Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 245-01-01-005

Task Title: Connect the Turbine Generator to the Grid

JPM No: 1

K/A Reference: 245000 A402 3.1/2.9

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ✓

Classroom _____

Simulator ✓

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 conditions are as follows:

- Plant startup is in progress.
- Turbine speed is 1800 rpm and being controlled by the speed load changer.
- Currently on step 135a of PNPS 2.1.1.
- A Turbine Generator hot startup is being performed.

Task Standard: The Turbine Generator is synced to the grid by correctly performing the steps of the procedure. The procedure shall be followed without failure of any critical tasks. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: Marked up copy of procedure PNPS 2.1.1, Startup From Shutdown.

General References: PNPS 2.1.1, Rev. 119

Initiating Cue: "[Operator's name], sync the Turbine Generator on the grid via ACB 105 per PNPS 2.1.1. Inform me when you have closed in the second ACB".

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the note contained within step 135a to ensure the voltage regulator is full lower position prior to applying field.

> **Note**
>
> Ensure voltage regulator is adjusted to full lower position prior to applying field. If the lower stop amber light does not illuminate, have Production Maintenance verify locally the regulator is adjusted to the full lower position.

Standard: Manual Voltage Adjuster position verified (Lower stop amber light is on).

Comment:

__✓__ **Performance Step 2:** Apply Exciter field by closing the Exciter Field Breaker.

Standard: Exciter field applied by pushing in the control switch and taking it to the CLOSE position, Exciter field breaker has red light on, green light off.

Comment:

__✓__ **Performance Step 3:** Apply Generator field by closing the Main Generator Field Breaker.

Standard: Generator field applied by pushing in the control switch and taking it to the CLOSE position, Main Generator field breaker has red light on, green light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 4:** Gradually raise the Manual Voltage Adjuster on Panel C3 and slowly build up the Generator voltage to 23kv.

Standard: Generator voltage is 23kV (+/- .2kV).

Comment:

_____ **Performance Step 5:** Verify alarm "Main XFMR Undervoltage," (C3L-E8) clears.

Standard: Alarm "Main XFMR Undervoltage" is clear.

Comment:

_____ **Performance Step 6:** Send an Operator to Main Transformer to verify that at least one Cooling Group is operating.

Standard: An Operator is sent to the Main Transformer to verify at least one Cooling Group is operating.

Comment: IF Operator: If asked as the outside operator to verify at least one cooling group is operating, report that one cooling group is operating.

_____ **Performance Step 7:** Test the manual voltage controls by turning control switch to "LOWER" and observe the response on the GENERATOR VOLTAGE meter.

Standard: The manual voltage control switch is taken to "LOWER" and a response is verified on the Generator Voltage meter.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 8:** Readjust the MANUAL VOLTAGE ADJUSTER to approximately 23 kV on GENERATOR VOLTAGE meter.

Standard: Generator voltage is adjusted to 23kV (+/-.2kV).

Comment:

_____ **Performance Step 9:** Test the operability of the auto voltage regulator. Raise, then lower the Main Generator VOLTAGE REGULATOR SETPOINT ADJUSTER C/S and produce a buck-boost indication on the VOLTAGE REGULATOR TRANSFER VOLTMETER.

Standard: The VOLTAGE REGULATOR SETPOINT ADJUSTER C/S is raised and then lowered and a buck-boost indication is produced on the VOLTAGE REGULATOR TRANSFER VOLTMETER.

Comment:

_____ **Performance Step 10:** Readjust the Main Generator VOLTAGE REGULATOR SETPOINT ADJUSTER C/S until a null-zero reading shows on the VOLTAGE REGULATOR TRANSFER VOLTMETER.

Standard: A null-zero reading shows on the VOLTAGE REGULATOR TRANSFER VOLTMETER.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 11:** Place the VOLTAGE REGULATOR TRANSFER SWITCH to the "AUTO" position.

Standard: VOLTAGE REGULATOR TRANSFER SWITCH is in "AUTO."

Comment:

✓ **Performance Step 12:** Prepare to synchronize Generator in accordance with the following: Turn the AUTO SYNC SELECTOR SWITCH on Panel C3 from the "OFF" position to position "ACB-104" or position "ACB-105 for the selected ACB to be used for synchronizing.

Standard: The AUTO SYNC SELECTOR SWITCH on Panel C3 is taken from the "OFF" position to position "ACB-105".

Comment: If asked which breaker was used last to sync to the grid, cue the candidate that, "ACB-104 was used last to sync to the grid".

✓ **Performance Step 13:** Turn the ACB-105 sync switch to "ON" position.

Standard: The ACB-105 SYNC switch is turned to the "ON" position.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 14:** Initially adjust the Turbine Generator speed to produce a slow rotation in either direction on the MAIN GENERATOR SYNCHROSCOPE. Use the SPEED/LOAD Changer raise and lower control switch on C3.

Standard: The SPEED/LOAD Changer is used to produce a slow rotation in either direction on the MAIN GENERATOR SYNCHROSCOPE.

Comment:

_____ **Performance Step 15:** Initially adjust the Generator voltage to the 345kV system by matching the INCOMING VOLTAGE Meter indication to the RUNNING VOLTAGE Meter using the AUTO VOLTAGE ADJUSTER raise and lower control switch.

Standard: INCOMING VOLTAGE Meter indication is matched to the RUNNING VOLTAGE Meter (+/- 200 volts).

Comment:

_____ **Performance Step 16:** Repeat voltage and speed adjustments as necessary in order to match INCOMING VOLTAGE and RUNNING VOLTAGE indications while at the same time producing a slow clockwise rotation on the MAIN GENERATOR SYNCHROSCOPE on Panel C3.

Standard: INCOMING VOLTAGE and RUNNING VOLTAGE are matched (+/- 200 volts) and there is a slow rotation in the "FAST" direction on the MAIN GENERATOR SYNCHROSCOPE on Panel C3.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 17:** Recheck Generator incoming voltage and Generator speed. Readjust as necessary prior to closing ACB.

Standard: Generator incoming voltage and Generator speed are checked and adjusted as necessary prior to closing ACB.

Comment:

_____ **Performance Step 18:** Operator reviews the note following step 137(f).

Note

With the synchroscope indicating approximately 5 degrees before 12 o'clock position, and the INCOMING and RUNNING VOLTAGES equal, the synchronizer should permit closure of the selected ACB.

Standard: Operator refers to note following step 137(f)

Comment:

✓ **Performance Step 19:** Turn the selected ACB control switch to CLOSE at 5 degrees before the 12 o'clock position on the MAIN GENERATOR SYNCHROSCOPE.

Standard: The ACB-105 breaker closes and has red light on, green light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 20:** Operator records time in procedure 2.1.1.

Standard: Time recorded in 2.1.1.

Comment:

_____ **Performance Step 21:** Turn to OFF position either ACB-104 Synch Switch or ACB-105 Synch Switch, whichever has just been synchronized.

Standard: ACB-105 Synch Switch taken to OFF.

Comment:

_____ **Performance Step 22:** Pick up some load immediately after closing-in. Use the SPEED/LOAD CHANGER and bring the unit to its final load.
Cold Startup - 3% -25 MW
Warm Startup - 5% -34 MW
Hot Startup - 15% -100 MW

Standard: The MW meter reads 100 MW (+/- 20 MW).

Comment:

_____ **Performance Step 23:** Place the AUTO SYNC SELECTOR SWITCH on Panel C3 to "OFF".

Standard: The AUTO SYNC SELECTOR SWITCH on Panel C3 is in the "OFF" position.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 24:** At Panel C3 turn ACB-104 Sync Switch to "ON".

Standard: ACB-104 Sync Switch is in the "ON" on position.

Comment:

✓ **Performance Step 25:** Close in the remaining ACB.

Standard: The ACB-104 breaker closes and has red light on, green light off.

Comment:

____ **Performance Step 26:** Turn to off position either ACB-104 Synch Switch or ACB-105 Synch Switch, whichever has just been synchronized.

Standard: ACB-104 Synch Switch taken to OFF.

Comment:

Terminating Cue: When the candidate has taken ACB-104 sync switch to OFF, inform him/her that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 248-01-01-011

Task Title: Transfer from MPR to EPR

JPM No: 2

K/A Reference: 241000 A4.02 4.1/4.1

Position: RO/SRO

Examinee:

NRC Examiner:

Date:

Method of testing:

Simulated Performance

Actual Performance ✓

Classroom

Simulator ✓

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 conditions are as follows:

- The Reactor is at 100% rated power.
- Due to maintenance on the EPR, control was transferred to the MPR.
- The maintenance has been corrected, and it is desired to place EPR back in operation.
- The EPR has been energized for 10 minutes.

Task Standard: Transfer from MPR to EPR per PNPS 2.2.99, Section 7.4.4. The procedure shall be followed without failure of critical steps. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.2.99, Rev. 32

Initiating Cue: "[Operator's name], transfer from MPR to EPR per PNPS 2.2.99, Section 7.4.4.

Time Critical Task: NO

Validation Time: 5 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews PNPS 2.2.99, Section 7.4.4.

Standard: PNPS 2.2.99, Section 7.4.4 reviewed.

Comment:

_____ **Performance Step 2:** Operator reviews the following note: EPR initially energized will ramp to maximum pressure prior to placing EPR in control and energizing the operators setpoint control switch. (EPR setpoint) This will take approximately 5 minutes.

Standard: Note is reviewed.

Comment: EPR should be fully ramped at this time.

_____ **Performance Step 3:** Operator reviews caution to adjust pressure regulators slowly to avoid pressure transients.

Standard: Operator makes pressure adjustments in a slow and controlled manner.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 4:** Place/verify EPR power switch to "NORM" at Panel C2.

Standard: EPR switch in "NORM".

Comment:

_____ **Performance Step 5:** Wait 1 minute from the time EPR setpoint indicator ZI- 3013 reaches its maximum setpoint of 1010 psig.

Standard: Operator waits 1 minute after verifying ZI-3013 indicates 1010 psig.

Comment: Examiner may cue the candidate that, "1 minute has elapsed".

_____ **Performance Step 6:** Operator reviews note prior to Step 3: Once the EPR takes control, the red pressure control light over the EPR setpoint switch on panel C2 will come on and the EPR control position indicator ZI-3014 will rapidly increase to the setpoint indicating EPR has control. The red pressure control light will come on. This rapid increase is an instrument response and will not result in a pressure transient.

Standard: Operator reviews note.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 7:** RESTORE the EPR to control slowly by placing the EPR SETPT C/S to "LOWER" until the EPR takes control from the MPR (red PRESS CONTROL light above EPR SETPT C/S comes on).

Standard: EPR SETPT C/S taken to lower until red pressure control light above EPR SETPT C/S comes on.

Comment:

✓ **Performance Step 8:** ADJUST MPR SETPT C/S so that MPR CONTROL POSITION Indicator ZI-3020 is set approximately 11 to 13% lower than EPR CONTROL POSITION Indicator ZI-3014.

Standard: ZI-3020 indicates 11 to 13% lower than ZI-3014.

Comment:

____ **Performance Step 9:** Verify EPR SETPT set to maintain PI-640-25A, REACTOR PRESSURE for CH A, and PI-640-25B, REACTOR PRESSURE for CH B, on Panel C905 at less than or equal to 1035 psig.

Standard: PI-640-25A/B indicates less than or equal to 1035 psig.

Comment:

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

Terminating Cue: When operator has adjusted EPR setpoint to maintain reactor pressure on PI-640 25A(B), inform him/her that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 223-04-01-001

Task Title: Manually Start SGBT and Vent the Torus

JPM No: 3

K/A Reference: 261000 A404 3.3/3.4

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ✓

Classroom _____

Simulator ✓ 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 conditions are as follows:

- The plant is at power with the mode switch in "RUN."
- It is desired to vent the torus to raise DW to torus D/P.

Task Standard: The torus is initially aligned correctly for the torus venting evolution. The operator recognizes the alarms/indications associated with a leak in the drywell and takes action to secure the torus venting lineup. The primary containment atmosphere control and standby gas treatment systems shall be operated in accordance with all applicable system precautions and limitations. The system procedure shall be followed without failure of critical tasks. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.2.70, Rev. 75

Initiating Cue: "[Operator's name], vent the torus using the 'B' train of Standby Gas Treatment in accordance with PNPS 2.2.70, Section 7.3 and 7.3.3. Inform me when the task is complete."

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews PNPS 2.2.70, Section 7.3 and Section 7.3.3.

Standard: PNPS 2.2.70, Section 7.3 and 7.3.3 reviewed.

Comment:

_____ **Performance Step 2:** Refers to Technical Specifications 3.7.A.1.k.

Standard: Operator references T.S. Section 3.7.A.1.k.

NOTE: T.S. 3.7.A.1.k – The differential pressure may be reduced to less than 1.17 psid for a maximum of four (4) hours for maintenance activities on the differential pressure control system and during required operability testing of the HPCI system, the relief valves, the RCIC system and the drywell suppression chamber vacuum breakers.

Comment:

_____ **Performance Step 3:** Operator references Section 7.10 of PNPS 2.2.70 to determine conditions which may indicate a leak in containment and require securing venting.

Standard: Operator references the following "NOTE" of Section 7.10:

The following alarms may be indicative of a reactor coolant leak inside containment:

- "C19A/B TROUBLE" (C904LC-B3)
- "DRYWELL EQUIPMENT/FLOOR DRAIN SUMP HIGH FLOW" on Panel C20
- Any drywell cooler leaking alarm on Panel C7L

The purpose of this section is to specify the actions required when indication of a reactor coolant leak exists.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 4:** Open "AO-5041A, Torus Normal Exhaust Isolation Valve".

Standard: AO-5041A has red light on, green light off.

Comment:

✓ **Performance Step 5:** Open "AO-5041B, Torus Normal Exhaust Isolation Valve".

Standard: AO-5041B has red light on, green light off.

Comment:

✓ **Performance Step 6:** Open "AO-N-98, Contaminated Exhaust to SGTS Inlet Plenum".

Standard: AO-N-98 has red light on, green light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 7:** Open "AO-N-101, Refuel Floor Exhaust to SGTS Inlet Plenum".

Standard: AO-N-101 has red light on, green light off.

Comment:

✓ **Performance Step 8:** Open "AO-N-112, Train 'B' Outlet Damper".

Standard: AO-N-112 has red light on, green light off.

Comment:

_____ **Performance Step 9:** Verify "VEX-210A, Standby Gas Fan 'A', control switch in "AUTO" position.

Standard: VEX-210A control switch in "AUTO".

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 10:** Open "AO-N-106, Train 'B' Inlet Damper" and Verify VEX-210B starts.

Standard: Damper AO-N-106 has red light on, green light off. Fan VEX-210B has red light on, green light off.

Comment:

_____ **Performance Step 11:** Operator proceeds to the main control room to report start time to CRS for recording in the CRS log.

Standard: Operator reports VEX-210B start time to CRS.

Comment: IF Operator: When the operator goes to report the start time, insert the malfunction that brings in the alarms.

_____ **Performance Step 12:** Acknowledge annunciators C7L-C5 & C6 and C904LC-B3.

Standard: Operator references ARP for alarms received after pressing alarm acknowledge PB on C7 and C904.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 13:** Report receipt of annunciators to CRS.

Standard: Operator reports alarming conditions and ARP actions for C904LC-B3 and C7L-C5 & C6.

Comment:

_____ **Performance Step 14:** Exit procedure 2.2.70, Section 7.3.3 and enters Section 7.10.

Standard: Operator exits Section 7.3.3 and enters Section 7.10.

Comment:

_____ **Performance Step 15:** Verify "SV-5030A, N_2 Makeup Supply Block Valve" CLOSED.

Standard: SV-5030A has green light on, red light off.

Comment:

_____ **Performance Step 16:** Verify "AO-5035A, Drywell Purge Supply Isolation Valve" closed.

Standard: AO-5035A has green light on, red light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 17:** Verify "AO-5036A, Torus Purge Supply Isolation Valve" is closed.

Standard: AO-5036A has green light on, red light off.

Comment:

✓ **Performance Step 18:** Rotate "AO-5041A, Torus Normal Exhaust Isolation Valve", control switch to the "CLOSE" position.

Standard: AO-5041A has green light on, red light off.

Comment:

✓ **Performance Step 19:** Rotate "AO-5041B, Torus Normal Exhaust Isolation Valve", control switch to the "CLOSE" position.

Standard: AO-5041B green light on, red light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 20:** Verify "AO-5042A, Torus Purge Exhaust Isolation Valve", is closed.

Standard: AO-5042A has green light on, red light off.

Comment:

_____ **Performance Step 21:** Verify "AO-5042B, Torus Purge Exhaust Isolation Valve" is closed.

Standard: AO-5042B has green light on, red light off.

Comment:

_____ **Performance Step 22:** Verify "AO-5043A, Drywell Normal Exhaust Isolation Valve", is closed.

Standard: AO-5043A has green light on, red light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 23:** Verify "AO-5043B, Drywell Normal Exhaust Isolation Valve", is closed.

Standard: AO-5043B has green light on, red light off.

Comment:

_____ **Performance Step 24:** Verify "AO-5044A, Drywell Purge Exhaust Isolation Valve", is closed.

Standard: AO-5044A has green light on, red light off.

Comment:

_____ **Performance Step 25:** Verify "AO-5044B, Drywell Purge Exhaust Isolation Valve", is closed.

Standard: AO-5044B has green light on, red light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 26:** Rotate "AO-N-106, Train 'B' Inlet Damper", control switch to the "AUTO" position.

Standard: AO-N-106 has green light on, red light off.

Comment:

_____ **Performance Step 27:** Verify "AO-N-99, Train 'A' Inlet Damper", control switch in the "AUTO" position.

Standard: AO-N-99 has green light on, red light off.

Comment:

_____ **Performance Step 28:** Verify "AO-N-108, Train 'A' Outlet Damper", control switch in the "AUTO" position.

Standard: AO-N-108 has green light on, red light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 29:** Rotate "AO-N-112, Train 'B' Outlet Damper", control switch to the "AUTO" position.

Standard: AO-N-112 has green light on, red light off.

Comment: Procedurally, AO-N-98, Contaminated Exhaust to SGTS Inlet Plenum, and AO-N-101, Refuel Floor Exhaust to SGTS Inlet Plenum, are not required to be closed. However, if the candidate asks permission to close these valves give direction to do so.

Terminating Cue: When 'B' SBGT has been started and subsequently secured due to the drywell leak, the candidate should inform the examiner that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 215-02-01-013

Task Title: Perform an APRM Setdown Functional Test

JPM No: 4

K/A Reference: 215005 A4.06 3.6/3.8

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance: ✓

Classroom _____

Simulator ✓

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 conditions are as follows:

- The mode switch is in the "REFUEL" position.
- All control rods are inserted.
- The weekly APRM Setdown Functional needs to be performed. The PNPS 8.M.1-3.1 has been completed up to step [3] (a) for B-B1.

Task Standard: Perform APRM Setdown Functional test on the 'B' APRM. There shall be no failure of critical elements. Critical steps must be performed in order. Other steps may be performed out of sequence.

Required Materials: Copy of 8.M.1-3.1, completed through step [3] (a) for B-B1.

General References: PNPS 8.M.1-3.1, Rev. 26

Initiating Cue: "[Operator's name], you are to continue with the APRM Setdown Functional test IAW 8.M.1-3.1, Attachment 1. 'A' APRM is complete. 'B' APRM is the next APRM to be tested. An Operator is stationed at C905. An I&C tech is available. Inform me when the test is complete".

Time Critical Task: NO

Validation Time: 20 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the applicable sections of the procedure.

Standard: Operator reviews the applicable sections of the procedure.

Comment:

✓ **Performance Step 2:** Set the selected APRM channel to be tested in BYPASS and verify that the BYPASS indication lights at Panels C905 and C937 are ON.

Standard: Operator calls the RO and directs him/her to place APRM 'B' in the bypass position and then asks him/her to verify the BYPASS light on at C905. Verifies the bypass light on at C937.

Comment:

_____ **Performance Step 3:** Verify that the SETDOWN white light for the selected APRM channel at Panel C937 is ON and CRD Scram Solenoid Group 1-4 lights at Panels C915 and Panel C917 are ON.

Standard: SETDOWN white light for 'B' APRM and CRD Scram Solenoid Group 1-4 lights on Panels C915 and C917 are verified ON.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 4:** Position meter function switch to "COUNT".

Standard: 'B' APRM function switch is in the "COUNT" position.

Comment:

_____ **Performance Step 5:** Verify that all LPRM card switches are in the "OP" position.

Standard: All LPRM card switches are in the "OP" position.

Comment:

✓ **Performance Step 6:** Bypass the number of required LPRM card switches in accordance with the APRM channel being tested.

Standard: 4 LPRM card switches are in the "BY" position.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 7:** Verify local INOP light is ON and APRM meter indicates correct number of operable LPRM inputs (5% per LPRM).

Standard: INOP light is ON and meter reads 50%.

Comment:

✓ **Performance Step 8:** Return previously selected LPRM card switches to the "OPERATE" position and actuate the trip reset switch. Verify the local INOP light is OFF.

Standard: All LPRM card switches are in the "OP" position and the local INOP light is OFF.

Comment:

✓ **Performance Step 9:** Place the APRM mode switch in the "STANDBY" position. Verify the local INOP light is ON.

Standard: APRM mode switch in "STANDBY" and local INOP light ON.

Comment:

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

✓ **Performance Step 10:** Place the APRM mode switch in the "TEST POWER" position. Reset trips. Verify local alarm lights are clear. (Power potentiometer may need to be adjusted to clear local alarms).

Standard: APRM mode switch is in the "TEST POWER" position and local alarms are clear.

Comment:

✓ **Performance Step 11:** Position the meter function switch to the "AVERAGE" Position.

Standard: Meter function switch is in the "AVERAGE" Position

Comment:

✓ **Performance Step 12:** Adjust the POWER potentiometer until the HIGH light comes ON indicating the value of power signal that will initiate a Rod Block function.

Standard: HIGH light is ON.

Comment:

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

_____ **Performance Step 13:** Record this "As-Found" value of power. The setpoint for the HIGH or ROD BLOCK function is 11 (10.5 to 11.5) percent power.

Standard: "As-Found" value of 11 (+/- .5) is recorded on Attachment 1.

Comment:

✓ **Performance Step 14:** Adjust the POWER potentiometer until the HIGH HIGH light comes on indicating the value of power signal that will initiate a Scram function.

Standard: Hi-Hi light is ON.

Comment:

_____ **Performance Step 15:** Record this "As-Found" value of power. The setpoint for the HIGH HIGH or Scram function is 13 (12.5 to 13.5) percent power.

Standard: As-Found' value of 13 (+/- .5) is recorded on Attachment 1.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 16:** Lower the POWER adjustment to approximately 5 percent power.

Standard: Meter reading is approximately 5%.

Comment: Reading cannot be below 3% and must be low enough for the trips to be reset.

_____ **Performance Step 17:** Reset the trip functions.

Standard: All trips are clear. (Alarm lights off)

Comment:

__✓__ **Performance Step 18:** Lower the POWER level adjustment until the local DNSCL light comes on indicating the value of power signal that will initiate a downscale function.

Standard: DNSCL light is ON.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 19:** Record this "As-Found" value of power. The setpoint for the downscale is 3 (3.0 to 4.0) percent power.

Standard: "As-Found" value of 3 (+ 1.0, -0.0) is recorded on Attachment 1.

Comment:

_____ **Performance Step 20:** Raise the POWER level adjustment to approximately 5 percent power.

Standard: Meter reading is approximately 5%.

Comment: Reading cannot be below 3% and must be high enough for the trips to be reset.

_____ **Performance Step 21:** Reset the APRM channel trip functions and verify local alarms are CLEAR.

Standard: Local alarms are clear (Alarm lights off)

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 22:** Place the APRM mode switch in the "OPERATE" position.

Standard: APRM mode switch is in the "OPERATE" position.

Comment:

✓ **Performance Step 23:** Remove bypass from the tested channel by placing channel bypass switch in "NEUTRAL" position (Panel C905)

Standard: Operator calls the RO and direct him/her to take APRM 'B' out of bypass and then asks him/her to verify the BYPASS light off at C905. Verifies the bypass light off at C937.

Comment:

Terminating Cue: When the APRM switch is placed in the Normal position and the lights verified, the examiner shall inform the candidate that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 204-01-01-004

Task Title: Restart Reactor Water Cleanup Following Auto Isolation

No: 5

K/A Reference: 204000 A2.13 3.4/3.4

Position: RO/SRO

Examinee:

NRC Examiner:

Date:

Method of testing:
Simulated Performance

Actual Performance ✓

Classroom

Simulator ✓ 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 conditions are as follows:

- The Reactor is at pressure.
- RWCU system has automatically isolated.
- The GP VI isolation signal was initiated by a faulty temperature switch which has since been repaired and post work tested.
- All prerequisites for restoring RWCU have been met.
- It is estimated that Chemistry requirements will be violated in less than 12 hours without RWCU.
- CAVS is in service

Task Standard: Reset the Group 6 isolation and restore RWCU to operation IAW 2.2.125.1. There shall be no failure of critical elements. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.2.125.1, Rev. 11 and PNPS 2.2.83, Rev. 65

Initiating Cue: "[Operator's name], reset the Group VI isolation and restore RWCU to service per 2.2.125.1 with both filter demins in service".

Time Critical Task: NO
Validation Time: 13 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Operator reviews the applicable section of the procedure.

Standard: Applicable section of the procedure reviewed.

Comment:
- All critical steps must be performed in the order written unless otherwise noted.
- All components are located on panel C-904 in the control room unless otherwise noted.
- Radwaste personnel are standing by at RWCU 1279 panel.

✓ **Performance Step 2:** When the cause of the isolation has been corrected, then reset the PCIS Group 2, 3, 6 Isolation Reset Switch on panel C-905.

Standard: Operator rotates switch both clockwise and counterclockwise to "inboard and outboard" position.

Comment:

_____ **Performance Step 3:** If CAVS is in service, then isolate flow to CAVS by closing AO-220-44, Inboard Isolation Valve.

Standard: Operator rotates switch for AO-220-44 to the CLOSED position notes green CLOSED light lit, red OPEN light not illuminated.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 4:** If CAVS is in service, then isolate flow to CAVS by closing AO-220-45, Outboard Isolation Valve.

Standard: Operator rotates switch for AO-220-45 to the CLOSED position and notes green CLOSED light lit, red OPEN light not illuminated.

Comment:

✓ **Performance Step 5:** Open MO-1201-5.

Standard: Operator rotates the MO-1201-5 switch clockwise and releases.

Comment: .

✓ **Performance Step 6:** Throttle MO-1201-80 slightly open.

Standard: Operator rotates the MO-1201-80 switch clockwise momentarily and releases.

Comment:

_____ **Performance Step 7:** Operator notes Caution: **CAUTION:** Do not leave MO-1201-2 in a throttled position.

Standard: Operator notes caution prior to step 4b.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 8:** Slowly jog open MO-1201-2 to full open position.

Standard: Operator momentarily rotates switch for MO-1201-2 clockwise.

Comment: MO-1201-2 does not respond.

_____ **Performance Step 9**: Perform attachment 11 of PNPS 2.2.83.

Standard: Operator obtains and reviews Attachment 11 of PNPS 2.2.83.

Comment:

_____ **Performance Step 10:** Test vessel temperature is determined to be greater than or equal to 450 degrees.

Standard: Operator asks Chemistry about test vessel temperature.

Comment: Cue operator that chemistry informs him that test vessel temperature is 500 degrees F.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 11:** Verify AO-220-44 and AO-220-45 are closed.

Standard: Operator verifies green lights for AO-220-44 and AO-220-45 are lit and red light are not illuminated

Comment:

✓ **Performance Step 12:** Close 2-HO-135, CAVS Supply Upstream Block Valves.

Standard: Operator instructs 2-HO-135 to be closed locally.

Comment: Inform operator that 2-HO-135 is closed.
(**Note:** Simulator booth operator closes 1201-47 on RWCU schematic)

✓ **Performance Step 13:** Open AO-220-44 and AO-220-45

Standard: Operator rotates switch for AO-220-44 and AO-220-45 counterclockwise and verifies that red lights are lit and green lights are out.

Comment:

✓ **Performance Step 14:** Slowly open 2-HO-135

Standard: Operator instructs that 2-HO-135 be slowly opened locally.

Comment: Simulator booth operator slowly opens 1201-47.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 15:** When pressure indicated on PI-1290-9 stops increasing slowly jog open MO-1201-2, Inboard Isolation Valve.

Standard: Operator notes pressure stabilized on PI-1290-9 then slowly jogs MO-1201-2 switch in the clockwise direction until fully open.

Comment: Note to IF operator: Delete MO-1201-2 override.

_____ **Performance Step 16:** Place CAVS in desired configuration according to PNPS 10.2.8.

Standard: Operator informs chemistry to place CAVS in service per PNPS 10.2.8.

Comment:

_____ **Performance Step 17:** Return to step 7.2(6) of PNPS 2.2.83.

Standard: Operator returns to step 7.2[6] of 2.2.83.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 18:** At panel C1279 decrease FC-1279-15A and FC-1279-15B to minimum setting and verify FV-1279-15A and FCV-1279-15B closed.

Standard: Operator informs Radwaste to set FC-1279-15A and FC-1279-15B to minimum setting and verify FV-1279-15A and FC-1279-15B are closed.

Comment: Cue the candidate that, "FC-1279-15A and FC-1279-15B are at minimum setting and FV-1279-15A and FV-1279-15B are closed".

✓ **Performance Step 19:** Start a Cleanup Recirculation Pump.

Standard: Operator takes switch for RWCU pump to start then releases.

Comment: Operator should check flow and discharge pressure indication for pump started.

_____ **Performance Step 20:** Verify/place the HOLD/FILTER Switch in the "Filter" position.

Standard: Operator calls Radwaste to verify HOLD/FILTER switch in "Filter" position.

Comment: As Radwaste, cue the candidate that, "switch is in FILTER position".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 21:** Slowly jog open MO-1201-80.

Standard: Operator rotates switch for MO-1201-80 clockwise momentarily then releases. Repeat until flow reaches 111 gpm on FI-1290-30A and FI-1290-30B.

Comment: FI-1290-30A and FI-1290B indicated 111 gpm each.

✓ **Performance Step 22:** Open MO-1201-80 full open and system is back in service.

Standard: Operator rotates MO-1201-80 switch clockwise until full open.

Comment: MO-1201-80 has red light lit green light out.

Terminating Cue: When the operator has fully opened the MO-1201-80, he should inform the examiner that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 201-04-01-003

Task Title: CRD Weekly Exercises

No: 6

K/A Reference: 201002 A3.03 3.2/3.2

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ✓

Classroom _____

Simulator ✓

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 conditions are as follows:

- The Reactor is at 100% power.
- A Control Rod Exercise is to be performed IAW PNPS 8.3.2.
- PNPS 8.3.2 is partially complete. Rod 30-31 was the last rod complete.
- Reactor Engineering is present in the Control Room.
- An operator has been assigned to verify control rod withdrawal.
- A 3D Monicore control rod position log is available.

Task Standard: Control rod exercise will be performed IAW all precautions and limitations described in PNPS 8.3.2. When an uncoupled rod is discovered, the rod will be recoupled IAW off-normal procedure 2.4.11. There shall be no failure of critical elements. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: Marked up copy of PNPS 8.3.2 and 2.4.11.

General References: PNPS 2.4.11, Rev. 24
PNPS 8.3.2, Rev. 34

Initiating Cue: "[Operator's name], commence the control rod exercise with rod 34-31".

Time Critical Task: NO

Validation Time: 13 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Review the applicable section of the procedure.

Standard: Operator reviews PNPS 8.3.2 and signs Step 7.0[4].

Comment:
- All controls associated with this JPM are located on C905.
- Role play as necessary to answer any questions the operator may have during the procedure review. Possible questions that might be asked are:

  1. Is the fuel within the preconditioned envelope? Yes. The subsequent recirc flow increase will require soft ramp rates.

  2. Are we within 2% of any limit? No. We will have >2% margin to all thermal limits throughout the rod withdrawal.

✓ **Performance Step 2:** Insert control rods.

Standard: Operator selects next rod (34-31) and inserts to notch position 46.

Comment:

_____ **Performance Step 3:** Verify rod insertion and latching.

Standard: Operator verifies that rod stops at notch position 46

Comment: Role play as verifier, and verify the rod is at the proper position. (Note: Agree with whatever the operator says.)

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 4:** Withdraw rod to position 48.

Standard: Rod withdrawn to notch position 48.

Comment:

✓ **Performance Step 5:** Operator performs coupling check when each control rod reaches position 48.

Standard: Operator applies a notch override and rod out signal when each drive reaches 48 and confirms that alarm (C905L-B3), rod overtravel, does not annunciate.

Comment:

_____ **Performance Step 6:** Respond to rod 38-31 overtravel condition.

Standard: Operator terminates withdrawal of additional control rods and investigates overtravel and rod drift alarms.

Comment: Operator suspends additional rod withdrawal per 8.3.2.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 7:** Announces overtravel and rod drift alarms and refers to ARPs.

Standard: Operator announces overtravel and rod drift alarms and refers to ARPs.

Comment:

_____ **Performance Step 8:** Review rod overtravel ARP (C905L-B3) and determines rod is uncoupled.

Standard: Operator reviews rod overtravel ARP (C905L-B3) and determines rod is uncoupled.

Comment:

_____ **Performance Step 9:** Enter and execute off-normal procedure 2.4.11.

Standard: Operator enters and executes off-normal procedure 2.4.11.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 10:** Consult with Reactor Engineering prior to attempting to recouple the rod.

Standard: Operator consults with Reactor Engineering prior to attempting to recouple the rod.

Comment: As Reactor Engineering, cue the candidate that, "I recommend continuing with off-normal procedure".

✓ **Performance Step 11:** Insert control rod two notches.

Standard: Operator inserts control rod to notch position 44.

Comment: Control Rod inserted to position 44.

✓ **Performance Step 12:** Withdraw rod to position 48 by notching the rod out.

Standard: Operator notch withdraws rod to position 48 by notching the rod out.

Comment:

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

✓ **Performance Step 13:** Perform another coupling check by applying a notch override and rod out signal and confirm that alarm (C905L-B3) rod overtravel, does not annunciate.

Standard: Operator performs another coupling check by applying a notch override and rod out signal and confirm that alarm (C905L-B3) rod overtravel, does not annunicate.

Comment:

_____ **Performance Step 14:** Determine rod is re-coupled.

Standard: Operator determines rod is re-coupled.

Comment:

Terminating Cue: When the rod is recoupled, the examiner should inform the candidate that the JPM is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 262-01-01-002

Task Title: Manual Transfer of Emergency Buses to Startup Transformer

No: 7

K/A Reference: 226001 A4.01 3.4/3.7

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance _____

Actual Performance ✓

Classroom _____

Simulator ✓

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 conditions are as follows:

- The plant is operating at power.
- All 4160 VAC buses are currently being carried from the Unit Auxiliary Transformer.
- A special maintenance procedure is to be performed, which requires that the emergency buses be powered from the Startup Transformer.

Task Standard: Power the emergency buses from the Startup Transformer. There shall be no failure of critical elements. All critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.2.3, Rev. 17

Initiating Cue: "[Operator's name], transfer A5 and A6 to the Startup Transformer in accordance with PNPS 2.2.3".

Time Critical Task: NO

Validation Time: 5 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Review the applicable section of the procedure.

Standard: Operator reviews the applicable section of the procedure

Comment:
- All components located on C-3 unless otherwise stated.

_____ **Performance Step 2:** Verify the A5 Auto Transfer Selector Switch in the "ON" position.

Standard: Operator verifies A5 Auto Transfer Selector Switch in the "ON" position.

Comment:

_____ **Performance Step 3:** Place the Startup Transformer synchronizing switch for Bus A-5 in the "ON" position.

Standard: Operator rotates the Startup Transformer Synch Switch for Bus A-5 clockwise to the "ON" position.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 4:** Check incoming and running voltage, synchroscope and Bus A-5 voltage for proper reading.

Standard: Buses are synchronized.

Comment:

✓ **Performance Step 5:** Close in the Startup Transformer breaker A504.

Standard: Operator rotates the Startup Transformer to Bus A5 breaker control switch clockwise to the close position momentarily, then releases.

Comment:

_____ **Performance Step 6:** Observe Startup Transformer breaker A504 is closed in and feeding Bus A-5.

Standard: A504 breaker has red light on, green light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 7:** Trip the Unit Auxiliary Transformer breaker A505.

Standard: Operator rotates the Unit Auxiliary Transformer breaker control switch counterclockwise to the "TRIP" position momentarily, then releases.

Comment:

_____ **Performance Step 8:** Place the Startup Transformer synchronizing switch for Bus A-5 to "OFF".

Standard: Operator rotates the Startup Transformer Synch Switch for Bus A-5 counterclockwise to the "OFF" position.

Comment:

✓ **Performance Step 9:** Place the key in the A5 Auto Transfer Selector Switch and place the switch in "OFF".

Standard: Operator obtains fast transfer keylock switch key, inserts key into fast transfer selector switch and rotates it clockwise, and rotates fast transfer switch counterclockwise to the "OFF" position.

Comment: Examiner should provide key.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 10:** Check for inadvertent MSIV isolation.

Standard: Operator verifies that MSIV lights on C905 are lit.

Comment:

_____ **Performance Step 11:** Verify the A6 Auto Transfer Selector Switch in the "ON" position.

Standard: Operator verifies A6 Auto Transfer Selector Switch in the "ON" position.

Comment:

_____ **Performance Step 12:** Place the Startup Transformer to synchronizing switch for Bus A-6 in the "ON" position.

Standard: Operator rotates the bus A6 synch switch clockwise to the "ON" position.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 13:** Check incoming and running voltage, synchroscope and Bus A-6 voltage for proper reading.

Standard: Buses are synchronized.

Comment:

✓ **Performance Step 14:** Close in the Startup Transformer breaker A604.

Standard: Operator rotates the Startup Transformer to Bus A6 breaker control switch clockwise to the close position momentarily, then releases.

Comment:

_____ **Performance Step 15:** Observe Startup Transformer breaker A604 is closed in and feeding Bus A-6.

Standard: A604 breaker has red light on, green light off.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 16:** Trip the Unit Auxiliary Transformer breaker A605.

Standard: Operator rotates the Unit Auxiliary Transformer breaker control switch counterclockwise to the "TRIP" position momentarily, then releases.

Comment:

_____ **Performance Step 17:** Place the Startup Transformer synchronizing switch for Bus A-6 to "OFF".

Standard: Operator rotates the Startup Transformer switch for bus A-6 counterclockwise to the "OFF" position.

Comment:

✓ **Performance Step 18:** Place the key in the A6 Auto Transfer Selector Switch and place the switch in "OFF".

Standard: Operator obtains fast transfer keylock switch key, inserts key into fast transfer selector switch and rotates it clockwise, and rotates fast transfer switch counterclockwise to the "OFF" position.

Comment: Examiner should provide key.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 19:** Check for inadvertent MSIV isolation.

Standard: Operator verifies that MSIV lights on C905 are lit.

Comment:

Terminating Cue: When the candidate has reached this point, he should inform the examiner that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 200-05-04-072

Task Title: Lineup CRD Pumps for Two Pump Emergency Makeup

No: 8

K/A Reference: 295031 EA1.10 3.6/3.7

Position: RO/SRO

Examinee:

NRC Examiner:

Date:

Method of testing:

Simulated Performance ✓

Actual Performance

Classroom

Simulator

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 conditions are as follows:

- The Reactor is scrammed with RPV level at –20 inches and slowly lowering due to a break in the primary system.
- The RPV is at rated pressure with the RCIC System and one CRD pump running.
- The second CRD pump is needed for RPV emergency makeup.

Task Standard: The second CRD pump shall be placed in service in accordance with all system precautions and limitations. PNPS 2.2.87, "Control rod drive System", shall be followed without failure of any critical elements. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.2.87, Rev. 84

Initiating Cue: "[Operator's name], place the second CRD pump in-service in the emergency makeup mode. Inform me when you have completed the assigned task".

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Review the applicable section of the procedure.

Standard: Operator reviews the applicable section of the procedure

Comment:
- Operator reviews Precautions and Limitations and Section 8.2 of 2.2.87.

✓ **Performance Step 2:** Open or check open 301-1A and 301-1B, CRD 'A' and 'B' Pump Suction Filter Bypass Valves.

Standard: Operator simulates opening valve 301-1A and 301-1B handwheel in the counterclockwise direction.

Comment:
- Cue the operator that, "301-1A(301-1B) handwheel is rotating, resistance is then felt and the handwheel will no longer turn".
- The CRD pump suction strainers and bypass valves are located adjacent to the CRD pumps in the CRD Quad.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 3:** Close 301-2A (301-2B), CRD Pump Discharge Isolation Valve, on the pump to be started.

Standard: Operator locates and simulates closing the CRD pump discharge valve (301-2A or 301-2B) on the non-operating CRD pump.

Comment: Cue the candidate that, "Valve 301-2A (301-2B) handwheel is rotating, resistance is felt and then stops".

✓ **Performance Step 4:** Start P-209A or P-209B, CRD Pump 'A' or 'B'.

Standard: Operator simulates contacting the Control Room C905 Operator and informs him/her that the non-operating CRD pump is aligned for start.

Comment:
- Operator informs you that pump 'A'('B') is ready for start.
- As the C905 Operator, cue the candidate that, "I understand that the 'A' ('B') CRD pump is ready for start. Standby".
- Cue the candidate that, "You hear the sound of the CRD pump 'A' ('B') motor starting, and discharge pressure is at 1400 psig".

✓ **Performance Step 5:** Slowly open 301-2A (301-2B), CRD Pump Discharge Isolation Valve.

Standard: Operator locates and simulates slowly opening valve 301-2A (301-2B).

Comment:
- Cue the candidate that, "The pump discharge valve handwheel is rotating, resistance is felt, and is now stopping".
- Cue the candidate that, "Pump discharge pressure is now at 1250 psig".

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

_____ **Performance Step 6:** Fully open FCV-302-6A or FCV-302-6B, Flow Control Valve 'A' or 'B', using FIC-340-1, CRD Flow Control, on panel C905. Throttle as necessary.

Standard: Operator informs the Control Room C905 Operator that the 'A'('B') CRD pump is running and aligned for two pump emergency makeup.

Comment: As the C905 Operator, "I understand that the 'A'('B') CRD pump is running and aligned for two pump emergency makeup".

Terminating Cue: When the candidate reaches this point, he should inform the examiner that the task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 200-05-01-014

Task Title: RCIC Start From the Alternate Shutdown Panels

No: 9

K/A Reference: 295007 AA1.03 3.4/3.5

Position: RO/SRO

Examinee:

NRC Examiner:

Date:

Method of testing:

Simulated Performance ✓

Actual Performance

Classroom

Simulator

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 conditions are as follows:

- The Control Room has been evacuated due to a fire.
- The reactor has been scrammed successfully.
- RPV pressure control has not been established.
- RCIC must be started to accomplish RPV pressure control.

Task Standard: The RCIC turbine will be in operation from the Alternate Shutdown Panels in the pressure control mode. The procedure shall be followed without failure of any critical elements. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.4.143, Appendix B, Rev. 25

Initiating Cue: "[Operator's name], start RCIC from the Alternate Shutdown Panels and place the system in the pressure control mode in accordance with PNPS 2.4.143, Appendix B. You will be in communication with the Shift Manager with walkie-talkies or a cellular phone. Inform me when you have completed the assigned task".

Time Critical Task: NO

Validation Time: 20 minutes

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Review the applicable section of the procedure.

Standard: Operator reviews the applicable section of the procedure, turns to Appendix B of 2.4.143 and looks at the procedure.

Comment:
- This task is covered in 2.4.143, Appendix B, Section 3.1 – 3.3.
- All controls are located at the alternate shutdown panels C154, C155 and C159 unless noted.

Note to Examiner: Candidate may verify the following conditions as part of precautions:

1) Steam pressure on PI-1360-12 (Rack 2258) on RCIC Mezzanine
2) MO-1301-48 is open (RCIC Mezzanine Level)
3) MO-1301-22 is open ('B' Aux Bay NE corner)

If he makes these checks, cue him at the appropriate time that steam pressure is zero, MO-1301-48 is open and MO-1301-22 is open.

The procedure indicates that the checks should be made if time permits. Therefore, the checks may or may not be made.

A lack of steam pressure should indicate that MO-1301-16 or MO-1301-17 has closed. If he proceeds to the breaker to open MO-1301-16 and MO-1301-17, cue him that, "Another operator will open the valves and he should monitor steam pressure on PI-1360-12".

Then cue the candidate that, "MO-1301-16 and 17 have been opened from the breaker and that PI-1360-12 slowly rises from 0 to 1000 psig".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 2:** Obtain keys to ASP 154, ASP 155 and switch 13A-LS1 on ASP 159.

Standard: When the candidate describes where he would obtain the keys, present him with the key. (Key can be obtained from SM office, control room annex or by breaking glass in box adjacent to each ASP.)

Comment:

_____ **Performance Step 3:** Place RCIC area cooler at C61A for VAC 202A(B) to TEST from RUN position.

Standard: Operator locates fan and rotates control switch for VAC 202A or B on panel C61A to the "TEST" position.

Comment:

- Fan control switch for VAC 202A or B is located on panel 61A (East wall of RB 23' elevation).
- Cue the candidate that, "The switch is turning and now it is in "TEST"".
- Cue the candidate that, "The red light is on and the green and amber lights are off for VAC 202A or B.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 4:** Start the RCIC Vacuum Pump P222 locally in the Quadrant.

Standard: Operator locates and pushes the "START" button for the RCIC vacuum pump.

Comment:
- It is not necessary to go to the Quadrant to accomplish this step. If the operator starts for the Quadrant, cue the candidate that, "The RCIC vacuum pump is already running".

_____ **Performance Step 5:** Place the control switch for MO-2301-15 (Full Flow Test Valve #2) at ASP C155 (HPCI Quadrant Entrance) out of PULL-TO-LOCK and into the pushed-in normal position.

Standard: Operator locates, unlocks and opens ASP C155, and pushes control switch to MO-2301-15 out of pull-to-lock and into the normal position.

Comment:
- Cue the candidate that, "Control switch is in "Normal" position".
- Opening ASP C155 will give the control room a tamper alarm.

✓ **Performance Step 6:** Open or check open valve MO-2301-15 from ASP C155.

Standard: Operator locates and simulates rotating control switch for MO-2301-15 in ASP C155 clockwise to the OPEN position, then releases.

Comment: Cue the candidate that, "MO-2301-15 red light is on and the green light is off".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 7:** Place switch 13A-LS1 at ASP C159 (RCIC ASP) to Local.

Standard: Operator simulates inserting key into switch 13A-LS1 and simulates rotating switch clockwise to the local position.

Comment: Cue the candidate that, "Switch 13A-LS1 is in local".

_____ **Performance Step 8:** Place all control switches (five valve control switches) in ASP C154 out of PULL-TO-LOCK and into the pushed in NORMAL position.

Standard: Operator locates, unlocks and opens ASP C154.

Comment: Switches may be pushed in any order as long as all 5 get pushed in. Opening ASP C154 will give the control room a tamper alarm.

✓ **Performance Step 9:** Place control switch for MO-1301-61 in the normal position by pushing in on the control switch.

Standard: Operator simulates placing control switch for MO-1301-61 in the normal position by pushing in on the control switch.

Comment: Cue the candidate that, "The control switch is pushed-in".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 10:** Place control switch for MO-1301-49 in the normal position by pushing in on the control switch.

Standard: Operator simulates placing control switch for MO-1301-49 in the normal position by pushing in on the control switch.

Comment: Cue the candidate that, "The control switch is pushed-in".

✓ **Performance Step 11:** Place control switch for MO-1301-60 in the normal position by pushing in on the control switch.

Standard: Operator simulates placing control switch for MO-1301-60 in the normal position by pushing in on the control switch.

Comment: Cue the candidate that, "The control switch is pushed-in".

✓ **Performance Step 12:** Place control switch for MO-1301-62 in the normal position by pushing in on the control switch.

Standard: Operator simulates placing control switch for MO-1301-62 in the normal position by pushing in on the control switch.

Comment: Cue the candidate that, "The control switch is pushed-in".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 13:** Place control switch for MO-1301-53 in the normal position by pushing in on the control switch.

Standard: Operator simulates placing control switch for MO-1301-53 in the normal position by pushing in on the control switch.

Comment: Cue the candidate that, "The control switch is pushed-in".

✓ **Performance Step 14:** Turn power supply to "ON" at Power Supply Panel N551 adjacent to C154 and C159.

Standard: Operator simulates turning on power by simulating pushing up on the ON/OFF switch.

Comment:
- Cue the candidate that, "The switch is in the "ON" position".
- If asked, cue the candidate that, "The red light is on, voltage indicates 120 volts, current indicates slightly above 0 amps".

_____ **Performance Step 15:** Verify that the amber lights on the front of panels C154 and C159 are NOT lit.

Standard: Operator verifies that the amber light on the front of panel C154 is NOT lit.

Comment: Cue the candidate that, "The amber light is off".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 16:** Verify that the amber lights on the front of panels C154 and C159 are NOT lit.

Standard: Operator verifies that the amber light on the front of panel C159 is NOT lit.

Comment: Cue the candidate that, "The amber light is off".

_____ **Performance Step 17:** Verify that Flow Controller FIC-1340-2 on ASP C159 is in AUTO and the setpoint is 250 GPM.

Standard: Operator locates and verifies that FIC-1340-2 is in AUTO.

Comment:

____ **Performance Step 18:** Verify that Flow Controller FIC-1340-2 on ASP C159 is in AUTO and the setpoint is 250 GPM.

Standard: Operator verifies that the setpoint is 250 GPM.

Comment:

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 19:** Open MO-1301-62, Cooling Water Supply Valve, on ASP C154.

Standard: Operator locates and momentarily rotates the MO-1301-62 control switch clockwise to the OPEN position, then releases.

Comment: Cue the candidate that, "MO-1301-62 has the red light on and the green light off".

_____ **Performance Step 20:** Open/Verify open MO-2301-15, HPCI/RCIC Test Return Line, on ASP C155.

Standard: Operator locates and verifies the red OPEN light is ON and the green CLOSED light is OFF.

Comment: The operator may successfully complete this step by verifying they previously opened MO-2301-15 during the performance of this procedure.

✓ **Performance Step 21:** Jog open MO-1301-53, RCIC Full Flow Test Valve, for 6 seconds.

Standard: Operator locates and rotates the MO-1301-53 control switch clockwise to the OPEN position for 6 seconds, then releases.

Comment: Cue the candidate that, "MO-1301-61 has the red and green lights both on".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 22:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, refer to Precaution 2.0[5].

Standard: Operator locates and momentarily rotates the MO-1301-61 control switch clockwise to the OPEN position, then releases.

Comment: Cue the candidate that, "MO-1301-61 has the red light is on and the green light off".

Note: If the candidate opens MO-1301-17 in the verification of prerequisites, skip to step 31.

_____ **Performance Step 23:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, refer to Precaution 2.0[5].

Standard: Operator verifies turbine start by increase in turbine speed indicated by Speed Indicator SI-1340-2 on ASP C159.

Comment: Cue the candidate that, "Turbine speed is 0 RPM".

_____ **Performance Step 24:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, refer to Precaution 2.0[5].

Standard: Operator verifies flow as indicated by Flow Indicator FI-1340-2 on ASP C159.

Comment: Cue the candidate that, "FI-1340-2 indicates 0 GPM".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 25:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, refer to Precaution 2.0[5].

Standard: Operator notifies SM by walkie-talkie of RCIC failure.

Comment:
- If it doesn't appear that the operator is going to contact the SM, then cue the candidate that, "this is SM. What is the status of placing RCIC in service?"
- After he reports that there is a problem with starting RCIC, cue the candidate to, "Close the MO-1301-61 and report back".

_____ **Performance Step 26:** Close MO-1301-61, Turbine Supply Valve from ASP C154.

Standard: Operator locates and simulates momentarily rotating the MO-1301-61 control switch counterclockwise to the CLOSE position, then releases.

Comment: Cue the candidate that, "MO-1301-61 has the red light off and the green light on".

_____ **Performance Step 27:** Refer to Precaution 2.0[5].

Standard: Operator checks RCIC steam supply pressure on PI-1360-12 at rack 2258.

Comment: Cue the candidate that, "RCIC pump steam supply pressure is 0 psig".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 28:** Refer to Precaution 2.0[5].

Standard: Operator recognizes that MO-1301-16 or MO-1301-17 have spuriously closed.

Comment:
- When the candidate starts for the breakers to open MO-1301-16 and MO-1301-17, cue the candidate that, "Another operator will open MO-1301-16 and MO-1301-17. Monitor pressure at PI-1360-12".
- After one minute, cue the candidate that, "MO-1301-16 and MO-1301-17 are open. Check steam pressure at PI-1360-12".

_____ **Performance Step 29:** Verify steam supply pressure on PI-1360-12 locally in the RCIC quadrant.

Standard: Operator locates and verifies the steam supply pressure on PI-1360-12 at rack C2258.

Comment: Cue the candidate that, "The steam pressure is rising and is now 1000 psig".

✓ **Performance Step 30:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, REFER to Precaution 2.0[5].

Standard: Operator locates and momentarily rotates the MO-1301-61 control switch clockwise to the OPEN position, then releases.

Comment: Cue the candidate that, "MO-1301-61 has the red light on and the green light off.

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

____ **Performance Step 31:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, REFER to Precaution 2.0[5].

Standard: Operator verifies turbine start by increase in turbine speed indicated by Speed Indicator SI-1340-2 on ASP C159.

Comment: Cue the candidate that, "SI-1340-2 is rising and stabilizes at 2800 RPM".

_____ **Performance Step 32:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, REFER to Precaution 2.0[5].

Standard: Operator verifies flow indicated by Flow Indicator FI-1340-2 on ASP C159.

Comment: FI-1340-2 is rising and stabilizes at 250 GPM.

_____ **Performance Step 33:** Open MO-1301-61, Turbine Supply Valve, from ASP C154 and observe that the Turbine starts. If problems are encountered, REFER to Precaution 2.0[5].

Standard: Operator notifies SM by walkie-talkie that RCIC is running in pressure control.

Comment: If asked for desired flow rate, cue the candidate that, "Flow rate should be 250 GPM".

Terminating Cue: Once the candidate informs the SM that RCIC is in pressure control, he should inform the examiner that his task is complete.

Job Performance Measure
Worksheet

Facility: Pilgrim

Task No: 200-05-01-014

Task Title: Emergency Diesel Generator Operation Outside Control Room

No: 10

K/A Reference: 264000 A4.04 3.7/3.7

Position: RO/SRO

Examinee: _____

NRC Examiner: _____

Date: _____

Method of testing:

Simulated Performance ✓

Actual Performance _____

Classroom _____

Simulator _____

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 conditions are as follows:

- A Control Room fire has forced the evacuation of the Control Room.
- Severe weather conditions threaten the availability of off-site power.

Task Standard: Local control of both EDG's has been established and the 'A' EDG is running at rated voltage and speed. The system shall be operated in accordance with all applicable precautions and limitations. The procedure shall be followed without failure of any critical elements. Critical steps must be performed in order; other steps may be performed out of sequence.

Required Materials: None

General References: PNPS 2.4.143, Rev. 25

Initiating Cue: "[Operator's name], take local control of both diesel generators. Start the 'A' EDG and prepare it to load in accordance with Appendix E of PNPS 2.4.143. Inform me when you have completed the assigned task".

Time Critical Task: NO

Validation Time: 15 minutes

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

_____ **Performance Step 1:** Review the applicable section of the procedure.

Standard: Operator reviews the applicable section of the procedure

Comment:

- This task is covered in 2.4.143, Appendix E, Section 3.1 – 3.3.
- All controls are located at the alternate shutdown panels C154, C155 and C159 unless noted.

_____ **Performance Step 2:** Obtain the keys to ASP C160 and ASP C161.

Standard: Operator obtains keys to ASP C160 and ASP C161.

Comment: When the operator has determined where keys to ASP C160 and C161 can be obtained, provide keys. (May be obtained from SM office, control room annex or by breaking glass adjacent to each ASP.)

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

✓ **Performance Step 3:** At ASP C160 AND ASP C161, transfer all control switches (four per panel) from remote to local in the order specified on the switches.

Standard: Operator unlocks and opens ASP C160, and simulates rotating the following switches from remote to local: 43-1, 43-2, 43-3 and 43-4.

Comment:
- Either ASP C160 or ASP C161 may be entered first.
- ASP C160 is located in the 'A' EDG room. Opening the ASP C160 will cause an ASP tamper alarm in the control room.
- Cue the candidate that, "43-1, 43-2, 43-3 and 43-4 are in local".

_____ **Performance Step 4:** Unlock and open ASP C161.

Standard: Operator locates correct panel and unlocks ASP.

Comment: ASP C161 is located in the 'B' EDG room. Opening ASP C161 will cause ASP tamper alarm in the control room.

✓ **Performance Step 5:** Rotate the following switches from Remote to Local: 43-1, 43-2, 43-3 and 43-4.

Standard: Operator simulates rotating the following switches from remote to local: 43-1, 43-2, 43-3 and 43-4.

Comment:
- Cue the candidate that, "43-1, 43-2, 43-3 and 43-4 are in local".

PERFORMANCE INFORMATION
(Critical steps denoted with a check mark)

_____ **Performance Step 6:** Verify the amber lights on ASP C160 and C161 are NOT lit.

Standard: Operator verifies that amber lamp on C160 and C161 are not lit.

Comment: Cue the candidate that, "The amber light are out".

✓ **Performance Step 7:** Depress the local start button on panel C103B.

Standard: Operator simulates depressing the local start pushbutton on C103B momentarily.

Comment:
- C103B is located in 'A' EDG room.
- Cue the candidate that, "You hear the diesel engine start".

_____ **Performance Step 8:** Verify machine comes up to speed (900 rpm on C103B).

Standard: Operator locates engine speed indicator and indicates intention of checking.

Comment: Cue the candidate that, "Engine speed indicates 900 rpm".

PERFORMANCE INFORMATION

(Critical steps denoted with a check mark)

_____ **Performance Step 9:** Verify generator voltage is approximately 4200V and frequency is 60 Hz (C101).

Standard: Operator observes the AC voltmeter indicator on C101, and observes the frequency indicator on C101

Comment:

- C101 is located in 'A' EDG room.
- Cue the candidate that, "Voltage indicates 4200 volts".
- Cue the candidate that, "Frequency indicates 60 hertz".

Terminating Cue: When the candidate reaches this point, he should inform the examiner that the task is complete.