

Facility: HB ROBINSON Task No.: 01004101901

Task Title: Perform an Emergency Boration IAW EPP-4 JPM No.: 2011 NRC JPM A

K/A Reference: EPE 007 EA1.09 (3.2 / 3.3)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

ALTERNATE PATH**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 was at 7% RTP; the turbine was at 1800 rpm and ready to load.
 - Intermediate Range Channel NI-36 failed high, causing a reactor trip.
 - The crew performed the required steps of PATH-1, transitioned to EPP-4, Reactor Trip Response, and has completed Step 9.
 - Applicable actions of Foldout A have been completed.
 - Current RCS boron concentration is 890 ppm.

Task Standard: Emergency Boration flow to the RCS.

Required Materials: EPP-4, Reactor Trip Response, Revision 25

General References: EPP-4, Reactor Trip Response, Revision 25

Handouts: PATH-1 and EPP-4 marked up through EPP-4, Step 9.

Initiating Cue: You are the Reactor Operator. Beginning at Step 10, perform the actions of EPP-4.

Time Critical Task: NO

Validation Time: 5 minutes

SIMULATOR SETUP

1. Reset to IC-805
2. No SCN required.
3. PATH-1 marked up to transition to EPP-4.
4. EPP-4 marked up to completion through Step 9.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

√ **Performance Step: 1** Check ALL Control Rods – FULL INSERTED. (EPP-4 Step 10)

Standard: Determines 2 control rods (G5, N9) not inserted by observing NARPI indication not on bottom and Rod Bottom lights not illuminated. Candidate answers NO and proceeds to Step 10 RNO.

Examiner's NOTE:

Comment:

√ **Performance Step: 2** IF only one Control Rod is stuck out, THEN Go To Step 11 (EPP-4 Step 10 RNO).

IF two or more Control Rods are stuck out, THEN perform the following: (EPP Step 10 RNO).

Standard: Determines EPP-4 Step 10 RNO is applicable for TWO control rods stuck out and continues with actions to emergency borate.

Examiner's NOTE:

Comment:

Performance Step: 3 Verify at least ONE Charging Pump is RUNNING. (EPP-4 Step 11.a RNO)

Standard: Determines "B" and "C" Charging Pumps are running by observing their RED (breaker closed) lights illuminated.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 4 Borate to cold shutdown concentration using one of the following: (EPP-4 Step 10.b RNO)

- ☐ Blender to Charging Pump suction.
- ☐ RWST to Charging Pump suction.
- ☐ Blender to VCT.
- ☐ Emergency boration.

Standard: Candidate will choose method of boration, or request CRS to determine method.

Examiner's CUE: If requested to determine method of boration, as CRS: Use the options as listed.

The cold shutdown boron concentration is 1430 ppm.

Examiner's NOTE: Cold shutdown boron concentration can be obtained from the Control Room Status Board.

Comment:

Performance Step: 5 Blender to Charging Pump suction (EPP-4 Step 10.b RNO, 1st bullet)

1. OPEN FCV-113A, BA to Blender.
2. OPEN FCV-113B, Blended MU To CHG SUCT.
3. Start Boric Acid Pump aligned for blend.

Standard: Attempts to open FCV-113B. Determines it will not open.

Examiner's CUE: If requested to determine alternate boration path, as CRS: Attempt the next path in the procedural order.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step: 6** RWST to Charging Pump suction: (EPP-4 Step 10.b RNO, 2nd bullet)

1. Open LCV-115B, EMERG MU to CHG SUCT, OR locally open CVC-358, RWST to CHG PUMP SUCTION.
2. Close LCV-115C, VCT OUTLET.

Standard:

1. Opens LCV-115B, EMERG MU to CHG SUCT.
2. Closes LCV-115C, VCT OUTLET.

Examiner's NOTE:

Comment:

Performance Step: 7 OPEN CVC-310B, Loop 2 Cold Leg CHG. (EPP-4 Step 10.c RNO)

Standard: Verifies that valve CVC-310B is open.

Examiner's NOTE:

Comment:

✓ **Performance Step: 8** Verify charging flow on FI-122A. (EPP-4 Step 10.d RNO)

Standard: Verifies charging flow on FI-122A.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

END OF TASK

Terminating Cue:

After charging flow has been verified on FI-122A: Evaluation of this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM A

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 was at 7% RTP; the turbine was at 1800 rpm and ready to load.
- Intermediate Range Channel NI-36 failed high, causing a reactor trip.
- The crew performed the required steps of PATH-1, transitioned to EPP-4, Reactor Trip Response, and has completed Step 9.
- Applicable actions of Foldout A have been completed.
- Current RCS boron concentration is 890 ppm.

INITIATING CUE:

You are the Reactor Operator. Beginning at Step 10, perform the actions of EPP-4.

Facility: HB Robinson Task No.: 01000101205

Task Title: Transfer to Long Term Recirculation JPM No.: 2011 NRC JPM B
IAW EPP-10.

K/A Reference: EPE 011 EA1.11 (4.2/4.2)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X
Classroom _____ Simulator X Plant _____

ALTERNATE PATH

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 occurred 11 hours ago.
- All equipment is operating per design.
- The operating crew is ready to implement EPP-10, TRANSFER TO LONG TERM RECIRCULATION.

Task Standard: RCS hot leg injection flow has been established

Required Materials: EPP-10, TRANSFER TO LONG TERM RECIRCULATION, Revision 20
PATH-1 marked up to the transition to EPP-10

General References: EPP-10, TRANSFER TO LONG TERM RECIRCULATION, Revision 20
PATH-1, Revision 19

Handout: EPP-10

Initiating Cue: You are the Reactor Operator. The CRS has directed you to transfer to long term recirculation in accordance with EPP-10.

This task is TIME CRITICAL.

Time Critical Task: YES (6 minutes)

Validation Time: 10 minutes

SIMULATOR SETUP

1. Reset to IC-806.
2. No SCN required.
3. PATH-1 marked up to the transition for EPP-10.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1

Check ANY condition below PRESENT: (EPP-10, Step 1)

- APP-001-D4, RHR PIT A HI-HI LEVEL - ILLUMINATED
OR
- APP-001-D5, RHR PIT B HI-HI LEVEL - ILLUMINATED
OR
- EITHER RTGB RHR Pit indication - GREATER THAN 24 INCHES

Standard:

Checks annunciators clear and RHR Pit Level indicators LI-615A and 615B are less than 24 inches. Answers NO and proceeds to Step 1 RNO (Go To Step 3).

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

- Performance Step: 2** Determine the Needed RHR Alignment As Follows: (EPP-10, Step 3)
a. Check RHR System Alignment - IN PIGGY-BACK MODE
- Standard:** Verifies RHR System NOT in PIGGY-BACK Mode and answers NO. Proceeds to Step 3.a RNO (Go To Step 5)
- Examiner's NOTE:** Candidate checks the following to ensure that piggyback mode of operation is not in effect: Valves SI-863A and/or SI-863B are not open, SI and CV Spray Pumps are not operating.
- Comment:**

PERFORMANCE INFORMATION

CRITICAL TASK START TIME: _____

Procedure CAUTION: Steps 5 through 8 must be performed without delay to minimize the time without flow through the core.

- ✓ **Performance Step: 3** Perform The Following: (EPP-10, Step 5)
- a. Verify the RHR PUMPs – ALL STOPPED
 - b. Verify RHR HX DISCH Valves - CLOSED
 - RHR-759A
 - RHR-759B
 - c. Verify RHR LOOP RECIRC Valves - OPEN
 - SI-863A
 - SI-863B

- Standard:**
- a. Stops "A" RHR Pump, verifies "B" RHR Pump stopped.
 - b. Initiates CLOSE on RHR HX DISCH Valves:
 - RHR-759A
 - RHR-759B
 - c. Initiates OPEN on RHR LOOP RECIRC Valves:
 - SI-863A and notes that valve does NOT open.
 - SI-863B

Examiner's NOTE: If the IAO is dispatched to manually open valve SI-863A, radiation levels in the Pipe Alley prevent entry to manually operate the valve.

Examiner's CUE: Acknowledge the request to manually open valve SI-863A.

Comment:

PERFORMANCE INFORMATION

Procedure CAUTION: Opening SI-866A AND SI-866B, HOT LEG INJs, with only one SI Pump running will cause pump runout.

- √ **Performance Step: 4** Verify The Following Valves Aligned For Hot Leg Recirculation:
(EPP-10, Step 6)
a. At the RTGB, SI-866A, LOOP 3 HOT LEG INJ - OPEN

Standard: Initiates OPEN on SI-866A, LOOP 3 HOT LEG INJ. Notes that the valve does NOT open and proceeds to Step 6.a RNO.

Examiner's NOTE:

Comment:

- √ **Performance Step: 5** Open SI-866B, LOOP 2 HOT LEG INJ. (EPP-10, Step 6.a.RNO)

Standard: Candidate positions the control switch for valve SI-866B to the open position and observes that the valve opens.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step:5A**

Verify The Following Valves Aligned For Hot Leg Recirculation:
(EPP-10, Step 6.b)

b. BIT OUTLET Valves - CLOSED

- SI-870A
- SI-870B

Standard:

Initiates CLOSE on SI-870A and SI-870B, BIT OUTLET Valves and observes that valves close by CLOSED (GREEN) indication illuminated.

Examiner's NOTE:**Comment:****Procedure CAUTION:**

Valves RHR-759A and RHR-759B, RHR HX DISCHs, are closed. The RHR Pumps will run dead-headed and are subject to damage until the SI Pumps are started.

Performance Step: 6

Establish Hot Leg Recirculation Flow As Follows: (EPP-10, Step 7)

a. Check RHR-759A - CLOSED

Standard:

Candidate observes that valve RHR-759A indicates closed.

Examiner's NOTE:**Comment:**

PERFORMANCE INFORMATION

Performance Step: 7 Open SI-863A, RHR LOOP RECIRC (EPP-10 Step 7.b)

Standard: Candidate observes that valve SI-863A is closed and proceeds to Step 7.b RNO.

Examiner's NOTE:

Comment:

- √ **Performance Step: 8** a. Perform the following: (EPP-10, Step 7.b RNO)
- 1) Verify RHR-759B CLOSED
 - 2) Open SI-863B, RHR LOOP RECIRC.
 - 3) Close SI-863A
 - 4) Start RHR PUMP B.
 - 5) Go To Step 8.

Standard: Verifies CLOSED RHR-759B.
Verifies OPEN SI-863B, RHR LOOP RECIRC.
Verifies CLOSED SI-863A
Starts RHR PUMP "B".
Proceeds to Step 8

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step: 9** Start One SI Pump (EPP-10, Step 8)

Standard: Places the control switch for one SI Pump to the START position and notes that pump starts by the RED start indication.

Examiner's NOTE:

Comment:

CRITICAL TASK STOP TIME: _____

Performance Step: 10 Check Indicated Flow On The Appropriate Flow Meters: (EPP-10, Step 9)

PATH	FLOW METERS
SI-866B	FI-940, SI HOT LEG HEADER FLOW FI-933, SI LOOP 2 HOT LEG FLOW
SI-866A	FI-940, SI HOT LEG HEADER FLOW FI-932, SI LOOP 3 HOT LEG FLOW

Standard: Verifies flow on FI-940 and FI-933.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Procedure CAUTION: The operator should be sure that cavitation is taking place prior to transitioning to steps that attempt to mitigate screen blockage. The actions taken are beyond design basis and should NOT be taken unless warranted. Stable indication of FI-605 may also be used as an aid in determining if cavitation is present in subsequent steps when RHR-759A or RHR-759B AND RHR-744A or RHR-744B is open.

Performance Step: 11 Check RHR Pump Discharge Pressure – STABLE. (EPP-10, Step 10)

- PI-602A
- PI-602B

Standard: Candidate observes stable pressure on PI-602A and PI-602B.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

- ✓ **Performance Step: 12** Determine if SI flow should be established to Cold Legs as follows: (EPP-10, Step 11)
- Check RCS Pressure – LESS THAN 125 PSIG.
 - Check CV Sump Screen Status – HAS REMAINED CLEAR DURING RECIRCULATION
 - Check ALL of the below components – OPERABLE
FI-605, RHR TOTAL FLOW
RHR-759A and B, RHR HEAT EXCHANGER OUTLETS
SI-863A and B, RHR LOOP RECIRCs
RHR Pumps A and B

Standard:

Candidate observes that RCS pressure is less than 125 PSIG by observing RCS pressure indication on the ICCM.

Candidate observes that CV Sump screens have remained clear by observing stable RHR pump discharge pressure.

Candidate observes that FI-605 is operable and valves RHR-759A and 759B are operable.

✓ Candidate notes that valve SI-863A did NOT open and is inoperable. Answers NO and transitions to Step 11.c RNO (Go To Step 17)

Candidate notes that RHR Pumps A and B are operable.

Examiner's NOTE:**Comment:**

PERFORMANCE INFORMATION

✓ **Performance Step: 13** Check time since hot leg flow established – 16 HOURS. (EPP-10, Step 17)

Standard: Candidate notes that hot leg injection has just been established and transitions to Step 17 RNO.

Examiner's NOTE: This step completes the JPM.

Comment:

END OF TASK

Terminating Cue: After RCS Hot Leg injection flow is verified: Evaluation on this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM B

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:

- A Large Break LOCA occurred 11 hours ago.
- All equipment is operating per design.
- The operating crew is ready to implement EPP-10, TRANSFER TO LONG TERM RECIRCULATION.

INITIATING CUE:

You are the Reactor Operator. The CRS has directed you to transfer to long term recirculation in accordance with EPP-10.

This task is TIME CRITICAL.

Facility: HB ROBINSON Task No.: 01104100504

Task Title: Depressurize the RCS IAW DSP-003 JPM No.: 2011 NRC JPM C

K/A Reference: 010 A4.03 (4.0/3.8)

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:

- The plant is in Mode 3 following a reactor trip.
- A fire in the Charging Pump Room has destroyed all 3 Charging Pumps.
- DSP-003, Hot Shutdown from the Control Room with a Fire in the Charging Pump Room has been entered by the operating crew and is completed up through Step 29.
- EPP-21, Energizing Pressurizer Heaters from Emergency Busses, is in progress.
- RCS is at 527 degrees F and 1810 psig.

Task Standard: Depressurize the RCS to allow SI injection flow for inventory control.

Required Materials: DSP-003, Hot Shutdown from the Control Room with a Fire in the Charging Pump Room, Revision 18
Station Curve 3.4, Reactor Coolant System Pressure-Temperature Limitations for Cooldown

General References: DSP-003, Station Curve 3.4

Handouts: DSP-003 marked up through Step 29
Station Curve 3.4

Initiating Cue: You are to perform DSP-003 actions starting at Step 30.

Time Critical Task: NO

Validation Time: 10 minutes

SIMULATOR SETUP

1. Reset to IC- 807
2. No SCN required.
3. DSP-003 has been completed up through Step 29.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

- √ **Performance Step: 1** Depressurize the RCS to 1400 psig as follows: (Step 30)
Verify RC-536, PORV Block – OPEN
Open PCV-455C, PZR PORV
Check PZR level – Less than 90%
Check RCS pressure – Less than 1400 psig
Close PCV-455C

Standard:

Candidate verified RC-536 open by observing the RED open indication on the valve.

Candidate opened PCV-455C by placing the control switch to the open position and observing that the RED open indication is illuminated.

Candidate observes PZR level on LI-459A, LI-460, LI-461 and/or LR-459 Pen 1 and determines that level is less than 90%.

When RCS pressure is less than 1400 psig, the candidate closes PCV-455C by placing the control switch to CLOSE or AUTO and verifies that the valve is closed by observing the GREEN closed indication.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step: 2** Verify Both BIT OUTLET valves – Open. (Step 31)

Standard: Candidate places the control switches for valves SI-870A and 870B to the open position and verifies the valves open by observing the RED open indication illuminated and the GREEN closed indication extinguished.

Examiner's NOTE:

Comment:

Procedure CAUTION: If surge flow into the PZR is greater than the available heaters are capable of heating, RCS pressure will decrease causing an increase in the surge. This will cause pressure to decrease faster. In order to secure the pressure drop, the Safety Injection flow has to be secured.

If the SI Pump has not been run in the last hour, Then 3 consecutive starts are allowed.

If the SI Pump has been started 3 times in the last hour AND neither of the last 2 starts was a run of at least 15 minutes, Then no further starts are allowed for 1 hour. Any run in the previous hour is considered 1 of the 3 allowed starts.

If the SI Pump was run at least 15 minutes and stopped, Then 2 consecutive starts are allowed with no waiting period.

PERFORMANCE INFORMATION

✓ **Performance Step: 3** Makeup to the RCS using the SI system as follows: (Step 32.a)
Start a single SI Pump

Standard: Candidate places the control switch for "A" or "C" SI Pump to the Start position and observes RED running light illuminated and GREEN stopped indication extinguished.

Examiner's NOTE:

Comment:

Performance Step: 4 Control SI flow to the RCS as follows: (Step 32.b)
Control RCS pressure to maintain approximately 200 GPM as indicated on FI-943.
Control RCS pressure using PZR heaters and Steam Line PORVs

Standard: Candidate controls RCS pressure by cycling Steam Line PORVs RV-1, RV-2 and/or RV-3 to maintain the SI injection flow at approximately 200 GPM.

Examiner's NOTE: Candidate does not have any control of the PZR Heaters due to PZR level being less than 14.4% (Low level cutout) and EPP-21 implementation for energizing PZR Heaters from the Emergency Busses has not been completed.

Examiner's CUE: EPP-21 implementation is still in progress and RCS cooldown limit is 25 degrees F per hour for the present plant conditions. The CRS has directed you to continue with Step 33.

Comment:

PERFORMANCE INFORMATION

Performance Step: 5 Check RCS subcooling – Greater than 35 degrees F (Step 33)

Standard: Candidate observes subcooling to be greater than 35 degrees F.

Examiner's NOTE:

Comment:

Performance Step: 6 Check PZR Level – Less than 71% (Step 34)

Standard: Candidate observes PZR level on LI-459A, LI-460, LI-461 and/or LR-459 Pen 1 and determines that level is less than 71%.

Examiner's NOTE:

Comment:

Performance Step: 7 Check PZR Level – Greater than 24% (Step 35)

Standard: Candidate observes PZR level on LI-459A, LI-460, LI-461 and/or LR-459 Pen 1 and determines that level is NOT greater than 24%. Answers NO and Proceeds to Step 35 RNO.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

- √ **Performance Step: 8** Increase PZR level as follows: (Step 35 RNO)
Verify one SI Pump is running.
If required, Then use PCV-455C, PZR PORV to lower RCS pressure to maintain SI flow at 200 GPM.

Standard:

Candidate verifies that 1 SI Pump is operating by observing the RED operating indication illuminated and the GREEN stopped indication is extinguished.

Candidate lowers the RCS pressure to maintain SI injection flow at 200 GPM by cycling PCV-455C open and closed using the control switch.

Examiner's NOTE:**Comment:****END OF TASK**

Termination: **With SI injection flow maintained at ~ 200 GPM, the JPM task is complete.**

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM C

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:

- The plant is in Mode 3 following a reactor trip.
- A fire in the Charging Pump Room has destroyed all 3 Charging Pumps.
- DSP-003, Hot Shutdown from the Control Room with a Fire in the Charging Pump Room has been entered by the operating crew and is completed up through Step 29.
- EPP-21, Energizing Pressurizer Heaters from Emergency Busses, is in progress.
- RCS is at 527 degrees F and 1810 psig.

INITIATING CUE:

You are to perform DSP-003 actions starting at Step 30.

Facility: HB ROBINSON Task No.: 01000105805

Task Title: Respond to a tripped RHR Pump JPM No.: 2011 NRC JPM D

K/A Reference: APE 025 AA1.03 (3.4 /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:

- The unit is in Mode 5 with RHR aligned for core cooling.
- RHR Pump B is in service.
- Plant is in reduced inventory with all Containment penetrations closed.

Task Standard: RHR Pump A started properly and correct flow controlled.

Required Materials: AOP-020, LOSS OF RESIDUAL HEAT REMOVAL (SHUTDOWN COOLING), Revision 31

General References: AOP-020, LOSS OF RESIDUAL HEAT REMOVAL (SHUTDOWN COOLING), Revision 31

Handout: NONE

Initiating Cue: Respond to plant conditions

Time Critical Task: NO

Validation Time: 8 minutes

SIMULATOR SETUP

1. Reset to IC-808.
2. SCN: 008_NRC_JPM_D will be used to trip the running RHR Pump when directed by the NRC Examiner.
3. Place clearance caps on the switches for PCV-455C, PCV-456, RC-535 and RC-536.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Responds to loss of RHR Pump B.

Standard: APP-001-F7, RHR PMP MOTOR OVLD/TRIP received when pump trips. APP directs entry into AOP-020 and candidate enters procedure.

Examiner's NOTE:

Comment:

Performance Step: 2 Check RCS Level LESS THAN – 72 inches (69% FULL RANGE RVLIS). (AOP-020, Step 1)

Standard: Verifies RCS level > -72 inches, answers NO and transitions to Step 1RNO.(Go To Step 3)

Examiner's NOTE:

Comment:

Performance Step: 3 Make PA announcement for procedure entry. (Step 3)

Standard: Candidate locates available PA and makes plant announcement of entry into AOP-020 due to trip of the running RHR pump.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Procedure NOTE: FRP-S.1 is NOT applicable for this event unless directed by the CSFSTs.

Performance Step: 4 From the RTGB, Verify Reactor tripped as follows: (Step 4)
Reactor Trip Main and Bypass – OPEN
Rod Position Indication – ZERO
Rod Bottom Lights – Illuminated

Standard: Reactor trip breakers are open by observing the GREEN open indication illuminated and the RED closed indication extinguished.
Reactor trip bypass breakers are racked out and both RED and GREEN light indication is extinguished.
Rod position indication and rod bottom lights are both extinguished due to plant conditions that has de-energized the Rod Control System.

Examiner's NOTE:

Comment:

Performance Step: 5 Check RCS Level - DECREASING: (Step 5)

- Pressurizer level
- RCS loop standpipe level
- RVLIS
- Refueling Cavity Watch report

Standard: Determines RCS level is stable and answers NO. Proceeds to Step 5 RNO.

Examiner's NOTE:

Booth Operator CUE: If local indication is requested, report RCS level stable (use an indicated level consistent with RVLIS).
If Refueling Cavity Watch report requested, report that Refueling Cavity watch is not posted.

Comment:

PERFORMANCE INFORMATION

Performance Step: 6

AOP-020, Step 5 RNO

IF either PZR PORV is failed open due to loss of input from PT-500 OR PT-501, THEN place the associated LTOPP Arming Switch to the NORMAL position.

IF the event does NOT involve a loss of inventory, THEN Go To Section E, Loss Of RHR Flow Or Temperature Control.

Standard:

Determines all PZR PORVs are blocked open for RCS vent path requirements and/or no input channel is failed.

Proceeds to AOP-020, Section E.

Examiner's NOTE:**Comment:**

PERFORMANCE INFORMATION

Performance Step: 7 Implement the EALs. (Section E, Step 1)

Standard: Informs CRS or SM to refer to EALs regarding loss of the running RHR Pump.

Examiner's NOTE:

Examiner's CUE: **Acknowledge report.**

Comment:

Performance Step: 8 Check CV Closure Status – PENETRATIONS OPEN. (Section E, Step 2)

Standard: Candidate determines from the cue sheet that there are no open CV penetrations and proceeds to Step 2 RNO. (Go To Step 8).

Examiner's NOTE:

Comment:

Performance Step: 9 Check reason for entry: (Section E, Step 8)

- LOW FLOW, or
- RHR PUMP TRIP

Standard: Notes reason as RHR PUMP TRIP.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Procedure CAUTION: Changes in RCS pressure may result in inaccuracies in RCS Loop Standpipe indications.

Performance Step: 10 Check RHR Pumps – ALL STOPPED. (Section E, Step 9)

Standard: Candidate determines that all RHR pumps are stopped.

Examiner's NOTE:

Comment:

Procedure NOTE: The intent of this procedure is to maintain the CV Purge in service if the Equipment Hatch is not installed.

Performance Step: 11 Check power supply to at least one RHR Pump - AVAILABLE: (Section E, Step 10)

- RESIDUAL HEAT REMOVAL PUMP A (E-1, CMPT-22A)

OR

- RESIDUAL HEAT REMOVAL PUMP B (E-2, CMPT-26B)

Standard: Determines power available to Bus E-1 and/or dispatches AO to verify power available to RHR Pump A.

Examiner's NOTE:

Booth Operator CUE: If necessary, report power available to RHR Pump A.

Comment:

PERFORMANCE INFORMATION

Performance Step: 12 Determine RHR Status As Follows: (Section E, Step 11.a)

a. Check CCW - AVAILABLE

Standard: Determines CCW available and/or in normal shutdown alignment.

Examiner's NOTE:

Comment:

√ **Performance Step: 13** Adjust FC-605, RHR HX BYPASS FLOW Controller 0% (Closed) (Section E, Step 11.b)

Standard: Adjusts FC-605 to <5%.

Examiner's NOTE:

Comment:

√ **Performance Step: 14** Adjust HIC-758, RHR HX DISCH FLOW, 0% (Closed) (Section E, Step 11.c)

Standard: Adjusts HIC-758 to <5%.

Examiner's NOTE:

Comment:

√ **Performance Step: 15** Attempt to start the standby RHR pump. (Section E, Step 11.d)

Standard: Starts RHR Pump A by placing the control switch to the START position.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 16 Check RHR Pumps – ONE RUNNING (Section E, Step 11.e)

Standard: Verifies RHR Pump A running.

Examiner's NOTE:

Comment:

√ **Performance Step: 17** Adjust FC-605, RHR HX BYPASS FLOW Controller, To Restore Flow Between 3000 gpm And 3750 gpm. (Section E, Step 11.f)

Standard: Adjusts FC-605 to attain a stable flow ≥ 3000 gpm but ≤ 3750 gpm.

Comment:

Performance Step: 18 Adjust HIC-758, RHR HX DISCH FLOW, To Obtain Desired Cooling (Section E, Step 11.g)

Standard: Adjusts HIC-758 to attain the desired cooling to maintain RCS temperature.

Comment:

END OF TASK

Terminating Cue: When RHR flow is restored: Evaluation on this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM D

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:

- The unit is in Mode 5 with RHR aligned for core cooling.
- RHR Pump B is in service.
- Plant is in reduced inventory with all Containment penetrations closed.

INITIATING CUE:

Respond to plant conditions

Facility: HB ROBINSON Task No.: 01311101306

Task Title: Isolate HVH Cooler leak inside the CV IAW FRP-J.2 JPM No.: 2011 NRC JPM E

K/A Reference: EPE E15 EA1.1 (2.9 / 3.0)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

ALTERNATE PATH**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 ECCS equipment is operating.
- CSF-5, Containment Critical Safety Function Status Tree is in an ORANGE condition.

Task Standard: Leaking HVH Cooler stopped and isolated in accordance with FRP-J.2.

Required Materials: FRP-J.2, RESPONSE TO CONTAINMENT FLOODING., Revision 3

General References: FRP-J.2, RESPONSE TO CONTAINMENT FLOODING., Revision 3

Initiating Cue: You are the Reactor Operator. The CRS has directed you to perform the actions of FRP-J.2.

Handouts: FRP-J.2, RESPONSE TO CONTAINMENT FLOODING., Revision 3

Time Critical Task: NO

Validation Time: 7 minutes

SIMULATOR SETUP

1. Reset to IC-809.
2. No SCN required.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Check any S/G – FAULTED OR RUPTURED. (FRP-J.2, Step 1)

Standard: Verifies no S/G FAULTED OR RUPTURED and answers NO.
Proceeds to Step 1 RNO. (Go To Step 3)

Examiner's NOTE:

Comment:

Performance Step: 2 Determine if a CCW leak exists as follows: (FRP-J.2, Step 3)

- Check CCW surge tank level – DECREASING, OR
- Check excessive makeup required to maintain CCW surge tank level stable.

Standard: Verifies CCW Surge Tank level stable (ERFIS and/or RTGB) and answers NO and proceeds to Step 3 RNO. (Go To Step 5)

Examiner's NOTE: CCW Surge Tank level ERFIS plot is QP CCW and RTGB instrument is LI-614B.

Comment:

PERFORMANCE INFORMATION

- Performance Step: 3** Determine if a fire water leak exists as follows: (FRP-J.2, Step 5)
- Check APP-044-C55, E.D. FIRE PUMP RUNNING – CLEAR
AND
 - Check APP-044-C58, M.D. FIRE PUMP RUNNING - CLEAR
- Standard:** Verifies and reports both APP-044-C55 and C58 CLEAR.

Examiner's NOTE: These annunciators are verified clear on the Fire Alarm Console (FAC) by the absence of the alarms.

Comment:

- Performance Step: 4** Verify the following primary water containment isolation valves – CLOSED: (FRP-J.2, Step 6)
- RC-519A, PW to CV ISO
 - RC-519B, PW to CV ISO
- Standard:** Verifies and reports RC-519A and RC-519B CLOSED.

Examiner's NOTE:

Comment:

- Performance Step: 5** Perform the following to identify an HVH cooler leak: (FRP-J.2, Step 7.a)
- a. Check APP-002-A8, HVH-1 WTR OUTLET FLOW LO Alarm – EXTINGUISHED.
- Standard:** Reports that APP-002-A8 is EXTINGUISHED.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 6 b. Check APP-002-B8, HVH-2 WTR OUTLET FLOW LO Alarm
– EXTINGUISHED. (FRP-J.2, Step 7.b)

Standard: Reports that APP-002-B8 is EXTINGUISHED.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

- √ **Performance Step: 7** c. Check APP-002-C8, HVH-3 WTR OUTLET FLOW LO Alarm – EXTINGUISHED. (FRP-J.2, Step 7.c)

Standard: Reports that APP-002-C8 is NOT EXTINGUISHED. Answers NO and proceeds to Step 7.c.RNO.

Examiner's NOTE:

Examiner's CUE: If candidate requests local Service Water Flow indication from HVH-3, tell him that the flow on FI-1698C is currently reading 330 gpm.

Comment:

- √ **Performance Step: 8** Perform the following to isolate SW flow to HVH-3: (FRP-J.2, Step 7.c RNO)

1. Verify HVH-3, CV RECIRC FAN is STOPPED.
2. Verify the following valves are CLOSED:
 - V6-33C, SW INLET
 - V6-34C, SW OUTLET
 - V6-35C, WTR SAMPLING

Standard: Places HVH-3 Control switch to STOP position.
CLOSES the following valves by placing the control switches in the CLOSE position:

- V6-33C, SW INLET
- V6-34C, SW OUTLET
- V6-35C, WTR SAMPLING

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 9 Perform the following to identify an HVH cooler leak: (FRP-J.2, Step 7.d)
d. Check APP-002-D8, HVH-4 WTR OUTLET FLOW LO Alarm – EXTINGUISHED.

Standard: Reports that APP-002-D8 is EXTINGUISHED.

Examiner's NOTE:

Comment:

Performance Step: 10 Notify Chemistry to sample the RHR System to determine CV Sump water activity.

Standard: Candidate notifies E&C Technician to sample the RHR system.

Examiner's NOTE:

Examiner's CUE: Respond as the E&C Technician and acknowledge the request to sample the RHR system.

Comment:

Performance Step: 11 Notify Plant Operations staff of Containment water level AND activity level to obtain recommended actions.

Standard: Candidate notifies Operations supervision of the present CV water level and activity conditions.

Examiner's NOTE:

Examiner's CUE: Respond as the Operations supervision and acknowledge the notification of CV conditions.

Comment:

PERFORMANCE INFORMATION

Performance Step: 12 Reset SPDS AND return to procedure and step in effect.

Standard: Candidate resets SPDS by depressing the function key F3 on the computer keyboard at the SPDS monitoring station adjacent to the STA desk.

Examiner's NOTE: Upper left corner of SPDS display panel will display "RESETTING SPDS" when the function key F3 is depressed.

Comment:

END OF TASK

Terminating Cue: When actions within FRP-J.2 are completed: Evaluation on this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM E

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:

- A Large Break LOCA has occurred.
- All ECCS equipment is operating.
- CSF-5, Containment Critical Safety Function Status Tree is in an ORANGE condition.

INITIATING CUE:

You are the Reactor Operator. The CRS has directed you to perform the actions of FRP-J.2.

Facility: HB ROBINSON Task No.: 01000108405

Task Title: Restoration of Normal AC Power After Restoration of DC Bus A JPM No.: 2011 NRC JPM F

K/A Reference: 062 000 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:
- Plant was at 100% RTP when a loss of DC Bus A occurred.
 - A Reactor Trip and Safety Injection are received.
 - PATH-1, EPP-7, SI Termination, and EPP-26, Loss of DC Bus A have been implemented by the crew.
 - EPP-26 has directed that Attachment 3, Restoration of AC Power, be performed.
 - The Startup Transformer is energized.

Task Standard: The normal on-site power distribution system energized from the Startup Transformer.

Required Materials: EPP-26, Attachment 3, Restoration of AC Power.

General References: PATH-1
EPP-4, Reactor Trip Response
EPP-7, SI Termination
EPP-26, Loss of DC Bus A

Initiating Cue: The CRS has directed you to perform EPP-26, Attachment 3 to restore normal AC Power to the plant electrical busses.

Time Critical Task: NO

Validation Time: 12 minutes

SIMULATOR SETUP

1. Reset to IC-810.
2. SCN: 008_NRC_JPM_F used to locally close breaker 52/4 on 4160V Bus 1 and to reset the Startup Transformer local alarms.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Verify LINE DISCONNECT SWITCH CLOSED (Att. 3, Step 1)

Standard: Candidate verifies that the Line Disconnect Switch (Motor Operated Disconnect) for the Startup Transformer is closed by observing the RED closed indication on the RTGB.

Examiner's NOTE:

Comment:

Performance Step: 2 Check START UP TRANSF ENERGIZED Light - ILLUMINATED.
(Att. 3 Step 2)

Standard: Candidate observes that the White STARTUP TRANSFORMER ENERGIZED light is illuminated on the RTGB.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 3 Check 4160V BUS 2 – DEENERGIZED (Att. 3, Step 3)

Standard: Candidate notes that 4160V Bus 2 is deenergized by observing ZERO voltage on 4KV Bus #2 or #3 Volts meter on the RTGB.
Bistable 4KV Bus 02 UNDER VOLTAGE is located on the RTGB Bistable Status Panel B and will be illuminated to indicate that 4KV Bus 2 is deenergized.

Examiner's NOTE: 4KV Bus Voltmeters are selectable with switches on the RTGB that select between Busses 2 and 3 and Busses 1 and 4. Candidate may have to select Bus 2 with the switch to obtain the voltage reading .

Comment:

✓ **Performance Step: 4** Insert key into the STARTUP TRANSF synchroscope switch AND place the switch to STARTUP BUS 2 position. (Att. 3, Step 4)

Standard: Key inserted into the STARTUP TRANSF synchroscope switch and the switch is selected to BUS 2 position.

Examiner's NOTE: Synchroscope will not respond due to the bus being deenergized (dead bus).

Comment:

PERFORMANCE INFORMATION

- √ **Performance Step: 5** Momentarily place START-UP TO 4 KV BUS 2, BKR 52/12 to CLOSE position. (Att. 3, Step 5)
- Standard:** Candidate places the control switch for breaker 52/12 to the close position and observes the RED closed indication is illuminated and the GREEN open indication is extinguished.
- Examiner's NOTE:** When the breaker closes, the synchroscope will indicate at the 12 o'clock position.
- Comment:**
- Performance Step: 6** Place STARTUP TRANSF synchroscope switch to midposition (Off). (ATT. 3, Step 6)
- Standard:** Candidate places the key switch to the mid position (Off).
- Examiner's NOTE:** Synchroscope will deflect from 12 o'clock position.
- Comment:**
- Performance Step: 7** Check 4160V BUS 1 – DEENERGIZED. (Att. 3, Step 7)
- Standard:** Candidate notes that 4160V Bus 1 is energized by observing voltage on 4KV Bus #1 or #4 Volts meter on the RTGB and proceeds to Step 7 RNO. (Go To Step 12)
- Bistable 4KV Bus 01 UNDER VOLTAGE is located on the RTGB Bistable Status Panel B and will be extinguished to indicate that 4KV Bus 1 is energized.
- Examiner's NOTE:** The tie breaker between 4KV Busses 1 and 2 (Breaker 52/10) was closed prior to closing breaker 52/12. The closing of breaker 52/12 reenergized both 4KV Busses 1 and 2.
- Comment:**

PERFORMANCE INFORMATION

Performance Step: 8 Check 480V BUS E-1 – DEENERGIZED (Att. 3, Step 12)

Standard: Candidate observes that 480V Bus E-1 is deenergized by noting that breakers 52/18B, 480V Bus E-1 Main Breaker and 52/17B, EDG A to 480V Bus E-1, are both in the OPEN position.

Examiner's NOTE: The candidate may use other indications such as selecting points on the ERFIS computer to obtain voltage readings on 480V Bus E-1.

Comment:

Procedure NOTE: When closing a supply breaker to energize a 480V Bus, the switch must be held to the close position for at least 5 seconds in order to energize the undervoltage relays.

✓ **Performance Step: 9** Momentarily place 480V BUS E-1 MAIN, BKR 52/18B control switch to CLOSE position. (Att. 3, Step 13)

Standard: Candidate places the control switch for breaker 52/18B to the close position and observes RED closed indication illuminated and GREEN open indication extinguished.

Examiner's NOTE: EDG A DIESEL START white light will extinguish when 480V Bus E-1 is energized.

Comment:

PERFORMANCE INFORMATION

Performance Step: 10 Check 480V BUS 1 – DEENERGIZED (Att. 3, Step 14)

Standard: Candidate observes breakers 52/1B or 52/2B in the OPEN position and breaker 52/5B in the OPEN position.

Examiner's NOTE: 480V Bus 1 will be deenergized with Breakers 52/1B or 52/2B and 52/5B open.

Comment:

✓ **Performance Step: 11** Momentarily place SST 2A TO 480V SYSTEM, BKR 52/1B control switch to CLOSE position. (Att. 3, Step 15)

Standard: Candidate places the control switch for breaker 52/1B to the close position and observes RED closed indication illuminated and GREEN open indication extinguished.

Examiner's NOTE:

Comment:

✓ **Performance Step: 12** Momentarily place 480V BUS 1 MAIN, BKR 52/2B control switch to CLOSE position. (Att. 3, Step 16)

Standard: Candidate places the control switch for breaker 52/2B to the close position and observes RED closed indication illuminated and GREEN open indication extinguished.

Examiner's NOTE: This action will reenergize 480V Bus 1.

Comment:

PERFORMANCE INFORMATION

- √ **Performance Step: 13** Using the breaker control switch at 4160V Bus 1, Close BKR 52/4, STATION SERVICE TRANSFORMER 2B. (Att. 3, Step 17)
- Standard:** Candidate requests that the Outside Auxiliary Operator locally close breaker 52/4 on 4160V Bus 1.
- Examiner's NOTE:**
- Booth Operator:** Close breaker 52/4 locally from the control switch and report the action complete to the Control Room.
- Comment:**
- Procedure NOTE:** There will be a momentary loss of power to 480V BUS 2A if power is being supplied from 480V BUS 1.
- Performance Step: 14** Check 480V BUS 1 – 2A TIE, BKR 52/5B – OPEN (Att. 3, Step 18)
- Standard:** Candidate checks that breaker 52/5B is open by observing that the GREEN open indication is illuminated and the RED closed indication is extinguished.
- Examiner's NOTE:**
- Comment:**
- Performance Step: 15** Check 480V BUS 2A – DEENERGIZED (Att. 3, Step 19)
- Standard:** Candidate observes breakers 52/8B and 52/5B in the OPEN position.
- Examiner's NOTE:**
- Comment:**

PERFORMANCE INFORMATION

- ✓ **Performance Step: 16** Momentarily place 480V BUS 2A MAIN, BKR 52/8B control switch to CLOSE position. (Att. 3, Step 20)
- Standard:** Candidate places the control switch for breaker 52/8B to the close position and observes RED closed indication illuminated and GREEN open indication extinguished.
- Examiner's NOTE:**
- Comment:**
-
- Performance Step: 17** Check 480V BUS 2B MAIN, BKR 52/9B – OPEN (Att. 3, Step 21)
- Standard:** Candidate checks that breaker 52/9B is open by observing that the GREEN open indication is illuminated and the RED closed indication is extinguished.
- Examiner's NOTE:**
- Comment:**
-
- Procedure NOTE:** **There will be a momentary loss of power while transferring 480V BUS 2B to its normal power source in the following steps.**
- ✓ **Performance Step: 18** Momentarily place 480V BUS 2B - 3 TIE, BKR 52/12B control switch to TRIP position. (Att. 3, Step 22)
- Standard:** Candidate places the control switch for breaker 52/12B to the open position and observes GREEN open indication illuminated and RED closed indication extinguished.
- Examiner's NOTE:**
- Comment:**

PERFORMANCE INFORMATION

- ✓ **Performance Step: 19** Momentarily place 480V BUS 2B MAIN, BKR 52/9B control switch to CLOSE position. (Att. 3, Step 23)
- Standard:** Candidate places the control switch for breaker 52/9B to the close position and observes RED closed indication illuminated and GREEN open indication extinguished.

Examiner's NOTE:

Comment:

- Performance Step: 20** Go to the Main Body, Step 35, of this procedure (Att. 3, Step 24).

Standard: Candidate will return to the main body of EPP-26, Step 35.

Examiner's NOTE: This step completes the JPM.

Comment:

END OF TASK

Terminating Cue: When power has been restored to the plant electrical busses, the JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM F

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 was at 100% RTP when a loss of DC Bus A occurred.
- A Reactor Trip and Safety Injection are received.
- PATH-1, EPP-7, SI Termination, and EPP-26, Loss of DC Bus A have been implemented by the crew.
- EPP-26 has directed that Attachment 3, Restoration of AC Power, be performed.
- The Startup Transformer is energized.

INITIATING CUE:

The CRS has directed you to perform EPP-26, Attachment 3 to restore normal AC Power to the plant electrical busses.

Facility: HB ROBINSON Task No.: 01000108705

Task Title: Loss of Source Ranges in Mode 3 during OST-001 JPM No.: 2011 NRC JPM G

K/A Reference: 015 A2.01 (3.5 / 3.9)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: _____ Actual Performance: X

Classroom _____ Simulator X Plant _____

ALTERNATE PATH**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 Unit is in Mode 3 at normal operating temperature and normal operating pressure.
- Preparations are in progress for a reactor startup.
- The NIS racks have been energized for several hours.
- OST-001, Steps 4.1 – 4.4 have been completed.

Task Standard: The Operator opens the reactor trip breakers immediately following the loss of Both Source Ranges

Required Materials: OST-001
APP-005-A1
ITS Table 3.3.1-1

General References: OST-001
APP-005-A1
ITS Table 3.3.1-1

Handouts: OST-001, Main Body and Section 8.1

Initiating Cue: The CRS has directed you to perform OST-001 on N-31.

Time Critical Task: NO

Validation Time: 15 Minutes

SIMULATOR SETUP

1. Reset to IC – 811
2. No SCN required.
3. Provide the operator with a copy of OST-001 with Steps 4.1-4.4 completed.
4. Place simulator in RUN when directed by the NRC Examiner.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Place the CHANNEL SELECTOR switch, on the AUDIO COUNT RATE CHANNEL drawer, in the N-32 Position (Step 8.1.1)

Standard: CHANNEL SELECTOR switch selected to N32.

Examiner's NOTE:

Comment:

Procedure NOTE: An out-of-service Source Range (SR), Intermediate Range (IR), or Power Range will cause APP-005-D4, NIS TRIP/DROP ROD BYPASS annunciator light to be illuminated.

Performance Step: 2 If ERFIS is in service THEN remove from scan the computer point N-31; NIN0031A. (Step 8.1.2)

Standard: ERFIS computer point NIN0031A removed from scan

Examiner's NOTE: This is performed on an ERFIS console by selecting DR (Delete/Restore), Delete Scan, and entering point ID - NIN0031A

Comment:

PERFORMANCE INFORMATION

Procedure CAUTION: When the LEVEL TRIP switch is positioned to BYPASS in the step below, the Source Range channel will be Out Of Service, AND a plant LCO condition may apply as required by ITS Table 3.3.1-1 and ITS LCO 3.9.2

Procedure NOTE: Unless otherwise stated, the switches, potentiometers, and indicators addressed by the procedure steps in this section are located on the drawer front panel for N-31.

√ **Performance Step: 3** Place the LEVEL TRIP switch in the BYPASS position.
(Step 8.1.3)

Standard: LEVEL TRIP switch in BYPASS position

Examiner's NOTE:

Comment:

Performance Step: 4 Check the LEVEL TRIP BYPASS indicator is illuminated.
(Step 8.1.4)

Standard: Verified LEVEL TRIP BYPASS for N-31 indicator illuminated

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 5 Check the NIS TRIP BYPASS status light, on the RTGB, is illuminated for N-31 (Step 8.1.5)

Standard: Verified NIS TRIP BYPASS N31 status light illuminated.

Examiner's NOTE:

Comment:

Procedure NOTE: If an Intermediate Range or Power Range channel is out-of-service, the NIS TRIP/ROD DROP BYPASS annunciator light will already be ILLUMINATED; therefore, the next step cannot be completed and should be marked N/A.

Performance Step: 6 Check annunciator APP-005-D4, NIS TRIP/DROP ROD BYPASS is illuminated, on the RTGB (Step 8.1.6)

Standard: Verified APP-005-D4 illuminated (in alarm)

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step: 7** Place the HIGH FLUX AT SHUTDOWN switch in the BLOCK position. (Step 8.1.7)

Standard: Placed HIGH FLUX AT SHUTDOWN switch for N-31 in the BLOCK position.

Examiner's NOTE:

Comment:

Performance Step: 8 Check Annunciator APP-005-B1, HI FLUX AT SHUTDOWN ALARM BLOCK is illuminated on the RTGB. (Step 8.1.8)

Standard: Verified APP-005-B1 illuminated (in alarm)

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 9 Record the neutron level meter indication (Background).
(Step 8.1.9)

Standard: Recorded N-31 cps @ Step 8.1.9 in OST-001, Section 8.1

Examiner's NOTE: N-31 meter indication is ~ 40 cps.

Comment:

√ **Performance Step: 10** Place the OPERATION SELECTOR switch in the 60 CPS
position. (Step 8.1.10)

Standard: OPERATION SELECTOR switch for N-31 rotated to 60 CPS
position.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 11 Check the CHANNEL ON TEST indicator is illuminated.
(Step 8.1.11)

Standard: Verified CHANNEL ON TEST indicator for N-31 illuminated.

Examiner's NOTE:

Comment:

Performance Step: 12 Check the annunciator APP-005-D3, NIS CHANNEL TEST is
illuminated on the RTGB. (Step 8.1.12)

Standard: Verified APP-005-D3 illuminated (in alarm)

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 13 Record the CPS neutron level meter indication (50 to 75 plus background) (Step 8.1.13)

Standard: Operator determines count rate and records count rate.

Examiner's NOTE: N-31 meter indication is ~ 100 cps.

Comment:

Procedure NOTE: The drawer front panel indicator for HIGH FLUX AT SHUTDOWN will be illuminated when its bistable setpoint is exceeded. When neutron level is 10^5 CPS and above, the LEVEL TRIP bistable light will be illuminated and a First Out Annunciator will be received.

✓ **Performance Step: 14** Place the OPERATION SELECTOR switch in the 10^3 CPS position. (Step 8.1.14)

Standard: OPERATION SELECTOR switch for N-31 rotated to 10^3 CPS position.

Examiner's NOTE: Once 10^3 CPS position is selected, failure of BOTH Source Range high voltage power supplies will occur.

Comment:

PERFORMANCE INFORMATION

Performance Step: 15 APP-005-A1 SR DET LOSS OF DC will illuminate

Standard: Operator recognizes that high voltage has been lost to Both Source Ranges and Immediately opens the Reactor Trip Breakers.

Examiner's NOTE: IF BOTH Source Range Detectors are lost, THEN immediately open the Reactor Trip Breakers if any of the following conditions are met:

- a. The plant is in Mode 2 with Reactor Power less than the P-6 set point
- b. The plant is in Modes 3, 4, or 5 with the Rod Control System capable of rod withdrawal
- c. The plant is in Modes 3, 4, or 5 with one or more rods NOT fully inserted

(Meet Condition C to open the RTBs immediately)

Comment:

✓ **Performance Step: 16** Operator opens the reactor trip breakers by depressing either of the reactor trip pushbuttons.

Standard: Operator depresses one of the reactor trip pushbuttons and notes that the reactor trip breakers open.

Examiner's NOTE: Once the reactor trip breakers open, the operator will perform immediate actions of PATH -1. These actions are not necessary for proper completion of this task.

Comment:

PERFORMANCE INFORMATION

END OF TASK

Terminating Cue:

Operator identifies that both Source Range Channels are inoperable and opens the Reactor Trip Breakers.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM G

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:
- The Unit is in Mode 3 at normal operating temperature and normal operating pressure.
 - Preparations are in progress for a reactor startup.
 - The NIS racks have been energized for several hours.
 - OST-001, Steps 4.1 – 4.4 have been completed.

INITIATING CUE: The CRS has directed you to perform OST-001 on N-31.

Time Critical Task: NO

Validation Time: 5 minutes

SIMULATOR SETUP

1. Reset to IC-812
2. No SCN required.
3. APP-001-A4 marked up
4. OP-306 Section 8.4.1 Initial Conditions Steps 8.4.1.1.a and b completed.

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Procedure NOTE: CC-832, CC SURGE TANK MAKE-UP VALVE is a throttle valve and will remain in position when the OPEN-CLOSE switch is released. Care should be used in opening this valve as the Surge Tank level will rise rapidly if opened too far.

√ **Performance Step: 1** Verify one Primary Water Pump is RUNNING. (Step 8.4.1.2.a)

Standard: Candidate places the control switch for Primary Water Pump A or B to the START position.

Examiner's NOTE:

Comment:

√ **Performance Step: 2** At the RTGB, momentarily place the control switch for CC-832, MAKEUP in the open position. (Step 8.4.1.2.b)

Standard: Candidate places the control switch for valve CC-832 to the open position momentarily and observes that the valve has traveled partially open by the dual indication (RED/GREEN) of the valve position.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

- √ **Performance Step: 3** Verify a level increase on LI-614B, Comp Cool Surge Tank Level Indicator. (Step 8.4.1.2.c)

Standard: Candidate observes CCW Surge Tank level increase on LI-614B.

Examiner's NOTE: Candidate may use the ERFIS computer trend to observe the CCW Surge Tank level increase trend. (QP CCW)

Comment:

PERFORMANCE INFORMATION

Procedure NOTE: Holding CC-832 in the CLOSE position for one to two seconds after SHUT indication is received will ensure the valve is properly seated.

- ✓ **Performance Step: 4** When the desired level has been established (normally 45 to 55%), Then perform the following: (Step 8.4.1.2.d)
Stop the Primary Water Pump, and return switch position to AUTO
Close CC-832, MAKEUP

Standard: Candidate places the control switch for the Primary Water Pump that was started to the AUTO or OFF position and verifies that the pump has stopped.
Candidate places the control switch for valve CC-832 to the CLOSE position and holds the switch until the valve indicates closed while applying the above procedural note.

Examiner's NOTE: Either stopping the Primary Water Pump or closing valve CC-832 will secure the filling of the CCW Surge Tank.

Comment:

PERFORMANCE INFORMATION

Performance Step: 5 Verify the Surge Tank level is no longer increasing by observing LI-614B.

Standard: Candidate observes the CCW Surge Tank Level indicator LI-614B and/or ERFIS trend to ensure that level increase has been secured.

Examiner's NOTE:

Comment:

Performance Step: 6 Notify E&C of addition of water to CCW Surge Tank (SCR 89-050)

Standard: Candidate notifies E&C of the primary water addition to the CCW system.

Examiner's NOTE:

Examiner's CUE: Acknowledge as the E&C Technician that the notification has been received.

Comment:

PERFORMANCE INFORMATION

END OF TASK

Terminating Cue: **Refill of the CCW Surge Tank to normal operating level completes the task: Evaluation of this JPM is complete.**

STOP TIME: _____

Job Performance Measure No.: 2011 NRC JPM H

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result:	SAT	UNSAT
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Examiner's Signature: _____ Date: _____

INITIAL CONDITIONS:

- Plant is at 100% RTP.
- APP-001-A4, CCW SURGE TK HI/LO LVL has just been received.

INITIATING CUE:

The CRS has directed you to refill the CCW Surge Tank IAW OP-306 Section 8.4.1 to clear the tank level alarm.

Facility: HB ROBINSON Task No.: 01000101405

Task Title: Perform Local Actions to terminate Liquid Waste Release IAW AOP-005, Attachment 17 JPM No.: 2011 NRC JPM I

K/A Reference: 068 A2.04 (3.3/3.3)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: X Actual Performance:

Classroom Simulator Plant X

INSIDE THE RCA / ALTERNATE PATH**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 is at 100% RTP
- You are the Inside Auxiliary Operator.
- Liquid Waste Release from Waste Condensate Tank (WCT) D is in progress.
- WCT Pump C is in service.

Task Standard: Terminate liquid waste release through R-18 pathway.

Required Materials: AOP-005, Attachment 17

General References: AOP-005

Handouts: AOP-005, Attachment 17

Initiating Cue: AOP-005 has been entered due to a valid alarm on R-18, LIQUID WASTE DISPOSAL EFFLUENT. The CRS has directed you to complete AOP-005, Attachment 17.

Time Critical Task: NO

Validation Time: 10 minutes

SIMULATOR SETUP

N/A

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Performance Step: 1 Candidate obtains copy of AOP-005, Attachment 17, Process Monitor R-18 – Liquid Waste Disposal Effluent

Standard: Candidate locates copy of AOP-005.

Examiner's NOTE: **Procedure can be obtained from the Inside Auxiliary Operators office, Work Control Center, Control Room, or Computer.**

Examiner's CUE: **When candidate states where a copy of the procedure can be obtained, give him a copy of AOP-005, Attachment 17.**

Comment:

Performance Step: 2 Check Liquid Waste batch release – IN PROGRESS (Attachment 17, Step 1)

Standard: Candidate determines that a liquid waste release is in progress from the initial conditions.

Examiner's NOTE:

Comment:

PERFORMANCE INFORMATION

Performance Step: 3	At the WDBRP, Verify RCV-018, LIQUID WASTE RELEASE ISOLATION Valve – CLOSED (Attachment 17, Step 2)
Standard:	<p>Candidate determines that valve RCV-018 is open. Candidate simulates placing the control switch to the CLOSED position and checks the WDBRP valve indication or Local Valve stem indication.</p> <p>Candidate determines that valve RCV-018 is NOT closed and proceeds to Step 2 RNO.</p>
Examiner's NOTE:	
Examiner's CUE:	<p>Upon arrival at the WDBRP, valve RCV-018 indication is the RED (OPEN) light illuminated and the GREEN (CLOSED) light extinguished.</p> <p>After the candidate simulates attempting to close valve RCV-018 with the control switch, RCV-018 indication is RED (OPEN) light illuminated and the GREEN (CLOSED) light extinguished.</p>
Comment:	

PERFORMANCE INFORMATION

- √ **Performance Step: 4** Perform the following: (Attachment 17, Step 2.a RNO)
Manually close WD-1785, Liquid Waste Release Manual Isolation Valve
- Standard:** Candidate **simulates** closing WD-1785 by rotating the valve handwheel in the clockwise direction.
- Examiner's NOTE:** **Performance of this step meets the criteria for termination of the release.**
- Examiner's CUE:** Upon arrival at valve WD-1785, valve is unlocked and in the open position with the stem protruding from the valve handwheel.

After the candidate simulates closing valve WD-1785 by rotating the valve handwheel in the clockwise direction, inform him that the stem is inserted and the valve will no longer turn in the clockwise direction.
- Comment:**

PERFORMANCE INFORMATION

- ✓ **Performance Step: 5** Perform the following: (Attachment 17, Step 2.b RNO)
Verify Waste Condensate Pumps are STOPPED.

Standard: Candidate verifies that the WASTE COND TANK PUMP C and D are stopped by simulating depressing the GREEN (STOP) pump status lights on the AUXILIARY WASTE DISPOSAL PANEL.

Examiner's NOTE: GREEN and RED pushbuttons are the pump indication and control.

Examiner's CUE: Upon arrival at the AUXILIARY WASTE DISPOSAL PANEL, WCT Pump C has RED (RUN) indication and WCT Pump D has GREEN (STOP) indication illuminated.

Following the simulated depressing of the WCT Control Pushbuttons, inform the candidate that the GREEN (STOP) indication is illuminated for WCT Pumps C and D.

Comment:

- Performance Step: 6** Perform the following: (Attachment 17, Step 2.c RNO)
Verify Monitor Tank Pumps are STOPPED.

Standard: Candidate verifies that the Monitor Tank Pumps A and B are stopped by observing the pump status lights on the WDBRP.

Examiner's NOTE:

Examiner's CUE: Monitor Tank Pumps A and B GREEN (STOPPED) indication lights are illuminated.

Comment:

PERFORMANCE INFORMATION

Performance Step: 7 Perform the following: (Attachment 17, Step 2.d RNO)
Request RC personnel to perform a background radiation survey at R-18.

Standard: Candidate contacts either RC personnel directly or the Control Room to request a background survey.

Examiner's NOTE:

Examiner's CUE: **Respond as RC or the Control Room with acknowledgement of performing the requested background survey.**

Comment:

Performance Step: 8 Perform the following: (Attachment 17, Step 2.e RNO)
Contact maintenance to repair the failure of RCV-018 to close on high radiation alarm.

Standard: Candidate contacts either maintenance personnel directly or the Control Room to request repairs.

Examiner's NOTE:

Examiner's CUE: **Respond as Maintenance or the Control Room with acknowledgement of performing the requested repairs.**

Comment:

PERFORMANCE INFORMATION

Performance Step: 9

Perform the following: (Attachment 17, Step 2.f RNO)
Secure the applicable Liquid Waste release Line-up.

Standard:

Candidate should obtain the release paperwork (OP-705 Section 8.2.5) to secure the release line-up

Examiner's NOTE:**Examiner's CUE:**

Another operator has been assigned by the CRS to secure the release line-up.

Comment:**END OF TASK****Terminating Cue:**

Release pathway from R-18 has been secured: Evaluation of this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM 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 is at 100% RTP
- You are the Inside Auxiliary Operator.
- Liquid Waste Release from Waste Condensate Tank (WCT) D is in progress.
- WCT Pump C is in service.

INITIATING CUE:

AOP-005 has been entered due to a valid alarm on R-18, LIQUID WASTE DISPOSAL EFFLUENT. The CRS has directed you to complete AOP-005, Attachment 17.

Facility: HB ROBINSON Task No.: 04061101201

Task Title: Align Deepwell Pumps as Backup Supply to the AFW Pumps JPM No.: 2011 NRC JPM J

K/A Reference: 061 K4.01 (4.1/4.2)
061 G2.1.30 (4.4/4.0)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: X Actual Performance:
Classroom Simulator Plant X

START AT THE WORK CONTROL CENTER**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 is in Mode 3 following a reactor trip from 100% RTP
 - You are the Outside Auxiliary Operator.
 - The Condensate Storage Tank has ruptured and valve SW-118, SW EMERGENCY BACKUP TO AFW SUCTION, is seized in the CLOSED position.
 - B AND C Deepwell Pumps are operating.

Task Standard: Align deepwell pump discharge to the AFW Pumps suction.

Required Materials: OP-402 Section 8.4.2

General References: OP-402 Section 8.4.2

Handouts: OP-402 Section 8.4.2

Initiating Cue: The CRS has directed you to align Deepwell Water to supply the AFW Pump suction header IAW OP-402 Section 8.4.2, starting at Step 8.4.2.2.c.

Time Critical Task: NO

Validation Time: 7 minutes

SIMULATOR SETUP

N/A

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

- √ **Performance Step: 1** PERFORM the following valve lineup: (Step 8.4.2.2.c.1)
Unlock AND close AFW-1, AFW PUMPS SUCTION FROM CST.
- Standard:** Candidate **simulates** unlocking and closing valve AFW-1 by rotating the valve handwheel in the clockwise direction and observing the stem lowering into the operator until the valve no longer rotates in the clockwise direction.
- Examiner's NOTE:** **Valves AFW-1 and AFW-104 are locked together with a common chain.**
- Examiner's CUE:** **Report that valve AFW-1 valve stem is inserted and the valve handwheel has come to a hard stop.**
- Comment:**
-
- √ **Performance Step: 2** Unlock and close AFW-104, AFW PUMPS SUCTION FROM CST. (Step 8.4.2.2.c.2)
- Standard:** Candidate **simulates** unlocking and closing valve AFW-104 by rotating the valve handwheel in the clockwise direction and observing the stem lowering into the operator until the valve no longer rotates in the clockwise direction.
- Examiner's NOTE:**
- Examiner's CUE:** **Report that valve AFW-104 valve stem is inserted and the valve handwheel has come to a hard stop.**
- Comment:**

PERFORMANCE INFORMATION

- ✓ **Performance Step: 3** Close DW-20, AFW SUCTION FROM DEEPWELL BACKUP TELL-TALE DRAIN (Step 8.4.2.2.c.3)
- Standard:** Candidate **simulates** closing valve DW-20 by rotating the valve handwheel in the clockwise direction and observing the stem lowering into the operator until the valve no longer rotates in the clockwise direction.
- Examiner's NOTE:**
- Examiner's CUE:** Report that valve DW-20 valve stem is inserted and the valve handwheel has come to a hard stop.
- Comment:**
-
- ✓ **Performance Step: 4** Unlock and open DW-19, DEEPWELL EMERGENCY BACKUP TO AFW SUCTION. (Step 8.4.2.2.c.4)
- Standard:** Candidate **simulates** unlocking and opening valve DW-19 by rotating the valve handwheel in the counterclockwise direction and observing the stem rising from the operator until the valve no longer rotates in the counterclockwise direction.
- Examiner's NOTE:** Valves DW-19 and DW-21 are locked together with a common chain.
When valve is opened, it should not be left on the valve's backseat.
- Examiner's CUE:** Report that valve DW-19 valve stem is extended from the handwheel and the valve handwheel has come to a hard stop.
- Comment:**

PERFORMANCE INFORMATION

- ✓ **Performance Step: 5** Unlock and open DW-21, AFW SUCTION FROM DEEPWELL EMERGENCY BACKUP. (Step 8.4.2.2.c.5)

Standard: Candidate **simulates** unlocking and opening valve DW-21 by rotating the valve handwheel in the counterclockwise direction and observing the stem rising from the operator until the valve no longer rotates in the counterclockwise direction.

Examiner's NOTE: When valve is opened, it should not be left on the valve's backseat.

Examiner's CUE: Report that valve DW-21 valve stem is extended from the handwheel and the valve handwheel has come to a hard stop.

Comment:

- Performance Step: 6** Close DW-22, WELL WATER HOSE CONNECTION TREE INLET (Step 8.4.2.2.c.6)

Standard: Candidate **simulates** closing valve DW-22 by rotating the valve handwheel in the clockwise direction and observing the stem lowering into the operator until the valve no longer rotates in the clockwise direction.

Examiner's NOTE:

Examiner's CUE: Report that valve DW-22 valve stem is inserted and the valve handwheel has come to a hard stop.

Comment:

PERFORMANCE INFORMATION

Performance Step: 7 Close DW-27, WELL WATER HOSE CONNECTION TREE BYPASS (Step 8.4.2.2.c.7)

Standard: Candidate **simulates** closing valve DW-27 by rotating the valve handwheel in the clockwise direction and observing the stem lowering into the operator until the valve no longer rotates in the clockwise direction.

Examiner's NOTE:

Examiner's CUE: Report that valve DW-27 valve stem is inserted and the valve handwheel has come to a hard stop.

Comment:

END OF TASK

Terminating Cue: Deepwell water supply has been aligned to the suction header of the AFW Pumps: Evaluation of this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM J

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 is in Mode 3 following a reactor trip from 100% RTP
- You are the Outside Auxiliary Operator.
- The Condensate Storage Tank has ruptured and valve SW-118, SW EMERGENCY BACKUP TO AFW SUCTION, is seized in the CLOSED position.
- B AND C Deepwell Pumps are operating.

INITIATING CUE:

The CRS has directed you to align Deepwell Water to supply the AFW Pump suction header IAW OP-402 Section 8.4.2, starting at Step 8.4.2.2.c.

Facility: HB ROBINSON Task No.: 04000100105

Task Title: Perform EPP-9 Attachment 1 for
Local Cold Leg Recirculation
Alignment JPM No.: 2011 NRC JPM K

K/A Reference: 006 K4.08 (3.4/3.6)

Examinee: NRC Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance: X Actual Performance:
Classroom Simulator Plant X

INSIDE THE RCA

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 in Mode 3 following a Large Break LOCA.
 - 480V Bus E-2 is de-energized with troubleshooting of the cause in progress.
 - The RWST level has lowered to less than 27%.
 - The operating crew has implemented EPP-9, Transfer to Cold Leg Recirculation.
 - You are the Inside Auxiliary Operator.

Task Standard: Perform local alignment to support EPP-9 implementation.

Required Materials: EPP-9, Attachment 1
Controlled Keys 174 and 175

General References: EPP-9, Attachment 1

Handouts: EPP-9, Attachment 1

Initiating Cue: The CRS has directed you to perform EPP-9, Attachment 1.
2011 NRC JPM K NUREG 1021, Revision 9, Supplement 1

Time Critical Task: NO

Validation Time: 10 minutes

SIMULATOR SETUP

N/A

PERFORMANCE INFORMATION

(Denote Critical Steps with a check mark)

START TIME: _____

Procedure CAUTION: **Normal Security and Radiation Protection Procedures are not applicable during the performance of this Attachment.**

Performance Step: 1 The critical steps of this attachment should be performed as rapidly as possible. (Attachment 1, Step 1)

Standard: Candidate reads and understands step.

Examiner's NOTE:

Comment:

Performance Step: 2 Obtain the following equipment as required: (Attachment 1, Step 2)
Two way radio or cell phone
Flashlight

Standard: Candidate obtains the stated equipment.

Examiner's NOTE:

Examiner's CUE: **Cell phone and flashlight have been obtained.**

Comment:

PERFORMANCE INFORMATION

Procedure NOTE: SI-856A and B are located between SI Pumps B and C.
SI-856A and B are rotated clockwise to close.

✓ **Performance Step: 3** Perform the following valve lineup in the SI Pump Room between SI Pumps B and C: (Attachment 1, Step 3)
Verify SI-856A, SI PUMP RECIRC Valve – HANDWHEEL CLOSED
Verify SI-856B, SI PUMP RECIRC Valve – HANDWHEEL CLOSED

Standard: Candidate verifies the handwheel closed by **simulating** rotating the valve handwheel in the clockwise direction until the handwheel will no longer turn.

Examiner's NOTE: Valves SI-856A and B are in series and requires only 1 of the valves to be closed to complete the task. The valves have been closed by the RTGB control switches and this step provides a mechanical block on the valves to ensure that the valves are maintained closed (fails open on loss of instrument air).

Examiner's CUE: Valves SI-856A and B are closed with the valve handwheel blocking the valves closed.

Comment:

PERFORMANCE INFORMATION

✓ **Performance Step: 4** If an electrical train failure has occurred (E-1/E-2 failure), Then manually align Spray Pump Discharge valves are follows:
(Attachment 1, Step 4.b)

If a Train B failure has occurred, Then close Spray Pump "B" valves:

SI-880C, CONTAINMENT SPRAY PUMP "B" DISCHARGE

SI-880D, CONTAINMENT SPRAY PUMP "B" DISCHARGE

Standard: Candidate determines that 480V Bus E-2 is de-energized and manually closes valves SI-880C and 880D by engaging the manual declutching lever on the motor operated valve and rotating the valve handwheel in the clockwise direction, observing the stem lowering until the valve handwheel will no longer turn.

Examiner's NOTE: 480V Bus E-2 (Train B) was given in the initial conditions as de-energized, thus the valves for CV Spray Pump B will have to be manually closed.

Examiner's CUE: Valves SI-880C and 880D declutching levers have been engaged and valve handwheels have come to a hard stop.

Comment:

PERFORMANCE INFORMATION

Procedure NOTE:	PS-996 is located at the South end on the West wall.
Performance Step: 5	1. In Pipe Alley, open PS-996, RHR/PASS ISOLATION. (Attachment 1, Step 5)
Standard:	Candidate should be stopped prior to entry into the Pipe Alley for radiation dose considerations.
Examiner's NOTE:	
Examiner's CUE:	Another operator that entered the Pipe Alley has already opened valve PS-996.
Comment:	
Performance Step: 6	Notify the Control Room that the Critical Steps of Attachment 1 are complete. (Attachment 1, Step 6)
Standard:	Candidate notifies the Control Room that the critical steps of Attachment 1 are completed.
Examiner's NOTE:	
Examiner's CUE:	Acknowledge the report as the Control Room that Attachment 1 critical steps are complete.
Comment:	

PERFORMANCE INFORMATION

Procedure CAUTION: The Control Room will be initiating CV Sump recirculation. This may result in high radiation in the Auxiliary Building.

Procedure NOTE: The following equipment will be required to perform the steps below:

Controlled Keys 174 and 175

Fuse Pullers

✓ **Performance Step: 7** Isolate the RHR Pump suction as follows: (Attachment 1, Step 7.a)

At MCC-5 (CMPT – 6J) :

Close the breaker for RHR-752A, RHR PUMP A SUCTION.

Insert Key #174 in control switch for RHR-752A and close the valve.

Standard: Candidate locates breaker on MCC-5 CMPT 6J and **simulates** closing the breaker by placing the breaker handle in the UP (ON) position.

Candidate **simulates** inserting Key #174 into the control switch and placing the switch to the close position, observing the GREEN closed indication illuminated.

Examiner's NOTE: Valve RHR-752A has valve position indication when the valve breaker is open or closed.

Examiner's CUE: Upon arrival at the breaker cubicle, valve RHR-752A breaker handle is in the DOWN (OFF) position and the RED (OPEN) indication is illuminated.

Breaker handle is in the UP (ON) position.

Key has been inserted, control switch placed in the close position and valve RHR-752A GREEN (CLOSED) indication is illuminated.

Comment:

PERFORMANCE INFORMATION

- Performance Step: 8** Isolate the RHR Pump suction as follows: (Attachment 1, Step 7.b)
At MCC-6 (CMPT – 6J) :
Close the breaker for RHR-752B, RHR PUMP B SUCTION.
Insert Key #175 in control switch for RHR-752B and close the valve.
- Standard:** Candidate should recognize that 480V Bus E-2 is de-energized from the initial conditions, thus MCC-6 is de-energized.
- Examiner's NOTE:** 480V Bus E-2 feeds MCC-6. There is no power available to operate valve RHR-752B.
- Examiner's CUE:** Another operator has been assigned by the CRS to complete the Attachment 1 activities that are outside of the Radiation Controlled Area.
- Comment:**

END OF TASK

- Terminating Cue:** After Attachment 1 activities that are within the RCA are complete: Evaluation of this JPM is complete.

STOP TIME: _____

VERIFICATION OF COMPLETION

Job Performance Measure No.: 2011 NRC JPM K

Examinee's Name:

Date Performed:

Facility Evaluator:

Number of Attempts:

Time to Complete:

Question Documentation:

Question:

Response:

Result: SAT _____ UNSAT _____

Examiner's Signature: _____ Date: _____