PROPOSED NRC-DEVELOPED WALKTHROUGH JPMS

WITH FACILITY AND NRC COMMENTS

FOR THE PRAIRIE ISLAND INITIAL EXAMINATION - AUGUST 2002

Minor changes made by licensee to clear rate. Concurred

Complete changes incorporated 7/22/02

RO OP TEST B.1.a ①

Marked up Copy

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Transfer SI to Recirculation With Failure of One Safeguard Bus | Job Performance Measure No:SRO/ROB.1.a

K/A Reference: 006A4.02 [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:

- A ~~large~~ med break LOCA has occurred on Unit I.
- All actions in I E-O performed to TRANSITION.
- All actions in I E-I completed through and including Step 5.
- Preparation for switchover per I ES-I .2, step 2 has been completed. (Attachment K complete)

Task Standard: Train B safeguard equipment in recirculation mode.

Required Materials: None

General References: 1ES-1.2 and 1ES-1.3

Initiating Cues:

- The Unit 1 SS directs you to continue with IES-I.2 starting at step 3, AND place II SI Pump in the recirculation mode via II RHR Pump.

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: _____ Minutes | Time Started 1320 | Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: **CRITICAL STEP** SAT/UNSAT

Reset SI.

Standard:

SI reset as indicated by Annunciator 47014-0504 ON and 47014-0604 OFF.

Comment:

CUE: None.

2__ Performance step: SAT/UNSAT

Both Trains of Safeguard Pump(s) Available for recirculation

Standard:

Availability of both trains checked.

Comment:

CUE: IF asked as SS, THEN report that both trains of safeguards pumps are available for recirculation.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___3__ Performance step: **CRITICAL STEP** SAT/UNSAT

STOP One Train of Safeguard Pumps: a. Stop one SI pump

Standard:

11 SI pump stopped.

Comment:

CUE: D1 is logged OOS and Tech Spec has been addressed.

Stopp 11 RH pump ?

_4_ Performance step: SAT/UNSAT

Stop One Train of Safeguard Pumps:
Perform the following:
1) Reset containment spray signal
2) Stop one containment spray pump

Standard:

Containment Spray has not actuated therefore it is not necessay to reset CS signal.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___5___ Performance step: **CRITICAL STEP** SAT/UNSAT

CLOSE SI Test Line to RWST Valves:
- **MV-32202**
- **MV-32203**

Standard:

MV-32202 AND MV-32203 closed using CS-46204 and CS-46205.

Comment:

CUE: None.

___6___ Performance step: SAT/UNSAT

Caution - Venting the bonnets of sump B to RHR MVs per ATTACHMENT K must be completed before opening the following valves.

Standard:

Caution read.

Comment:

CUE: IF applicant requests the status of Attachment K, THEN state "Attachment K is complete."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

7 Performance step: SAT/UNSAT

OPEN Sump B to RHR Isolation Valves for Idle RHR Pump:
a. Open one set of valves for idle safeguard train: MV-32075 and MV-32077

Standard:

MV 32075 opening attempted using CS--46208.

Evaluator Note: MV-32075 will not open. The Examinee should transition to I ES-I .3 per step 7 RNO column. This is the beginning of the alternate path.

Comment:

CUE: IF applicant requests guidance from the SS, THEN state "Take actions as directed by the procedure"

8 Performance step: SAT/UNSAT

CHECK RWST Level - LESS THAN 28%.

Standard:

Evaluator Note: RWST level should be less than 28% by now.

Stay in step 1 until RWST level is less than 28%.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__9__ Performance step: **CRITICAL STEP** SAT/UNSAT

STOP RHR Pump.

Standard:

12 RHR pump stopped using CS-46185.

Comment:

CUE: None.

Stopped 12 RHR pump

__10__ Performance step: SAT/UNSAT

CLOSE SI Test Line to RWST Valves:
- MV-32202
- MV-32203

Standard:

Evaluator Note: The valves were closed in ES-1.2 CS-

MV-32202 AND MV-32203 closed using CS-46204 and CS-46205.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__11__ Performance step: **CRITICAL STEP** SAT/UNSAT

OPEN Sump B to RHR Isolation Valves for Operable RHR Pump:

- **MV-32075 and MV-32077**
  -OR-
- **MV-32076 and MV-32078**

Standard:

Evaluator Note: These valves have a long stroke time.

MV-32076 and MV-32078 opened using CS-46209 and CS-46211.

Comment:

CUE: None.

__12__ Performance step: **CRITICAL STEP** SAT/UNSAT

CLOSE RWST to RHR Isolation Valves for Operable RHR Pump:

- **MV-32084**
  - OR-
- **MV-32085**

Standard:

Evaluator Note: These valves have a long stroke time.

MV-32085 closed using CS-46203.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

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13 Performance step: SAT/UNSAT

VERIFY RHR to Reactor Vessel Nozzle Valves (MV-32064 And MV-32065)- OPEN

Standard:

MV-32064 And MV-32065 verified open by checking red lights on CS-46223 and 46224.

Comment:

CUE: None.

---

14 Performance step: SAT/UNSAT

VERIFY Sump B Level Adequate to Support RHR Pump Operation:

- Narrow Range level - 100%
  - OR-
- Wide Range level - GREATER THAN 1.75 FEET

Standard:

Adequate Sump B level verified by checking 1LI 725, 1LI 726, 1LI 727, or 1L1728.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___15___ Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE Operable RHR Train in Recirculation Operation:

a. VERIFY sump B to RHR isolation valves for operable RHR train are - FULL OPEN

- **MV-32075 AND MV-32077**
  - OR-
- **MV-32076 AND MV-32078**

Standard:

Evaluator Note: Critical step is satisfied as long as the valves are full open before starting the RHR pump in the next step.

MV-32076 And MV-32078 verified open by checking red lights on CS-46209 and 46211.

Comment:

CUE: None.

___16___ Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE Operable RHR Train in Recirculation Operation:

b. START operable RHR pump

Standard:

12 RHR Pump started using CS46185.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

17 Performance step: SAT/UNSAT

CHECK RCS Pressure - LESS THAN 125 PSIG

Standard:

Evaluator Note: - Pressure will NOT be less than 125 psig

Pressure checked on IPI-709, IPI-710, IPRA2O, or ERCS. Applicant goes to step 12 per RNO.

Comment:

CUE: None.

18 Performance step: **CRITICAL STEP** SAT/UNSAT

Stop SI Pump

Standard:

12 SI Pump stopped using CS46179.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__19__ Performance step: **CRITICAL STEP** SAT/UNSAT

CLOSE SI Pump Suction Isolation Valve for Operable SI Pump:

- **MV-32162**
  - OR -
- **MV-32163**

Standard:

MV-32163 closed using CS46193.

Comment:

CUE: None.

__20__ Performance step: SAT/UNSAT

CHECK RHR Pump Discharge Pressure - LESS THAN 210 PSIG:

- IPI-628
  -OR-
- IPI-629

Standard:

Applicant checks RHR pressure less than 210 psig on 1 PI-628.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

21 Performance step: **CRITICAL STEP** SAT/UNSAT

OPEN RHR Supply to Operable SI Pump Isolation Valve:

- **MV-32206**
  -OR-
- **MV-32207**

Standard:

MV-32207 opened using CS-46207.

Comment:

CUE: None.

22 Performance step: **CRITICAL STEP** SAT/UNSAT

START SI Pump.

Standard:

12 SI Pump started using CS46179.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

---

23 Performance step: SAT/UNSAT

VERIFY SI Flow (1 FI-925).

Standard:

SI flow verified on I FI-925.

Comment:

CUE: None.

---

24 Performance step: **CRITICAL STEP** SAT/UNSAT

CLOSE RHR to Reactor Vessel Nozzle Valve for RHR Pump Supplying SI Pump Suction:

- **MV-32064**
  - OR -
- **MV-32065**

Standard:

MV-32065 closed using CS-46224.

Comment:

CUE: None.

Terminating cue: 12 SI pump being supplied from 12 RHR pump via sump B RHR supply to Reactor Vessel valve MV-32065 closed.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

SIMULATOR SETUP

Instructor Guide:

Initialize the simulator to IC-i 0.

Insert relative order 0 items.

Insert malfunction RCO7A at 10% severity, cold leg LOCA (Relative Order I).

Perform the following:

- CloseMV-32115
- Open Turbine Drains
- Place Steam Dump in Steam Pressure Mode
- Stop RCP's
- Place all FCU's in slow
- Stop SFP Make-up Fans.
- Stop SFP Exhaust Fans.

Freeze simulator when RCS pressure is less than 500 psig and RWST <28%.

IF desired, THEN snap to an available IC.

Give initial conditions.

Place simulator in run just before the first control board manipulation.

Initial Conditions:

- A large break LOCA has occurred on Unit I.
- All actions in I E-O performed to TRANSITION.
- All actions in I E-I completed through and including Step 5.
- Preparation for switchover per I ES-I .2, step 2 has been completed. (Attachment K complete)

Initiating Cues:

- The Unit 1 SS directs you to continue with IES-I.2 starting at step 3, AND place II SI Pump in the recirculation mode via II RHR Pump.

Facility: Prairie Island Task No: _____

Task Title: Raise #12 Accumulator Level Job Performance Measure No: SRO/RO B.1.b

K/A Reference: 006 A1.13 [3.5/3.7]

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:
- Unit 1 is at 100% power
- SI system is aligned in normal at power condition
- #12 Accumulator level is at 22%

Task Standard: #12 Accumulator level raised to 56% to 58% and SI system returned to the normal lineup.

Required Materials: 1C18, "Engineered Safeguards System Unit 1", Section 5.4, Rev 10

General References: 1C18, "Engineered Safeguards System Unit 1", Rev 10

Initiating Cues:
- You are directed by the Shift Supervisor to raise level in #12 Accumulator with the 12 SI Pump in accordance with 1C18, "Engineered Safeguards System Unit 1", Section 5.4 to between 56% and 58%.
- A local operator is stationed at the 12 SI Pump in preparation for starting the pump.

Time Critical Task: YES/NO Alternate Path: YES/NO

Validation Time: _____ Minutes Time Started _____ Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: SAT/UNSAT

VERIFY local valve SI-15-4, "12 SI PUMP TO TEST LINE" is **OPEN**.

Standard:

DIRECTS the Auxiliary Building Operator to verify valve open.

Comment:

CUE: The Auxiliary Building Operator reports that valve SI-15-4 is open.

__2__ Performance step: SAT/UNSAT

VERIFY the following valves **OPEN**:
- MV-32202, "SI TEST LINE TO RWST"
- MV-32203, "SI TEST LINE TO RWST"

Standard:

VERIFIES open valves MV-32202 and MV-32203.

Comment:

__3__ Performance step: SAT/UNSAT

VERIFY at least ONE of the RWST header isolation valves to the SI Pumps is **OPEN**:
- MV-32079, "RWST TO SI PUMPS"
  OR
- MV-32080, "RWST TO SI PUMPS"

Standard:

VERIFIES open valve MV-32079 or MV-32080.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___4___ Performance step: SAT/UNSAT

DIRECT Auxiliary Building Operator to manually lubricate the bearings on the #12 SI Pump and to observe the pump run.

Standard:

DIRECTS Auxiliary Building Operator to manually lubricate the bearings on the #12 SI Pump and to observe the pump run.

Comment:

CUE: The Auxiliary Building Operator reports that he has manually lubricated the bearings on the #12 SI Pump and is stationed to observe the pump run.

___5___ Performance step: **CRITICAL STEP** SAT/UNSAT

Start the 12 SI Pump and record the time: **Start time:** _____

Standard:

Starts 12 SI Pump.

Comment:

___6___ Performance step: SAT/UNSAT

DIRECT the Auxiliary Building Operator to locally observe proper SI Pump operation:
- Bearing lubrication (slinger rings)
- Return oil flow indication
- Oil pressure indication

Standard:

DIRECTS the Auxiliary Building Operator to observe pump parameters for proper operation.

Comment:

CUE: Auxiliary Building Operator reports proper bearing lubrication, return oil flow indication, and oil pressure indication

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PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__7__ Performance step: **CRITICAL STEP** SAT/UNSAT

NOTE: Accumulator level rises immediately upon opening the accumulator makeup isolation valve.

CAUTION: WHEN CV-31445, "12 ACCUM M-U" is open, THEN an operator shall be designated to have the responsibility for closing the valve within ONE minute following an accident.

Under administrative control, OPEN CV-31445, "12 ACCUM M-U" using control board switch.

Standard:

OPENS CV-31445 using control board switch.

Comment:

__8__ Performance step: **CRITICAL STEP** SAT/UNSAT

WHEN #12 Accumulator level reaches 56%, THEN CLOSE CV-31445, "12 ACCUM M-U" using control board switch.

Standard:

CLOSES CV-31445 when #12 Accumulator level on 1LI-934, 1LI-935, or ERCS is between 56% and 58%.

Comment:

__9__ Performance step: SAT/UNSAT

DIRECT Independent Verification that CV-31445, "12 ACCUM M-U" is closed.

Standard:

DIRECTS Independent Verification that CV-31445, "12 ACCUM M-U" is closed.

Comment:

CUE: Report Independent Verification that valve CV-31445 is closed.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___10_ Performance step: SAT/UNSAT

ENSURE the #12 SI Pump has run for a minimum of 15 minutes.

Standard:

ENSURES the #12 SI Pump has run for a minimum of 15 minutes.

Comment: Correct Comment Incorporated Miller

CUE: The #12 SI Pump has run for ~~at least 15~~ 20 minutes

___11_ Performance step: **CRITICAL STEP** SAT/UNSAT

STOP the 12 SI Pump and record the time. **Stop time:** _____

Standard:

Stops 12 SI Pump and records the time the pump was stopped.

Comment:

___12_ Performance step: SAT/UNSAT

NOTIFY the SI System Engineer of the completion of the #12 Accumulator fill in order to evaluate level adjustment frequency.

Standard:

NOTIFIES the SI System Engineer of the completion of the #12 Accumulator fill.

Comment:

CUE: The SI System Engineer has been notified of the completion of the procedure.

Terminating cue: WHEN the 12 SI Pump is stopped and the SI System Engineer has been notified of the completion of the #12 Accumulator fill.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:

- Unit 1 is at 100% power
- SI system is aligned in normal at power condition
- #12 Accumulator level is at 22%

Initiating Cues:

- You are directed by the Shift Supervisor to raise level in #12 Accumulator with the 12 SI Pump in accordance with 1C18, "Engineered Safeguards System Unit 1", Section 5.4 to between 56% and 58%.
- A local operator is stationed at the 12 SI Pump in preparation for starting the pump.

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Lineup RHR and Commence Phase II Cooldown using RHR Pump | Job Performance Measure No: SRO/RO B.1.c

K/A Reference: 005 A4.01 [3.6/3.]

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:
- Unit 1 RCS cooldown is in progress per C1.3, "Unit 1 Shutdown"
- RCS temperature is 335°F
- RCS pressure is 340 psig
- RCS boron concentration is 1235 ppm
- Unit 1 reactor has been shutdown for 12 hours for a refueling outage

Task Standard: RHR system is aligned for shutdown cooling and Phase II cooldown has commenced.

Required Materials: 1C15, "Residual Heat Removal System", Section 5.1, Rev 24

Concur. Comments incorporated. Miller

General References: 1C15, "Residual Heat Removal System", Rev 24

per 1C15, "Residual Heat Removal System", Section 5.1

Initiating Cues:
The Shift Supervisor directs you to place RHR in service starting at step 5.1.25 using the 12 RHR Pump.

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: _____ Minutes | Time Started _____ | Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: **CRITICAL STEP** SAT/UNSAT

OPEN the RHR suction valves from the RCS:
- **MV-32164, "LOOP A HOT LEG TO RHR" using control switch CS-46226**
- **MV-32165, "LOOP A HOT LEG TO RHR" using control switch CS-46228**
- **MV-32230, "LOOP B HOT LEG TO RHR" using control switch CS-46227**
- MV-32231, "LOOP B HOT LEG TO RHR" using control switch CS-46229

Concur. Comments incorporated. MCalter

Standard:

OPENS valves MV-32164, MV-32165, ~~and~~ MV-32230, and MV-32231 using control switches.

Comment: EVALUATOR NOTE: Will get the following alarms when RHR is aligned to the RCS:
- "11 RHR PUMP HI PRESS" [47016-0502]
- "12 RHR PUMP HI PRESS" [47016-0503]

These alarms are EXPECTED and come in at an RHR pressure of >210 psig.

__2__ Performance step: **CRITICAL STEP** SAT/UNSAT

START the 12 RHR Pump and VERIFY normal discharge pressure as indicated on 1PI-629 is approximately 150 psi greater than RCS pressure.

Standard:

STARTS the 12 RHR Pump using control switch CS46185 and VERIFIES discharge pressure is approximately 150 psi greater than RCS pressure on 1PI-629.

Comment:

__3__ Performance step: SAT/UNSAT

After the RHR loop has recirculated for five minutes, sample for the proper boron concentration. [RHR $C_B \geq$ (RCS C_B - 100 ppm)]

Standard:

CALLS Auxiliary Building operator or chemist to obtain sample.

Concur. Comments incorporated. MCalter

Comment: EVALUATOR NOTE: Since the RCS boron concentration is 1235 ppm (per the Initial Conditions), any RHR boron concentration of ≥ 1135 ppm is acceptable (1235 - 100 = 1135).

CUE: ~~Tell applicant:~~ "Five minutes have elapsed." When the applicant calls to obtain an RHR sample, state that the RHR sample is 1300 ppm boron.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

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4 Performance step: **CRITICAL STEP** SAT/UNSAT

With 1HC-626A in "MANUAL", use the manual pot to OPEN CV-31237, "11/12 RHR HX BYPASS FLOW", to 30% as indicated by the controller output meter.

Standard:

OPENS CV-31237 with controller 1HC-626A in "MANUAL" to 30%.

Comment:

---

5 Performance step: **CRITICAL STEP** SAT/UNSAT

CLOSE the RHR HX outlet flow control valves by adjusting their manual controllers:
- **CV-31235, "11 RHR HX RC OUTLET FLOW" (1HC-624)**
- **CV-31236, "12 RHR HX RC OUTLET FLOW" (1HC-625)**

Standard:

CLOSES the RHR HX outlet flow control valves CV-31235 and CV-31236 by adjusting their manual controllers 1HC-624 and 1HC-624.

Comment:

CUE: After this step is completed, if applicant asks if outage schedule directs that SP 1370, "Cycling of RHR Heat Exchange Outlet Control Valves" be performed, tell applicant that it was completed by another operator.

---

6 Performance step: **CRITICAL STEP** SAT/UNSAT

OPEN MV-32066, "RHR TO RC LOOP B COLD LEG" using control switch CS-46225.

Standard:

OPENS MV-32066, "RHR TO RC LOOP B COLD LEG" using control switch CS-46225.

Comment:
EVALUATOR NOTE: When MV-32066 is opened, will see flow on "12 RHR FLOW TO RCS" flow indicator (1FI-626).

Concur. Comment incorporated. Nelson

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__7__ Performance step: SAT/UNSAT

Using 1HC-626A, **READJUST** CV-31237, "11/12 RHR HX BYPASS FLOW" in "MANUAL" until a loop flow of 2000 gpm is indicated on 1FI-626.

Standard:

Uses 1HC-626A to **READJUST** CV-31237 in "MANUAL" until a loop flow of 2000 gpm is indicated on 1FI-626.

Comment:

__8__ Performance step: SAT/UNSAT

SET CV-31237, "11/12 RHR HX BYPASS FLOW" controller 1HC-626A automatic setpoint at approximately 33% to zero the deviation and place the controller in "AUTO".

Standard:

REMOVES deviation with auto dial and then **PLACES** 1HC-626A in "AUTO".

Comment:

__9__ Performance step: **CRITICAL STEP** SAT/UNSAT

OPEN both RHR HX outlet flow control valves 5% by adjusting the manual controller to 95% on the output meter:

- **CV-31235, "11 RHR HX RC OUTLET FLOW" (1HC-624)**
- **CV-31236, "12 RHR HX RC OUTLET FLOW" (1HC-625)**

Standard:

OPENS CV-31235 and CV-31236 using 1HC-624 and 1HC-625 to 95% on output meters.

Comment:

Terminating cue: WHEN the RHR HX outlet flow control valves CV-31235 and CV-31236 are adjusted open.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:

- **Unit 1 RCS cooldown is in progress per C1.3, "Unit 1 Shutdown"**
- **RCS temperature is 335°F**
- **RCS pressure is 340 psig**
- **RCS boron concentration is 1235 ppm**
- **Unit 1 reactor has been shutdown for 12 hours for a refueling outage**

Initiating Cues:

The Shift Supervisor directs you to place RHR in service starting at step 5.1.25 using the 12 RHR Pump.

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Perform "Quarterly Turbine Stop, Governor, and Intercept Valve Test" per SP 1054

Job Performance Measure No: SRO/RO B.1.d

K/A Reference: 045 A4.01 [3.1/2.9]
045 A4.06 [2.8/2.7]

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:
Unit 1 is at 250 MW

Task Standard: Sections 7.1, 7.2, and 7.3 of SP 1054, "Quarterly Turbine Stop, Governor and Intercept Valve Test" completed satisfactorily.

Required Materials: SP 1054, "Quarterly Turbine Stop, Governor and Intercept Valve Test", Sections 7.1, 7.2, and 7.3, Rev 24

General References: SP 1054, "Quarterly Turbine Stop, Governor and Intercept Valve Test", Rev 24

Initiating Cues:
- You are directed by the Shift Supervisor to perform Sections 7.1, 7.2, and 7.3 of SP 1054, "Quarterly Turbine Stop, Governor and Intercept Valve Test".
- The System Load Dispatcher has been notified that SP 1054 is about to commence.
- All Prerequisites and Initial Conditions for performing SP 1054 have been met.
- Two local operators are stationed at the Unit 1 turbine with communications in preparation for performing SP 1054.

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: _____ Minutes | Time Started _____ | Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___1___ Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE control system in IMP IN on Panel 48001, U1 E-H CONT STA.

Standard:

EHC is in IMP IN.

Comment:

___2___ Performance step: SAT/UNSAT

INITIATE a quick plot (Quick Plot SP1054L) with the following ERCS points, and a one(1) second update rate:

- 1P2007A - 1 TURB MS AFTER STOP VLV SV-1P (600 TO 900 psi)
- 1Y0392D - 1 TURB LEFT STOP VLV CL
- 1QO340A - 1 GEN GROSS MW

Standard:

INITIATES for the points identified above.
~~VERIFIES that~~ a quick plot **~~has been initiated~~**.

Comment:

EVALUATOR NOTE: This is the first step in the section to test the Left Stop-Control Valve Assembly (CV-31182).
- A seven (7) minute span on the quick plot computer screen corresponds to a 1 sec update rate.

~~CUE: The quick plot has been initiated and will be monitored during the test by another~~ operator.

___3___ Performance step: SAT/UNSAT

STATION an Outplant Operator at the left stop control valve assembly to check that the movement of the valves are smooth and without abnormalities.

Standard:

VERIFIES that a local operator is stationed at the turbine to check the valves during the test.

Comment:

CUE: A local operator is stationed at the turbine valves to monitor the valves for the test.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___4___ Performance step: SAT/UNSAT

CHECK the following:

- **"SV-1 CLOSED"** indicating light is **NOT LIT**
- **"SV-1 OPEN"** indicating light is **LIT**
- Annunciator 47007-0603, **"TURBINE LEFT STOP VALVE CLOSED"** is **NOT LIT**

Standard:

VERIFIES proper indications.

Comment:

___5___ Performance step: SAT/UNSAT

RECORD the following valve indications, as indicated on 48002, U1 E-H TURB INDICATION:

- (CV-31184) C-1: _____ %
- (CV-31185) C-2: _____ %
- (CV-31186) C-3: _____ %
- (CV-31187) C-4: _____ %

Standard:

RECORDS the turbine control valve "% open" indications.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

---

7 Performance step: **CRITICAL STEP** SAT/UNSAT

DEPRESS and HOLD the "CLOSE SV-1" pushbutton on 48001, U1 E-H CONT STA, at Valve Test Left section.

CHECK the following:

- **CHECKS ~~with other operator~~ to verify that the quick plot shows a momentary decrease in steam pressure >50 psi after ~~the~~ stop valve CLOSES.**
- **"SV-1 CLOSED" indicating light is LIT.** SV-1
- **"SV-1 OPEN" indicating light is NOT LIT.**
- **"CV-1 CLOSED" indicating light is LIT.**
- **"CV-1 OPEN" indicating light is NOT LIT.**
- **"CV-3 CLOSED" indicating light is LIT.**
- **"CV-3 OPEN" indicating light is NOT LIT.**
- **"C-1 Valve position indicator reads CLOSED.**
- **"C-3 Valve position indicator reads CLOSED.**
- **Annunciator 47007-0603, "TURB LEFT STOP VALVE CLOSED" is LIT.**
- **CHECKS with local operator to verify that he observed CV-31182, "1 Stop Valve Left Control Valve" stroke closed.**

Standard:

DEPRESSES and HOLDS the "CLOSE SV-1" pushbutton and VERIFIES proper indications.

Comment:

Concur. Comments incorporated. MClar

CUES:

- ~~**WHEN asked, state that the quick plot showed a momentary decrease in steam pressure of 60 psi after SV-1 was closed.**~~
- X **WHEN asked, state that CV-31182, "1 Stop Valve Left Control Valve" has been locally observed to stroke closed.**
- ~~**IF asked, state that SV-1, CV-1, and CV-3 have locally verified to be closed.**~~

Add 3 steps corresponding to steps 7.2.8, 7.2.9, and 7.2.10 of SP 1054 instead of incorporating into third CUE above.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

---

18 Performance step: **CRITICAL STEP** SAT/UNSAT

RELEASE "CLOSE SV-1" pushbutton and check the following:
- **Check "SV-1 OPEN" indicating light is LIT.**
- **Check "SV-1 CLOSED" indicating light is NOT LIT.**

Standard:

RELEASES "CLOSE SV-1" pushbutton and VERIFIES proper SV-1 indications.

Comment:

---

19 Performance step: **CRITICAL STEP** SAT/UNSAT

DEPRESS and HOLD the "OPEN SV-1" pushbutton until the "OPEN SV-1" backlight is NOT LIT.

CHECK the following:
- **CV-1, CV-2, CV-3 and CV-4 all return to their pre-test position (as recorded in previous step).**
- **Annunciator 47007-0603, "TURBINE LEFT STOP VALVE CLOSED" is NOT LIT.**

Standard:

DEPRESSES and HOLDS the "OPEN SV-1" pushbutton until the "OPEN SV-1" backlight is NOT LIT and VERIFIES proper indications.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

---

12 Performance step: SAT/UNSAT

STATION Outplant Operators at the No. 1A Left Reheat Stop and Intercept Valves to check that movement of the valves is smooth and without abnormalities.

Standard:

VERIFIES that local operators are stationed at the turbine to check the valves during the test.

Comment:

EVALUATOR NOTE: This is the first step in the section to test the 1A Reheat and Intercept Valves.

CUE: Local operators are stationed at the No. 1A Left Reheat Stop and Intercept Valves to monitor the valves for the test.

---

13 Performance step: SAT/UNSAT

CHECK the following:
- "44331, CV-31166, 1A REHEATER STOP VALVE, OPEN" status light is LIT.
- "44335, CV-31167, 1A REHEATER INTERCEPT VALVE, OPEN" status light is LIT.

CHECK the following on 48001, U-1 E-H CONT STA:
- "1RL OPEN" status light is LIT.
- "1IL OPEN" status light is LIT.

Standard:

VERIFIES proper indications for 1A Reheater Stop and Intercept Valves.

Comment:

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

1~~4~~5 Performance step: **CRITICAL STEP** SAT/UNSAT

PRESS and HOLD the "TEST 1IRL" pushbutton on 48001, U1 E-H CONT STA.

CHECK the following:
- **"44331, CV-31166, 1A REHEATER STOP VALVE, CLOSED" status light is LIT.**
- **"44331, CV-31166, OPEN" status light is NOT LIT.**
- **CHECKS with local operator to verify that he observed CV-31166 stroke CLOSED.**
- **"44335, CV-31167, 1A REHEATER INTERCEPT VALVE,CLOSED" status light is LIT.**
- **"44335, CV-31167, OPEN" status light is NOT LIT.**
- **CHECKS with local operator to verify he observed CV-31167 stroke CLOSED.**

CHECK the following on 48001, U1 E-H CONT STA:
- **"1RL CLOSED" status light is LIT.**
- **"1RL OPEN" status light is NOT LIT.**
- **"1IL CLOSED" status light is LIT.**
- **"1IL OPEN" status light is NOT LIT.**

Standard:

DEPRESSES and HOLDS the "TEST 1IRL" pushbutton and VERIFIES proper indications.

Comment:

CUES: -
- WHEN asked, state that CV-31166 has been locally observed to stroke closed.
- WHEN asked, state that CV-31167 has been locally observed to stroke closed.

Add 2 steps corresponding to steps 7.37 and 7.38 of SP 1054 instead of incorporating into step and CUES above.

Concur. Comment incorporated. N Valor

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___18___ Performance step: **CRITICAL STEP** SAT/UNSAT

RELEASE the "TEST 1IRL" pushbutton.

CHECK the following:
- **"44331, CV-31166, 1A REHEATER STOP VALVE, OPEN" status light is LIT.**
- **"44331, CV-31166, CLOSED" status light is NOT LIT.**
- **"44335, CV-31167, 1A REHEATER INTERCEPT VALVE, OPEN" status light is LIT.**
- **"44335, CV-31167, CLOSED" status light is NOT LIT.**

CHECK the following on 48001, U1 E-H CONT STA:
- **"1RL OPEN" status light is LIT.**
- **"1RL CLOSED" status light is NOT LIT.**
- **"1IL OPEN" status light is LIT.**
- **"1IL CLOSED" status light is NOT LIT.**

Standard:

RELEASES "TEST 1IRL" pushbutton and VERIFIES proper Reheat and Intercept Valve indications.

Comment:

Terminating cue: WHEN the test of the 1A Reheat Stop and Intercept Valves is complete.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

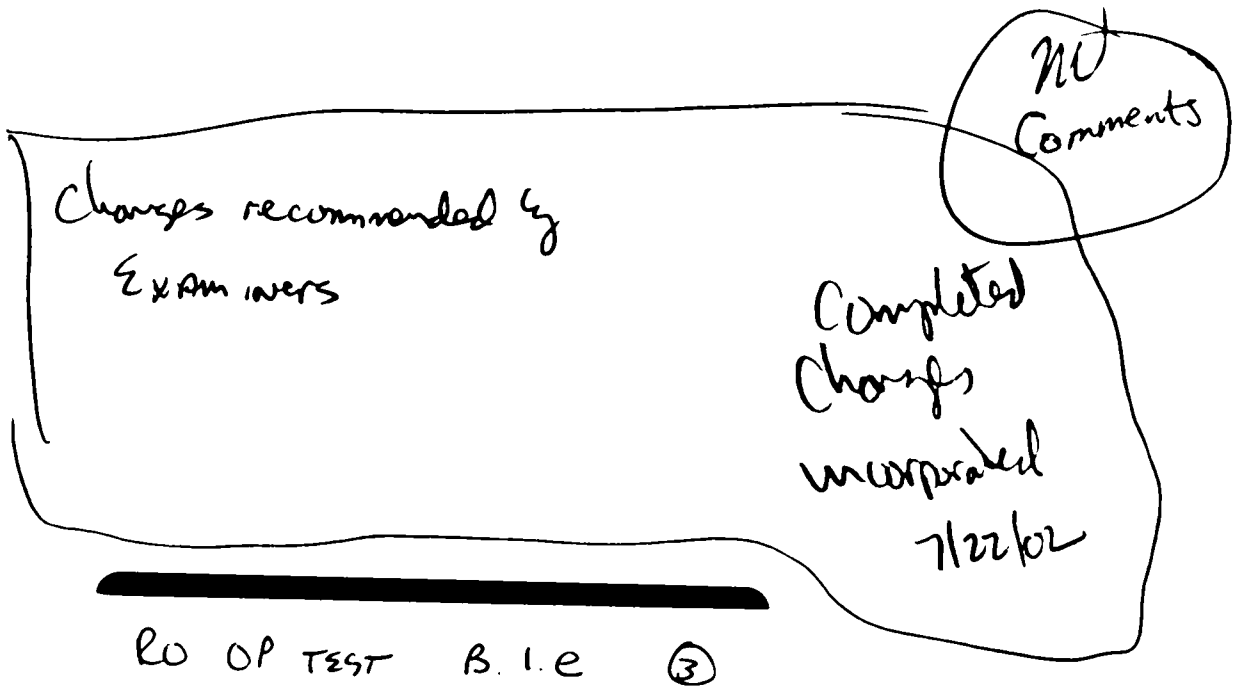
Examiner's signature and date: _____ _____

Initial Conditions:

Unit 1 is at 250 MW

Initiating Cues:

- **You are directed by the Shift Supervisor to perform Sections 7.1, 7.2, and 7.3 of SP 1054, "Quarterly Turbine Stop, Governor and Intercept Valve Test".**
- **The System Load Dispatcher has been notified that SP 1054 is about to commence.**
- **All Prerequisites and Initial Conditions for performing SP 1054 have been met.**
- **Two local operators are stationed at the Unit 1 turbine with communications in preparation for performing SP 1054.**



RO OP TEST B.1.e (3)

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island Task No: _____

Task Title: Manual Start Of D1 Diesel Generator From Control Room Job Performance Measure No:SRO/ROB.1.e

K/A Reference: 064A4.06 [3.9/3.9]

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance __ Actual Performance _X_ Classroom __ Simulator _X_ Plant __

READ TO THE EXAMINEE

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

Initial Conditions:

- D1 diesel generator has been out of service for PM (preventative maintenance).
- Work has been completed and the engineer is ready to test D1.
- D1 restoration alignment has been completed via checklist and WO.
- The system engineer wants to observe diesel performance while fully loaded on the grid.

Task Standard: D1 is running, paralleled and loaded onto Bus 15.

Required Materials: None.

General References: 1C20.7,"D1/D2 Diesel Generators," Rev. 16

Initiating Cues:

- The SS directs you to manually start D1 diesel generator in preparation for synchronizing and loading per 1C20.7, section 5.1. and fully load it per 1C20.7, section 5.1.2.

Time Critical Task: YES/NO Alternate Path: YES/NO

Validation Time: _____ Minutes Time Started _____ Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: SAT/UNSAT

VERIFY no storms or lightning are nearby.

Standard:

Verify no storms or lightning are nearby.

Comment:

CUE: No storms or lightning are nearby.

__2__ Performance step: SAT/UNSAT

At the Woodward Governor, **VERIFY** the governor oil level is above the lower mark on the sight glass.

Standard:

Turbine Building Operator requested to verify governor oil level above the lower mark on the sight glass.

Comment:

CUE: Report as Turbine Building that, "the governor oil level is between the two marks on the sight glass."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___3___ Performance step: SAT/UNSAT

LOG the diesel generator out of service and refer to T.S.3.7 for limiting conditions for operation.

Standard:

Evaluator Note: D1 should already be logged OOS and Tech Spec addressed per initial conditions of this JPM.

D1 is verified logged OOS and SS is reminded of Tech Spec applicability.

Comment:

CUE: D1 is logged OOS and Tech Spec has been addressed.

___4___ Performance step: SAT/UNSAT

SET the governor speed droop at 40.

Standard:

Turbine Building Operator requested to verify that the governor speed droop is set at 40.

Comment:

CUE: Report as Turbine Building Operator that, "the governor speed droop is set at 40."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___5___ Performance step: SAT/UNSAT

VERIFY the generator bearing oil level (NOT engine) is at the upper "NORMAL" stopped level.

Standard:

Turbine Building Operator requested to verify that the generator bearing oil level is at the upper NORMAL stopped level.

Comment:

CUE: Report as Turbine Building Operator that, "the generator bearing oil level is at the upper NORMAL stopped level."

___6___ Performance step: SAT/UNSAT

VERIFY the two amber indicating lights on 44901, D1 DIESEL GEN GOV READY LIGHTS, are ON.

Standard:

Evaluator Note: It may be necessary to adjust the governor speed setting to light the amber lights.

Two amber indicating lights on 44901 are verified ON.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

---

7 Performance step: SAT/UNSAT

VERIFY or set the governor load limit at 10.

Standard:

Turbine Building Operator requested to verify that the governor load limit is set at 10.

Comment:

CUE: Report as Turbine Building Operator that, "the governor load limit is set at 10."

---

8 Performance step: SAT/UNSAT

BEGIN a 3 minute prelube by placing CS-55313, D1 PRE LUBE OIL PUMP in the "ON" position.

Standard:

Evaluator Note: The engine shall be prelubed for at least 3 minutes but less than 10 minutes prior to starting. **If the engine is not started within 10 minutes of prelube, it must be rolled over per a different section of the procedure.** The engine should be started with the prelube oil pump running. The prelube oil pump will stop automatically when the engine reaches 250 rpm

Turbine Building Operator requested to start the prelube oil pump and report when it has been running for 3 minutes.

Comment:

CUE: Report as Turbine Building Operator that, "the pre lube oil pump has been running for 3 minutes with the control switch CS-55313 being held in the ON position."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__9__ Performance step: **CRITICAL STEP** SAT/UNSAT

After a 3 minute prelube, then START D1 using CS-46935, D1 DIESEL GENERATOR.

Standard:

EVALUATOR NOTE: To reduce the fire hazard due to oil accumulation in the exhaust manifolds, non-loaded run time at startup should be minimized.

D1 diesel generator is started by using CS-46935.

Comment:

CUE: Report as Turbine Building Operator that, "the governor load limit is set at 10."

__10__ Performance step: SAT/UNSAT

When the engine starts, then **RELEASE** CS-55313, D1 PRE LUBE OIL PUMP.

Standard:

Turbine Building Operator requested to release CS-55313.

Comment:

CUE: Report as Turbine Building Operator that, "CS-55313 is released."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__11__ Performance step: SAT/UNSAT

VERIFY 41925, D1 EMERG GENERATOR TACHOMETER, indicates approximately 900 rpm.

Standard:

D1 speed verified at approximately 900 rpm.

Comment:

CUE: None.

__12__ Performance step: SAT/UNSAT

VERIFY the two amber indicating lights on 44901, D1 DIESEL GEN GOV READY LIGHTS, are **ON**.

Standard:

EVALUATOR NOTE: It may be necessary to adjust the governor speed setting to light the amber lights.

Two amber indicating lights on 44901 are verified **ON**.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__13__ Performance step: SAT/UNSAT

PLACE CS-46902, D1 DSL GEN EXCITER CONTROL SEL SW, in "MANUAL".

Standard:

CS-46902 placed in MANUAL.

Comment:

CUE: None.

__14__ Performance step: SAT/UNSAT

MAINTAIN 4200 - 4400 volts on 41902, D1 EMERG GEN METER GROUP, using CS-46933, D1 DSL GEN EXCITER CONTROL.

Standard:

4200 - 4400 volts maintained on 41902 by using CS-46933.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__15__ Performance step: SAT/UNSAT

VERIFY Bus 15 Status Panel white indicating light 44325-21, D1 UP TO SPEED & VOLTAGE, is **ON**.

Standard:

44325-21 is verified ON.

Comment:

CUE: None.

__16__ **Performance step:** SAT/UNSAT

VERIFY ERCS Point 1Y7008D, D1 GEN ROOM VENT RUNNING, indicates RUNNING.

Standard:

ERCS Point 1Y7008D, D1 GEN ROOM VENT RUNNING, indicates RUNNING.

Comment:

Screen Shot:
NOTE: 121 DSL GEN ROOM VENT - RUNNING

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

17 Performance step: SAT/UNSAT

On Control Room Panel B-1, **VERIFY** Status Panel indicating light 44103-A2, D1 RUNNING, is ON.

Standard:

44103-A2, D1 RUNNING is verified ON.

Comment:

CUE: None.

18 Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE CS-46948, BKR 15-2 MAN/AUTO CLOSURE SEL SW in "MANUAL".

Standard:

CS-46948 placed in manual.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__19__ Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE CS-46906, Bus 15 SYNCHROSCOPE SEL SW in "D1".

Standard:

CS-46906 placed in D1.

Comment:

CUE: None.

__20__ Performance step: SAT/UNSAT

OPERATE CS-46934, D1 DSL GEN GOVERNOR SPEED CONTROL, until the indicator on 41911, SYNCHROSCOPE, is turning slowly in a clockwise direction.

Standard:

SYNCHROSCOPE, is turning slowly in a clockwise direction.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

21 Performance step: SAT/UNSAT

VERIFY the two white lights on 44900, D1/D2 SYNCHRONIZING LIGHTS, go out as the synchroscope indicator passes 12 o'clock.

Standard:

Two white lights 44900 extinguish as indicator passes 12 o'clock.

Comment:

CUE: None.

22 Performance step: SAT/UNSAT

ADJUST CS-46933, D1 DSL GEN EXCITER CONTROL, until 4191002, 4160 BUS INCOMING VOLTS, indicates slightly greater than 4191001, 4160 BUS RUNNING VOLTS.

Standard:

4191002, 4160 BUS INCOMING VOLTS, indicates slightly greater than 4191001, 4160 BUS RUNNING VOLTS.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__23__ Performance step: SAT/UNSAT

VERIFY approximately 120 volts on 4191001, 4160 BUS RUNNING VOLTS.

Standard:

Running voltmeter 4191001 indicates approximately 120 volts.
Comment:

CUE: None.

__24__ Performance step: **CRITICAL STEP** SAT/UNSAT

As the synchroscope indicator approaches 12 o'clock, CLOSE breaker 15-2 using CS-46950, BUS 15 SOURCE FROM D1 DSL GEN.

Standard:

Breaker 15-2 closed. CS-46950 green light extinguishes; red light illuminates.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___25_ Performance step: SAT/UNSAT

Immediately **VERIFY** D1 picks up some load as indicated on 41915, D1 EMERG GENERATOR POWER.

Standard:

Kilowatt meter 41915 indicating kilowatts being supplied.

Comment:

CUE: None.

___26 Performance step: SAT/UNSAT

VERIFY balanced loading on the following ammeters:
- 41902-04, D1 EMERG GENERATOR PHASE A AMPS
- 41902-05, D1 EMERG GENERATOR PHASE B AMPS
- 41902-06, D1 EMERG GENERATOR PHASE C AMPS

Standard:

D1 phase amp meters 41902-04, 41902-05, and 41902-06 indicating balanced amps.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___27_ Performance step: SAT/UNSAT

PLACE CS-46948, BKR 15-2 MAN/AUTO CLOSURE SEL SW, in "AUTO".

Standard:

CS-46948 placed in auto.

Comment:

CUE: None.

___28_ Performance step: SAT/UNSAT

PLACE CS-46906, BUS 15 SYNCHROSCOPE SEL SW, in "OFF".

Standard:

CS-46906, BUS 15 SYNCHROSCOPE SEL SW, in "OFF".

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

29 Performance step: **CRITICAL STEP** SAT/UNSAT

Over a 3 minute period, INCREASE D1 load to approximately 1650 KW using CS-46934, D1 DSL GEN GOVERNOR SPEED CONTROL.

Standard:

CS-46934 used to increase load to approximately 1650 KW over a 3 minute period.

Comment:

CUE: None.

30 Performance step: **CRITICAL STEP** SAT/UNSAT

RAISE the VARs to approximately 600 KVAR (41916, D1 EMERG GENERATOR REACTIVE LOAD) by adjusting CS-46933, D1 DSL GEN EXCITER CONTROL.

Standard:

CS-46933 used to increase reactive load to approximately 600 KVAR.

Comment:

Terminating cue: D1 diesel generator loaded to ≈ 1650 KW and ≈ 600 KVAR.

Step 31 Go to 2050 MWe

CUE: D1 RUN @ 1650 for 10 min

Step 32 Go to 2500-2700 kW

CUE 10 min @ 2050 KW

Step 33 VARS → 1000

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Changes recommended by examiners

Completed changes incorporated.

RO OP TEST B.I.F ①

Marked up version

Procedures Attached

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Perform NIS Power Range Daily Calibration With Thermal Power Greater Than Instrument Power | Job Performance Measure No: ROB1f

K/A Reference: 015A1.01 [3.5/3.8]

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:

- N41 is 100%, N42 is 99%, N43 is 100%, N44 is 100%.
- Reactor Power and Steam Generator Levels have been stable for the last 48 hours.

Task Standard: Perform SP1005, "NIS Power Range Daily Calibration," Rev. 30. Thermal power will be 101.5% recalibration of N42 is required.

Required Materials: Consumable copy of SP1005, Table 1.

General References: SP1005, "NIS Power Range Daily Calibration," Rev. 30.

Initiating Cues:

- The SS directs you to continue to perform SP1005, "NIS Power Range Daily Calibration."

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: _____ Minutes | Time Started _____ | Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: SAT/UNSAT

PERFORM Steps 6.1 through 6.5.

Standard:

Performs steps 6.1 through 6.5 with no deviations from procedural requirements.

Comment:

CUE: None.

__2__ Performance step: SAT/UNSAT

ENTER ERCS TOC "CALM," option 1.

Standard:

ERCS TOC "CALM," option 1 entered.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__3__ Performance step: SAT/UNSAT

RECORD the following on Table 1, Part A 1st Reading.

- Time of reading
- ERCS REACTOR THERMAL POWER in percent.
- NIS power range channels (N41 thru N44)

Standard:

Table 1, Part A 1st Reading data recorded.

Comment:

CUE: After the readings have been recorded inform the candidate that five minutes have elapsed.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

4 Performance step: SAT/UNSAT

RECORD the following on Table 1, Part A 2nd Reading.

- Time of reading
- ERCS REACTOR THERMAL POWER in percent.
- NIS power range channels (N41 thru N44)

Standard:

Table 1, Part A 2nd Reading data recorded.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___5___ Performance step: SAT/UNSAT

OBTAIN an ERCS Calorimetric Calculation Summary printout, ERCS "CALM" option 2 and attach to this surveillance. [F4 menu then opt 2]

Standard:

An ERCS Calorimetric Calculation Summary printout, ERCS "CALM" option 2 and attached to this surveillance.

Comment:

CUE: After the ERCS Calorimetric Calculation Summary printout, ERCS "CALM" option 2 has been recorded inform the candidate that five minutes have elapsed since the second set of readings.

___6___ Performance step: SAT/UNSAT

RECORD the following on Table 1, Part A 3rd Reading.

- Time of reading
- ERCS REACTOR THERMAL POWER in percent.
- NIS power range channels (N41 thru N44)

Standard:

Table 1, Part A 3rd Reading data recorded.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__7__ Performance step: SAT/UNSAT

COMPLETE the "AVERAGE" column on Table 1, Part A.

Standard:

99.76

EVALUATOR NOTE: The average Thermal Power should read ~~101.5%~~ and average NIS power should be N41 is 100%, N42 is 99%, N43 is 100%, and N44 is 100%.

"AVERAGE" column on Table 1, Part A completed.

Comment:

CUE: None.

See attached SP 1005 page 8

__8__ Performance step: SAT/UNSAT

TRANSFER the "AVERAGE" column from Table 1, Part A to the appropriate "AVERAGE" column on Table 1, Part B.

Standard:

"AVERAGE" column on Table 1, Part A transfered to the appropriate "AVERAGE" column on Table 1, Part B.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

9 Performance step: SAT/UNSAT

COMPLETE the "DIFFERENCE" column in Table 1, Part B.

Standard:

EVALUATOR NOTE: The candidate will determine that N42 requires recalibration per TS 4.1-1.

The "DIFFERENCE" column in Table 1, Part B completed.

Comment:

CUE: None.

10 Performance step: **CRITICAL STEP** SAT/UNSAT

CALIBRATE channel gain for N42 as follows:

- **RE-VERIFY intitial conditions, refer to Section 6.0**
- **RECORD "INITIAL GAIN SETTING" R303 for the NIS Channel in Table 1, Part C.**
- **ADJUST the gain on the NIS POWER RANGE B drawer until NIS power is within the range of, equal to thermal power to .5% greater than thermal power.**
- **LOCK the potentiometer in place.**
- **RECORD the "FINAL GAIN SETTING" in Table 1, Part C.**

Standard:

EVALUATOR NOTE: The recalibration N42 is required per TS 4.1-1, SP1005 requires the recalibration of N41, N43, and N44 as well. Only N42 need be completed for the satisfactory completion of this JPM.

why

N42 has been recalibrated to 101.5 percent, the potentiometers have been locked, and the final gain settings have been recorded on SP1005 Table 1.

Comment: 99.98 440 pot

CUE: None.

When ~~candidate goes to~~ JPM is complete

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__11__ Performance step: SAT/UNSAT

ENTER TOC "SP1005" in ERCS.

Standard:

TOC "SP1005" entered in ERCS.

Comment:

CUE: None.

__12__ Performance step: SAT/UNSAT

SELECT the CALORIMETRIC DATA COLLECTION function.

Standard:

CALORIMETRIC DATA COLLECTION function selected.

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__13__ Performance step: SAT/UNSAT

SELECT the START function.

Standard:

START function selected.

Comment:

CUE: None.

__14__ Performance step: SAT/UNSAT

WHEN ERCS data collection is complete, THEN **ENTER** TOC "SP 1005" in ERCS.

Standard:

TOC "SP 1005" entered in ERCS

Comment:

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

15 Performance step: SAT/UNSAT

SELECT the EDIT/PRINT RESULTS function to substitute the new gain settings.

Standard:

New gain settings substituted.

Comment:

CUE: None.

16 Performance step: SAT/UNSAT

SELECT the SAVE function to save the new settings.

Standard:

The new settings are saved.

Comment:

CUE: None.

Terminating cue: When the candidate has changed the gain and saved the settings for power range channel N42 the JPM has ended.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:

- N41 is 100%, N42 is 99%, N43 is 100%, N44 is 100%.
- Reactor Power and Steam Generator Levels have been stable for the last 48 hours.

Initiating Cues:

- The SS directs you to continue to perform SP1005, "NIS Power Range Daily Calibration."

Changes recommended by License because some info needed to monitor a Unit 2 release was not in the simulator

Changes Incorporated 7/24/02

RO OP TEST B.1.g (1)

Marked up copy

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island Task No: _____

Task Title: Respond To An Abnormal Radiation Level During Waste Gas Release Job Performance Measure No: ROB.1.g

K/A Reference: 071A2.02, 071A3.03 [3.3/3.6, 3.6/3.8]

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance __ Actual Performance _X_ Classroom __ Simulator _X_ Plant __

READ TO THE EXAMINEE

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

Initial Conditions:

- A release of 125 Low Level Gas Decay Tank was just initiated per C21.3-10.5, Releasing Radioactive Gas From 125 Low Level Gas Decay Tank.
- 122 Auxiliary Building Special Exhaust Fan is out of service.

Task Standard: Release of 125 Low Level Gas Decay Tank terminated and Rad Protection notified.

Required Materials: Consumable copy of C21.3-10.5 completed and signed off through step 7.21.

General References: C47047, C47048

Initiating Cues:

- The SS directs you to continue to monitor the release of 125 Low Level Gas Decay Tank per C21.3-10.5.

Time Critical Task: YES/NO Alternate Path: YES/NO

Validation Time: _____ Minutes Time Started 801 Time Finished: 816

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: SAT/UNSAT

DETERMINE the initiating alarm and respond to the alarm as specified in C47048, Train B Radiation Monitoring System Alarm Response Procedures and C47047, Train A Radiation Monitoring System Alarm Response Procedures.

Standard:

Determines by observing rad monitor panel indications, that 2R-30 and 2R-37, Aux Bldg Vent Gas Monitors B and A are in alarm with meter deflection above CPM setpoint.

Comment:

CUE: After simulator is in run insert overrides to cause Train A, Train B, RM 30, and RM 37 high radiation alarms.

→ Respond per the ARP

2R30 and 2R37 have gone into alarm @ the top of the scale off scale high

Suspend the release per Step 7.7

__2__ Performance step: SAT/UNSAT

VERIFY automatic actions have occurred.

C47047 2R-37

Standard:

Determines that 122 Auxiliary Building Special Exhaust Fan is not available and that 121 Auxiliary Building Special Exhaust Fan did not start.

Comment:

C47048 2R-30

CUE: None.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___3___ Performance step: **CRITICAL STEP** SAT/UNSAT

START 121 Auxiliary Building Special Exhaust Fan by placing CS-46070 in "START".

Standard:

CS-46070 placed in START.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

_4_ Performance step: SAT/UNSAT

VERIFY when 121 Special Exhaust Fan breaker CLOSES, then:
- 121 Aux. Bldg. Special Exhaust Fan Discharge damper MD-32236 OPENs.
- 121 Aux. Bldg. Special Vent Filter Heater Starts.
- 11, 12, 21, and 22 Aux. Bldg. Makeup Air Fans stop and associated inlet and outlet dampers CLOSE.
- 11 and 21 Aux. Bldg. General Exhaust Fans stop and associated discharge dampers CLOSE.
- Laundry, Locker, and Filter Room Ventilation Exhaust Fans stop and associated dampers CLOSE.
-

Standard:

- 121 Aux. Bldg. Special Exhaust Fan Discharge damper MD-32236 verified open by observing U1 SI Active PNL 44103, A-10 and U2 SI Active PNL 44514, A-10 illuminated.
- 121 Aux. Bldg. Special Vent Filter Heater verified started by observing U1 Ventilation Panel 44071-0409 illuminated.
- 11, 12, 21, and 22 Aux. Bldg. Makeup Air Fans verified stopped by observing CS-46104, CS-46105, CS-46594, CS-46595 red lights extinguished and green lights illuminated; and associated inlet and outlet dampers verified closed by observing U1 Ventilation Panel 44071-0109, 0110, 0209, and 0210 extinguished.
- Laundry, Locker, and Filter Room Ventilation Exhaust Fans verified stopped and associated dampers closed by observing U1 Ventilation Panel 44071-0604, 0605, and 0205 extinguished; and 44071-0504, 0505, and 0105 illuminated.
- 11 and 21 Aux. Bldg. General Exhaust Fans verified stopped and associated discharge dampers closed by observing U1 Ventilation Panel 44701-0111 and 0112 extinguished.

Comment:

CUE: When asked, inform candidate that, "U2 SI Active PNL 44514, A-10 is illuminated."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___5___ Performance step: **CRITICAL STEP** SAT/UNSAT

VERIFIES CLOSED, Low Activity Gas Decay Tanks Plant Vent valve CV-31271.

Standard:

As Auxiliary Building Operator, report that, "CV-31271 is NOT closed." When directed to close CV-31271, acknowledge direction and then report that, "CV-31271 is closed."

Comment:

CUE: None

___6___ Performance step: SAT/UNSAT

VERIFY radiation level high on RD Panel by observing both 2R-37 and 2R-30.

Standard:

Determines that radiation levels high on both 2R-37 and 2R-30.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

7 Performance step: **CRITICAL STEP** SAT/UNSAT

NOTIFY Radiation Protection Group.

Standard:

Radiation Protection Group notified that 2R30 and 2R37 have alarmed.

Comment:

CUE: As Radiation Protection Group, acknowledge notification.

Terminating cue: When the candidate notifies the Radiation Protection Group

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____
_____

Response:_____
_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Evaluator Guide

- Initialize the simulator to IC-10.
- Place the simulator in "RUN".
- Enable ERCS alarm point 1U4101D, Waste Gas Release Wind Condition using OVRD and ADD/OMIT TOCs per C41.2.
- Set up one of the ERCS terminals for group display "OPWIND" on a 5-second update time and verify that wind direction is from between 61° and 329° or wind speed is > 10 mph.
- Mark up a consumable copy of C21.3-10.5, Releasing Radioactive Gas From 125 Low Level Gas Decay Tank as follows:
- Enter the actual simulator background readings for 2R-30 and 2R-37 in the appropriate steps for background readings.
- Add 7.5 X 10^3 to the 2R-30 background reading and 1 X 10^4 to the 2R-37 background reading and enter these numbers in the appropriate steps for bug source readings.
- Perform the bug source reading minus background reading calculation and verify results are within specified limits.
- Enter the actual simulator 10-meter average wind speed and wind direction in the appropriate steps.
- Sign for Shift Supervisor Release Approval and enter current date and time minus 30 minutes.
- Sign off all steps up to, but excluding the step that terminates the release when the tank is depressurized.
- Fill in Attachment A as follows:
- Enter the date that the tank was placed on hold as three months prior to the current date.
- Enter the release start tank pressure as 105 psig.
- Enter the release start date as the current date.
- Enter the release start time as close to the time of initiating JPM performance as possible.
- Sign for the operator's signature.
- Place 122 Auxiliary Building Special Exhaust Fan in pullout and hang secure card.
- Place the simulator in "FREEZE".
- When the candidate is ready, place the simulator in "RUN".

Insert overrides to cause Train A, Train B, RM 30, and RM 37 high radiation alarms.

Initial Conditions:

- A release of 125 Low Level Gas Decay Tank was just initiated per C21.3-10.5, Releasing Radioactive Gas From 125 Low Level Gas Decay Tank.
- 122 Auxiliary Building Special Exhaust Fan is out of service.

Initiating Cues:

- The SS directs you to continue to monitor the release of 125 Low Level Gas Decay Tank per C21.3-10.5.

→ OPWIND screen should be up as an initial condition

Show the SPM w/ the alarms in

Unit 2 is monitoring the release - respond to the alarm

There is a Unit 2 release in progress. The U-2 operator is monitoring the release - alarms 47022 0108 & 0109 have alarmed the SS directs you to respond per the ARP

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Manually Borate the RCS from Outside the Control Room | Job Performance Measure No: SRO/RO B.2.a

K/A Reference: 004 A2.14 [3.8/3.9]

Examinee: _____ | NRC Examiner: _____

Facility Evaluator: _____ | Date: _____

Method of testing:

Simulated Performance _X_ Actual Performance __ Classroom __ Simulator __ Plant _X_

READ TO THE EXAMINEE

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

Initial Conditions:

- The Control Room was evacuated due to toxic gas
- Unit 1 and Unit 2 reactors were tripped
- Communications have been established between the Boric Acid Blender Area and the Hot Shutdown Panel
- You are replacing the Auxiliary Plant Equipment Operator (APEO) in the Auxiliary Building
- Power is available

Task Standard: Boric Acid Pump started and proper valve lineup completed for boration of RCS from the Hot Shutdown Panel.

Required Materials: 1C1.3 AOP1, "Shutdown From Outside the Control Room - Unit 1", Step 2.4.30, Rev 6

General References: 1C1.3 AOP1, "Shutdown From Outside the Control Room - Unit 1", Rev 6

Initiating Cues:

The Unit 1 Shift Supervisor directs you to borate the Unit 1 RCS for 40 minutes from the boric acid blender area using the 12 Boric Acid Transfer Pump per 1C1.3 AOP1, "Shutdown From Outside the Control Room - Unit 1" beginning at Step 2.4.30.D.

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: _____ Minutes | Time Started _____ | Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___1___ Performance step: **CRITICAL STEP** SAT/UNSAT

PLACE control switch for 12 boric acid transfer pump LOCAL/REMOTE switch in "LOCAL" (CS-51507, "12 BA XFER PMP LCL/REM").

Standard:

PLACES control switch for 12 boric acid transfer pump LOCAL/REMOTE switch in "LOCAL".

Comment:

CUE: The control switch for 12 boric acid transfer pump LOCAL/REMOTE switch is in "LOCAL".

___2___ Performance step: **CRITICAL STEP** SAT/UNSAT

START the 12 Boric Acid Transfer Pump in FAST SPEED by depressing control switch CS-51508, "12 BA XFER PMP RNNG FAST PB".

Concur. Changes incorporated. M Valo

Standard:

STARTS the 12 Boric Acid Transfer Pump in FAST SPEED.

Comment:

Change to reflect indication available at local panel

CUE: RED light 5150801 is LIT ~~**The 12 Boric Acid Transfer Pump is running in FAST SPEED**~~.

___3___ Performance step: SAT/UNSAT

PLACE the control switch for Emergency Boration Valve MV-32086 in "LOCAL" (CS-19580, "EMERG BOR TO CHG PMPS ISOL MV-32086 LCL/REM").

Standard:

PLACES the control switch for Emergency Boration Valve MV-32086 in "LOCAL".

Comment: EVALUATOR NOTE: This step and the rest of the steps are performed in the Auxiliary Building.

CUE: Control switch for Emergency Boration Valve MV-32086 is in "LOCAL".

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___4___ Performance step: SAT/UNSAT

PLACE control switch for MV-32086, "EMERGENCY BORATION TO CHARGING PUMPS ISOL VALVE" in "OPEN" (CS-19581, "EMERG BOR TO CHG PMPS ISOL MV-32086").

Standard: **PLACES** the control switch for Emergency Boration Valve MV-32086 to "OPEN".

Comment:

EVALUATOR NOTE: Faulting of this step should result in the applicant going to the next step (Step 2.40.G) OR to manually OPEN valve MV-32086. ← add this since to verify valve MV-32086 opens, he may take action to manually open valve.

CUES:
- The control switch for Emergency Boration Valve MV-32086 is in "OPEN" position.
- Valve is not indicating movement, no flow indicated.
- **IF** applicant wants to inform the Shift Supervisor of the failure of the Emergency Boration Valve to open, **THEN** state that we must get emergency boration started and what does he recommend.
- **IF** checked, state that breaker 1L2-B4 indicates tripped.

___5___ Performance step: SAT/UNSAT

OPEN breaker 1L2-B4 for MV-32086, "EMERGENCY BORATION TO CHARGING PUMPS ISOL VALVE".

Standard:

LOCATED and **VERIFIES** breaker 1L2-B4 (for MV-32086 at MCC 1L Bus 2, Cell B4) is OPEN. ← add for clarity and to reflect labelling in field.

Comment:

EVALUATOR NOTE: Applicant may indicate that he would open breaker.

CUE: Breaker 1L2-B4 indicated tripped.

Concur.
Comments incorporated
NLL

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___6___ Performance step: **CRITICAL STEP** SAT/UNSAT

Manually OPEN MV-32086, "EMERG BORATION TO CHG PMP SUCT".

Standard:

Manually OPENS MV-32086, "EMERG BORATION TO CHG PMP SUCT".

Comment:

CUES: - **If applicant asks for an electrician to relieve the torque on the valve actuator per 5AWI 15.5.1, inform him that this is an emergency situation and the Shift Supervisor has waived this requirement.**
- **Handwheel engages, ~~valve opens~~, valve stem ~~indicator is flush with upper~~ red ~~mark.~~** is moving, and valve is open

There is NO red mark for this valve

___7___ Performance step: SAT/UNSAT

Locally **THROTTLE** VC-11-58, "EMERG BORATION TO CHG PMP SUCT THROTTLE VLV" to obtain 12 gpm as indicated on local flowmeter 1FI-113. **BEGIN** timing the boric acid addition.

Standard:

Locally **THROTTLES** VC-11-58 to obtain 12 gpm as indicated on local flowmeter 1FI-113. **BEGINS** timing the boric acid addition.

Comment:

CUE: ~~-~~The flowmeter indicates 12 gpm. ~~-~~40 minutes have elapsed.

___8___ Performance step: SAT/UNSAT

Manually **CLOSE** MV-32086, "EMERG BORATION TO CHG PMP SUCT"

Standard:

Manually **CLOSES** MV-32086.

Comment:

CUE: Handwheel engages, ~~valve closes~~, valve stem ~~indicator is flush with lower red mark~~. is moving, and valve is closed.

Terminating cue: WHEN MV-32086 is closed after completing the boric acid addition.

Comm. Comments incorporated. Nbl

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:

- The Control Room was evacuated due to toxic gas
- Unit 1 and Unit 2 reactors were tripped
- Communications have been established between the Boric Acid Blender Area and the Hot Shutdown Panel
- You are replacing the Auxiliary Plant Equipment Operator (APEO) in the Auxiliary Building
- Power is available

Initiating Cues:

The Unit 1 Shift Supervisor directs you to borate the Unit 1 RCS for 40 minutes from the boric acid blender area using the 12 Boric Acid Transfer Pump per 1C1.3 AOP1, "Shutdown From Outside the Control Room - Unit 1" beginning at Step 2.4.30.D.

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Transfer Unit 1 Auxiliary Feedwater Pump Suction from the CST to Cooling Water per C28.1 AOP2

Job Performance Measure No: SRO/RO B.2.b

K/A Reference: 061 K4.01 [4.1/4.2]

Examinee: _____ NRC Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:
Simulated Performance _X_ Actual Performance __ Classroom __ Simulator __ Plant _X_

READ TO THE EXAMINEE

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

be reflect correct number of procedure

Initial Conditions:

- Unit 1 reactor was tripped due to a small break LOCA and ES-1~~.2~~.1, "Post LOCA Cooldown and Depressurization" is in progress.
- The 11 Turbine-Driven Auxiliary Feedwater Pump (TD AFWP) is the only AFW pump available and running (an AFW pump is needed for the present plant condition).
- CST level is just above four feet and the "CONDENSATE STORAGE TANK LO LO LVL" annunciator is in.
- MCC 1A1 has been lost due to an electrical fault.
- You are an extra local operator.

Correct. Comment incorporated. NVB

Task Standard: 11 Turbine-Driven Auxiliary Feedwater Pump suction transferred from the Condensate Storage Tank to the Cooling Water system.

Required Materials: C28.1 AOP2, "Loss of Condensate Supply to Auxiliary Feedwater Pump Suction", Steps 2.5 and 2.6, Rev 4

General References: C28.1 AOP2, "Loss of Condensate Supply to Auxiliary Feedwater Pump Suction", Rev 4

Initiating Cues:

The Unit 1 Shift Supervisor directs you to:

- Transfer the 11 TD AFWP from the CST to the Cooling Water supply per C28.1 AOP2, "Loss of Condensate Supply to Auxiliary Feedwater Pump Suction" beginning at Step 2.4.5.
- Since power has been lost to MCC 1A1, the suction MOVs in Step 2.4.5 for the 11 TD AFWP are to be manually aligned locally at the valves instead of from the Control Room.
- After completing all local alignments, open the MCC breakers at MCC 1A1 for the MOVs in Step 2.4.5 for the 11 TD AFWP.

Time Critical Task: YES/NO Alternate Path: YES/NO
Validation Time: _____ Minutes Time Started _____ Time Finished: _____

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

__1__ Performance step: **CRITICAL STEP** SAT/UNSAT

Manually OPEN MV-32025, "11 TD AFW PUMP SUCTION COOLING WATER SUPPLY MOV".

Standard:

Manually OPENS MV-32025, "11 TD AFW PUMP SUCTION COOLING WATER SUPPLY MOV".

Comment:

CUES:
- **If applicant asks for an electrician to relieve the torque on the valve actuator per 5AWI 15.5.1, inform him that this is an emergency situation and the Shift Supervisor has waived this requirement.**
- **Handwheel engages, ~~valve opens,~~ valve stem indicator is ~~flush with upper red mark~~.** moving up, and moves up to top of slot.

__2__ Performance step: **CRITICAL STEP** SAT/UNSAT

There is NO red mark for valve in the field.

Manually CLOSE MV-32333, "11 TD AFW PUMP SUCTION FROM CST MOV".

Standard:

Manually CLOSES MV-32333, "11 TD AFW PUMP SUCTION FROM CST MOV".

Comment:

CUE: Handwheel engages, ~~valve closes~~, valve stem ~~indicator is flush with lower red mark.~~ is moving down, and moves downward to wear mark on stem.

__3__ Performance step: SAT/UNSAT

Concur. Comments incorporated. NLS

CLOSE CL-115-3, "11 TD AFW PMP COOLING WTR SUPPLY DNSTRM VENT".

Standard:

CLOSES CL-115-3, "11 TD AFW PMP COOLING WTR SUPPLY DNSTRM VENT".

Comment:

CUE: CL-115-3 is closed.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

4 Performance step: SAT/UNSAT

TRANSFER the 11 TD AFWP recirculation flow to Cooling Water:

- **OPEN** AF-32-3, "11 TD AFWP RECIRC TO UNIT 1 COOLING WATER HEADER"
- **CLOSE** AF-33-1, "11 TD AFWP RECIRC TO 11 CST"

Standard:

OPENS AF-32-3 and **CLOSES** AF-33-1 to transfer 11 TD AFWP recirc from the Unit 1 CST to the Cooling Water header.

Comment:

EVALUATER NOTE. Valve AF 33-1 has a RED tag.

CUE: AF-32-3 is open after simulating manipulation of valve.
AF-33-1 is closed after simulating manipulation of valve.

Minor enhancements

5 Performance step: SAT/UNSAT

OPEN MCC breakers at MCC 1A1 for the following valves:
- MV-32025, "11 TD AFW PUMP SUCTION COOLING WATER SUPPLY MOV"
- MV-32333, "11 TD AFW PUMP SUCTION FROM CST MOV"

Standard:

LOCATES and **OPENS** MCC breakers for MV-32025 and MV-32333.

Comment:
— MV-32025, at MCC 1A Bus 1, Cell A2
— MV-32333, at MCC 1A Bus 1, Cell B2

Concur. Comments incorporated. [illegible]

CUES:
- MCC breaker for MV-32025 is OPEN after simulating deenergization of MCC.
- MCC breaker for MV-32333 is OPEN after simulating deenergization of MCC.

Terminating cue: WHEN the MCC breakers at MCC 1A1 for the MOVs for the 11 TD AFWP suction supply have been deenergized.

VERIFICATION OF COMPLETION

Job Performance Measure No. _____

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____

Initial Conditions:

- Unit 1 reactor was tripped due to a small break LOCA and ES-1.2, "Post LOCA Cooldown and Depressurization" is in progress.
- The 11 Turbine-Driven Auxiliary Feedwater Pump (TD AFWP) is the only AFW pump available and running (an AFW pump is needed for the present plant condition).
- CST level is just above four feet and the "CONDENSATE STORAGE TANK LO LO LVL" annunciator is in.
- MCC 1A1 has been lost due to an electrical fault.
- You are an extra local operator.

Initiating Cues:

The Unit 1 Shift Supervisor directs you to:

- Transfer the 11 TD AFWP from the CST to the Cooling Water supply per C28.1 AOP2, "Loss of Condensate Supply to Auxiliary Feedwater Pump Suction" beginning at Step 2.4.5.
- Since power has been lost to MCC 1A1, the suction MOVs in Step 2.4.5 for the 11 TD AFWP are to be manually aligned locally at the valves instead of from the Control Room.
- After completing all local alignments, open the MCC breakers at MCC 1A1 for the MOVs in Step 2.4.5 for the 11 TD AFWP.

Changes recommended by Examiners

Marked up Version

[redacted]

ECCP Test B 2 C (1)

Appendix C | Job Performance Measure Worksheet | Form ES-C-1 (R8, S1)

Facility: Prairie Island | Task No: _____

Task Title: Cross-Connect U2 to U1 CC System per 1CC14 AOP3 | Job Performance Measure No:SRO/ROB.2.c

K/A Reference: 008A2.01 [3.3/3.6]

Examinee: _____ | NRC Examiner: _____

Facility Evaluator: _____ | Date: _____

Method of testing:

Simulated Performance _X_ Actual Performance __ Classroom __ Simulator __ Plant _X_

READ TO THE EXAMINEE

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

Initial Conditions:

- The 12 CC pump failed due to high bearing vibration while the 11 CC pump was out-of service for routine maintenance. There is currently no CC flow on Unit 1.
- Unit 1 is at 70% power and decreasing due to being in Technical Specification 3.0.C.
- 1C14 AOP3, is completed through step 2.4.3, the 22 CC has been started.

Task Standard: 22 CC pump is running and supplying cooling water to Unit 1.

Required Materials: Field copy of 1C14 AOP3, "Cross Connecting Unit 2 to Unit 1 Component Cooling System," Rev. 3W.

General References: 1C14 AOP3, "Cross Connecting Unit 2 to Unit 1 Component Cooling System," Rev. 3W.

Initiating Cues:

- The SS directs you to cross connect the Unit 2 CC system to Unit 1, 1C14 AOP3, is completed through step 2.4.3, the 22 CC has been started.

Time Critical Task: YES/NO | Alternate Path: YES/NO

Validation Time: 25 Minutes | Time Started _____ | Time Finished: _____

Note which valves are reverse operating see last lists

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

1 Performance step: SAT/UNSAT

EVALUATOR NOTE: MCC 1K1-B4 should already be out-of-service closed. off

PLACE the following breakers to "ON:"

MCC 1K1-B4, 11 CC PMP SUCT MV-32200

MCC 1KA2-E2, 12 CC PMP SUCT MV-32201

Standard:

MCC 1KA2-E2, 12 CC PMP SUCT MV-32201 is on.

Comment:

CUE: If ~~asked then~~ MCC 1K1-B4 is already out-of-service closed off

2 Performance step: SAT/UNSAT

EVALUATOR NOTE: MV-32200 should already be out-of-service closed.

CLOSE MV-32200, 11 CC SURGE TNK TO 11 CC PUMP, using CS-46033.

Standard:

MV-32200, 11 CC SURGE TNK TO 11 CC PUMP is closed.

Comment:

CUE: If asked then MV-32200 is already be out-of-service closed.

TO 62 Down In Control Room Required

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

_3_ Performance step: SAT/UNSAT

CLOSE MV-32201, 11 CC SURGE TNK TO 12 CC PUMP, using CS-46035.

Standard:

MV-32201, 11 CC SURGE TNK TO 12 CC PUMP is closed.

Comment:

CUE: None.

CALL Control Room

_4_ Performance step: SAT/UNSAT

EVALUATOR NOTE: MCC 1K1-B4 should already be out-of-service closed.

PLACE the following breakers to "OFF:"

MCC 1K1-B4, 11 CC PMP SUCT MV-32200

MCC 1KA2-E2, 12 CC PMP SUCT MV-32201

Standard:

MCC 1K1-B4, 11 CC PMP SUCT MV-32200 and **MCC 1KA2-E2**, 12 CC PMP SUCT MV-32201 are off

Comment:

CUE: MCC 1K1-B4 is already out-of-service closed.

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

___5__ Performance step: SAT/UNSAT

IF **desired**, THEN attach secure cards for SS to the following:

CS-46033, 11 CC PMP SUCT MV-32200

CS-46035, 12 CC PMP SUCT MV-32201

Standard:

Operator determines that additional out-of-service cards are not required.

Comment:

CUE: SS wants the lineup completed. Out-of-service cards will be hung later.

___6__ Performance step: SAT/UNSAT

OPEN the CC suction and discharge cross-ties:

CC-1-15, U1/U2 CC PMPS SUCT X-TIE

CC-1-16, U1/U2 CC PMPS DISCH X-TIE

Standard:

CC-1-15, U1/U2 CC PMPS SUCT X-TIE and **CC-1-16**, U1/U2 CC PMPS DISCH X-TIE are open.

Comment:

CUE: None

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

7 Performance step: 7 SAT/UNSAT

OPEN the suction and discharge cross-connects for the CC pump started in Step 2.4.2

22 CC Pump

2CC-1-12, 22 CC PMP SUCT X-TIE

2CC-1-14, 22 CC PMP DISCH X-TIE

Standard:

2CC-1-12, 22 CC PMP SUCT X-TIE and **2CC-1-14**, 22 CC PMP DISCH X-TIE are open.

Comment:

CUE: None.

8 Performance step: 7 SAT/UNSAT

Complete 11 CC Surge Tank isolation:

CLOSE CC-30-12, 11 CC PMP RECIRC LINE

CLOSE CC-30-11, 12 CC PMP RECIRC LINE

CLOSE CC-27-8, 11 CC SURGE TNK X-TIE ISOL Difficult to find include copy of N- sheet list w/

Standard:

CC-30-12, 11 CC PMP RECIRC LINE, CC-30-11, 12 CC PMP RECIRC LINE, and CC-30-12, 11 CC PMP RECIRC LINE are closed.

Comment:

CUE: None.

JPM Passed

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

9 Performance step: **CRITICAL STEP** 7 SAT/UNSAT

VERIFY Unit 1 CC pump suction and discharge cross-connects are OPEN:

CC-1-13, 11 CC PMP DISCH X-TIE

CC-1-14, 12 CC PMP DISCH X-TIE

C-1-11, 11 CC PMP SUCT X-TIE

CC-1-12, 12 CC PMP SUCT X-TIE

Standard:

CC-1-11, 12, 13, and 14 are verified open.

Comment:

CUE: Report as Turbine Building Operator that, "the governor load limit is set at 10."

PERFORMANCE INFORMATION

(Denote critical steps with **BOLD**)

10 Performance step: SAT/UNSAT

IF adequate CC flow is not being provided to Unit 1, THEN **CLOSE** the CC heat exchanger inlet valve associated with the CC pump started in Step 2.4.2:

2CC-1-5, 21 CC HX INLT

OR

2CC-1-6, 22 CC HX INLT

Standard:

2CC-1-6, 22 CC HX INLT closed.

Comment:

CUE: If asked the control room reports that adequate CC flow is not yet being provided to Unit 1.

Terminating cue: When 2CC-1-6 is closed the JPM has ended.

Initial Conditions:

- The 12 CC pump failed due to high bearing vibration while the 11 CC pump was out-of service for routine maintenance. There is currently no CC flow on Unit 1.
- Unit 1 is at 70% power and decreasing due to being in Technical Specification 3.0.C.
- 1C14 AOP3, is completed through step 2.4.3, the 22 CC has been started.

Initiating Cues:

- The SS directs you to cross connect the Unit 2 CC system to Unit 1, 1C14 AOP3, is completed through step 2.4.3, the 22 CC has been started.

VERIFICATION OF COMPLETION

Job Performance Measure No.

Examinee's Name:

Examiner's Name:

Date performed:

Facility Evaluator:

Number of attempts:

Time to complete:

Question Documentation:

Question:_____
_____
_____

Response:_____
_____
_____
_____

Result: SAT or UNSAT

Examiner's signature and date: _____ _____