 24 Large Gas Decay Tank  
for start of discharge

Examinee'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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**INITIAL CONDITIONS:**

1. System is aligned in accordance with COL 5.2.1.
2. The SM has directed 24 Large Gas Decay Tank is to be released.
3. 24 Large Gas Decay Tank has been isolated, sampled, and the sample has been analyzed.
4. Release Permit has been completed and approved to release 24 LGDT in accordance with SOP-5.2.1.
5. Radiation monitor R-44 is in service.
6.  $R_{TA}$  for the release permit is  $3.525 \text{ E-06 } \mu\text{Ci/cc}$

**INITIATING CUE:**

You have been directed to *simulate* lining up and starting a release on 24 Large Gas Decay Tank in accordance with SOP-5.2.1.

**RETURN THIS TO EXAMINER WHEN YOU HAVE COMPLETED**