

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: Energize Bus 24C From the RSST (Alternate Path)

ID Number: JPM-01S

Revision: 0

II. Initiated:

\_\_\_\_\_  
R. J. Ashev *Richard J. Ashev* 6/16/03  
Developer Date

III. Reviewed:

\_\_\_\_\_  
R. Cimmino *Robert D. Cimmino* 8/4/03  
Technical Reviewer Date

IV. Approved:

\_\_\_\_\_  
User Department Supervisor Date

\_\_\_\_\_  
*Tralton* 8/6/03  
Nuclear Training Supervisor Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-01S

Rev. 0

Task Title: Energize Bus 24C From the RSST (Alternate Path)

System: \_\_\_\_\_

Time Critical Task: Yes \_\_\_\_\_ No X

Validated Time (minutes): 30

Task No.(s): NUTIMS #062-025-01-01

Applicable To: SRO X RO X PEO \_\_\_\_\_

K/A No. 062-A4.01 K/A Rating 3.3/3.1

### Method of Testing:

Simulated Performance: \_\_\_\_\_ Actual Performance: X

### Location:

Classroom: \_\_\_\_\_ Simulator: X In-Plant: \_\_\_\_\_

Task Standards: At the completion of this JPM, the examinee has energized Bus 24C from Unit 3 per Appendix 23 of EOP 2541.

Required Materials  
(procedures,  
equipment): EOP 2541, Appendix 23

General References: EOP 2541, Appendix 23

### **\*\*\*\* READ TO THE EXAMINEE \*\*\*\***

*I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.*

## JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-01S

Rev. 0

- Initiating Cues:
- You are the SPO.
  - The Unit Supervisor has directed you to energize Bus 24C from the RSST.

- Initial Conditions:
- The plant was tripped due to a LOCA.
  - EOP 2525, Standard Post Trip Actions have been completed and the crew has transitioned to EOP 2532, Loss of Coolant.
  - Bus 24C is de-energized due to a failure to automatically transfer to the RSST.
  - "A" DG is out for PM's.
  - There are NO faults indicated on bus 24C
  - There are NO faults indicated on the RSST.

Simulator Requirements: Initialize at any 100% power IC.

Enter the following:

- "A" DG OOS w/ air starts closed (EGR12) and output breaker racked out (EGR17).
- Reset "A" DG trouble alarm (EGR16).
- Place yellow tag on "A" DG breaker switch (A312) on C-08.

Insert a large break LOCA (RC02A at 30%)

Open breaker A302 (RSST to Bus 24C)

Perform the actions of EOP 2525, Standard Post Trip Actions

Insert an I/O to prevent breaker A302 from closing (Under the I/O for ED, select ON for CS-2/22S3-24C2 TRP).

Ensure Auto Aux Feed Override switches are in Pull-To-Lock.

Place the simulator in FREEZE.

When examinee is ready, place the simulator in RUN.

### \*\*\*\*\* NOTES TO EXAMINER \*\*\*\*\*

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. This JPM will be done in parallel with JPM-02S, Placing the Hydrogen Recombiner in Service.

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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

STEP 1    \_\_\_    Performance Steps:    Check the Unit 2 RSST energized.

GRADE    \_\_\_    Standards:    *Examinee determines the RSST is energized by observing the voltmeter on C-08 for the RSST reading approximately 4160V.*

Cue:    **None**

Comments:    If examinee does NOT state this, question what they are observing.

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STEP 2    \_\_\_    Performance Steps:    Check that NO fault indications are present for 4.16kv bus 24C.

GRADE    \_\_\_    Standards:    *Examinee checks lit annunciators on C-08 and determines that none of the RSST lockout or audio tone operation alarms are in alarm.*

Cue:    **None**

Comments:

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STEP 3    \_\_\_    Performance Steps:    ENSURE all of the following breakers are open (C-08):  
• A304, 24A/24C TIE BKR, 24C-1T-2  
• A305, 24C/24E TIE BKR, 24C-2T-2  
• A312, DG A FDR BKR, 15G-12U-2

GRADE    \_\_\_    Standards:    *Examinee observes that the breakers are open OR takes action to open them.*

Cue:    **None**

Comments:    Examinee may choose to take A304's hand switch to "TRIP" to clear the amber light. This is acceptable.

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 4            Performance Steps:    ENSURE A702 "RSS FDR BKR 24C/24D,  
22S3-2-2 " is closed (C-08).

GRADE                 Standards:    *Examinee verifies A702 is closed by its red light only lit on  
C-07.*

Cue: **None**

Comments:

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STEP 5    X    Performance Steps:    Place "SYN SW, 22S3-24C-2 (A302)" to "ON" and  
check "Incoming" voltage indicated (C-08).

GRADE         X    Standards:    *Examinee observes note above step and places  
synchroscope switch in slot for 22S3-24C-2, turns it to "ON"  
and observes voltage reading of ~ 120 on the INCOMING  
voltmeter.*

Cue: **None**

Comments:

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STEP 6    X    Performance Steps:    Place ALL four "UV BUS A3" ESAS channel bypass  
keyswitches to the "INHIBIT" position (Key26) (ESF  
Sensor Cabinets).

GRADE         X    Standards:    *Examinee places each of the 4 bypass keys into the "UV Bus  
A3" keyholes for each channel of ESAS, and turns each to  
"INHIBIT."*

Cue: **None**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

STEP 7 X Performance Steps: PRESS facility 1 "UV RESET" button (ESAS Actuation Cabinet 5).

GRADE     X Standards: *Examinee pushes the "UV" button on ESAS Actuation Cabinet 5.*

Cue: **None**

Comments: The examinee may use the resetting of annunciator C-33 on C-01 (ESAS UV CH 1 TRIP), as verification that undervoltage has reset.

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STEP 8     Performance Steps: Place BOTH of the following control switches in "Pull to lock"  
• Service Water Pump A  
• RBCCW Pump A

GRADE         Standards: *Examinee places the control switches in Pull-to-Lock*

Cue: **None**

Comments:

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STEP 9     Performance Steps: Place BOTH SG Auto Aux Feed Override Switches in "Pull To Lock"

GRADE         Standards: *Examinee places both auto aux feed override switches in pull to lock.*

Cue: **None**

Comments:

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## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 10            Performance Steps:    Override all of the following control switches to prevent an inadvertent automatic start:

- HPSI Pump A
- LPSI Pump A
- Containment Spray Pump A

GRADE                 Standards:    *Examinee places the three pump hand switches to the START position then to the OFF position.*

Cue:    **None**

Comments:

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STEP 11    X    Performance Steps:    Close A302 "RSS SPLY BKR, 22S3-24C-2."

GRADE         X    Standards:    *Examinee attempts to close A302 by taking its hand switch to the CLOSE position and observes the amber 'Trip' light lit.*

- *Examinee reports the failure to the US.*
- *Examinee recommends energizing bus 24E from Unit 3 per Attachment 23N, then energizing bus 24C from bus 24E per Attachment 23D.*

Cue:    • **Ask the examinee for a recommendation for energizing bus 24C.**

          • **If asked, report to the examinee as Unit 3 that bus 34A is available to power bus 24E.**

*I will have permission*

Comments:    The examinee may take a few minutes to determine the status of Unit 3 power before making a recommendation to the US.

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## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 12    Performance Steps:    Check that NO fault indications are present for 4.16kV Bus 24E.

GRADE    Standards:    *Examinee observes the following:*

- DIESEL GEN 12U BKR TRIP annunciator NOT lit
- DIESEL GEN 12U BKR CLOSING CKT BLOCKED annunciator NOT lit.
- 4KV BUS 24A/C TIE BKR A304 TRIP annunciator NOT lit.
- 4KV BUS 24C/E TIE BKR A305 TRIP annunciator NOT lit.

Cue: **None**

Comments:

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STEP 13    Performance Steps:    Ensure 4.16kV bus 24E "SPLY VOLTS" voltage is indicated.

GRADE    Standards:    *Examinee observes approximately 4160 Volts on "SPLY VOLTS" meter on C-08.*

Cue: **None**

Comments:

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STEP 14    Performance Steps:    Ensure all the following load breakers on 4.16kV bus 24E are open:

- A502, "SERVICE WTR PUMP B"
- A503, "HPSI PUMP B"
- A504, RBCCW PUMP B"

GRADE    Standards:    *Examinee ensures the following breakers are open:*

- A502, "SERVICE WTR PUMP B"
- A503, "HPSI PUMP B"
- A504, RBCCW PUMP B"

Cue: **None**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 15 X Performance Steps: Ensure all the following breakers are open:  
• A305, "24C/24E TIE BKR, 24C-2T-2"  
• A408, "24D/24E TIE BKR, 24D-2T-2"

GRADE     X Standards: *Examinee ensures A408, "24D/24E TIE BKR, 24D-2T-2" breaker is open.  
Examinee opens A305, "24C/24E TIE BKR, 24C-2T-2" and observes green light lit.*

Cue: **None**

Comments:

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STEP 16     Performance Steps: Request permission from Unit 3 SM or US to energize Unit 2 4.16kV Bus 24E.

GRADE         Standards: *Examinee contacts Unit 3 control room and asks permission to cross tie bus 24E to Unit 3.*

Cue: **Inform the examinee that cross tying bus 24E to Unit 3 is allowed.**

Comments:

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STEP 17 X Performance Steps: Place "SYNC SEL SW, 34B-24E-2 (A505)" to ON and check "INCOMING voltage indicated.

GRADE     X Standards: *Examinee places "SYNC SEL SW, 34B-24E-2 (A505)" to the ON position and observes "INCOMING" voltage at approximately 120 volts.*

Cue: **None**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 18 X Performance Steps: Close A505, "24E/34B TIE BKR, 34B-24E-2.

GRADE     X Standards: *Examinee places A505, "24E/34B TIE BKR, 34B-24E", switch in the CLOSE position and observes the red light is lit.*

Cue: **None**

Comments:

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STEP 19     Performance Steps: Check voltage indicated on "RUNNING" voltmeter.

GRADE         Standards: *Examinee observes "RUNNING" voltmeter reads approximately 120 volts.*

Cue: **None**

Comments:

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STEP 20     Performance Steps: Place "SYNC SEL SW, 34B-24E-2 (A505)" to OFF.

GRADE         Standards: *Examinee places "SYNC SEL SW, 34B-24E-2 (A505)" to the OFF position.*

Cue: **None**

Comments:

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### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 21    Performance Steps:    Refer to Attachment 23-U and ensure the 3 MVA is NOT exceeded as loads are restored to service

GRADE    Standards:    *Examinee observes the current flow to bus 24E and determines that the limit is approximately 420 amps.*

Cue:    **No other loads will be started until bus 24C energized. Continue actions to restore bus 24C.**

Comments:    Examinee must transfer to Attachment 23D

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STEP 22    Performance Steps:    Check that fault indications are NOT present for 4.16kv bus 24C.

GRADE    Standards:    *Examinee observes the following:*

- *DIESEL GEN 12U BKR TRIP annunciator NOT lit*
- *DIESEL GEN 12U BKR CLOSING CKT BLOCKED annunciator NOT lit.*
- *4KV BUS 24A/C TIE BKR A304 TRIP annunciator NOT lit.*
- *4KV BUS 24C/E TIE BKR A305 TRIP annunciator NOT lit.*

Cue:    **None**

Comments:    This step was performed during the initial assessment of Bus 24C.

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STEP 23    Performance Steps:    Check 4.15 kV bus 24E energized from Unit 3 is 4.16 kV bus 34A/34B.

GRADE    Standards:    *Examinee observes approximately 4160 Volts on 24E BUS VOTLS on C-08.*

Cue:    **None**

Comments:

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## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 24    Performance Steps:    Ensure the following breakers are open:

- A312, "DG A FDR BKR, 15G-12U-2"
- A302, "RSS SPLY BKR, 22S3-24C-2"
- A304, "24A/24C TIE BKR, 24C-1T-2"
- A408, " 24D/24E TIE BKR, 24D-2T-2"

GRADE    Standards:    *Examinee ensures the following breakers are open:*

- A312, "DG A FDR BKR, 15G-12U-2"
- A302, "RSS SPLY BKR, 22S3-24C-2"
- A304, "24A/24C TIE BKR, 24C-1T-2"
- A408, " 24D/24E TIE BKR, 24D-2T-2"

Cue: **None**

Comments:

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STEP 25    Performance Steps:    Ensure A305, "24C/24E TIE BKR, 24C-2T-2", is open and racked up.

GRADE    Standards:    *Examinee observes a green light on A305, "24C/24E TIE BKR, 24C-2T-2".*

Cue: **None**

Comments:

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STEP 26    Performance Steps:    Notify Unit 3 that bus 24C is going to be energized via Unit 3 4.16 kV bus 34A/34B.

GRADE    Standards:    *Examinee contacts Unit 3 control room and states that bus 24C is going to be energized via Unit 3 4.16 kV bus 34A/34B.*

Cue: **Acknowledge the statement.**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

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STEP 27 X Performance Steps: Place ALL four "UV BUS A3" ESAS channel bypass keyswitches to the "INHIBIT" position (Key26) (ESF Sensor Cabinets).

GRADE     X Standards: *Examinee places each of the 4 bypass keys into the "UV Bus A3" keyholes for each channel of ESAS, and turns each to "INHIBIT."*

Cue: **None**

Comments: This action was accomplished earlier and will only require a verification.

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STEP 28 X Performance Steps: PRESS facility 1 "UV RESET" button (ESAS Actuation Cabinet 5).

GRADE     X Standards: *Examinee pushes the "UV" button on ESAS Actuation Cabinet 5.*

Cue: **None**

Comments: This action was accomplished earlier and will only require a verification.  
The examinee may use the absence of annunciator C-33 on C-01 (ESAS UV CH 1 TRIP), as verification that undervoltage has reset.

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STEP 29     Performance Steps: Check sequencer "0" light for DG A is NOT lit and sequencer 1, 2, 3, and 4 lights are lit.

GRADE         Standards: *Examinee observes the sequence "0" light is NOT lit and the sequence 1, 2, 3, and 4 lights are lit on Actuation Cabinet 5.*

Cue: **None**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

STEP 30    Performance Steps:    Place BOTH of the following control switches in "Pull to lock"  
• Service Water Pump A  
• RBCCW Pump A

GRADE    Standards:    *Examinee places the control switches in Pull-to-Lock*

Cue: **None**

Comments:    This action was accomplished earlier and will only require a verification.

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STEP 31    Performance Steps:    Place BOTH SG Auto Aux Feed Override Switches in "Pull To Lock"

GRADE    Standards:    *Examinee places both auto aux feed override switches in pull to lock.*

Cue: **None**

Comments:    This action was accomplished earlier and will only require a verification.

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STEP 32    Performance Steps:    Ensure AFW Pump A switch in Normal-After-Trip position.

GRADE    Standards:    *Examinee observes or places the AFW Pump A switch in "Normal-After-Trip" position.*

Cue: **None**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-01S

TITLE: Energize Bus 24C From the RSST (Alternate Path)

STEP 33      Performance Steps: Override all of the following control switches to prevent an inadvertent automatic start:

- HPSI Pump A
- LPSI Pump A
- Containment Spray Pump A

GRADE           Standards: *Examinee places the three pump hand switches to the START position then to the OFF position.*

Cue: **None**

Comments: This action was accomplished earlier and will only require a verification.

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STEP 34 X Performance Steps: Close A305, "24C/24E TIE BKR, 24C-2T-2, and observe bus 24C voltmeter indication increase.

GRADE      X Standards: *The examinee closes A305, "24C/24E TIE BKR, 24C-2T-2, and observe bus 24C voltmeter indication at approximately 4160 Volts.*

Cue: **None**

Comments: The JPM is complete when bus 24C is energized from Unit 3.

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**After this step is completed, the JPM is considered complete.**

STOP TIME:

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-01S

Rev. 0

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

Operator: \_\_\_\_\_

Evaluator(s): \_\_\_\_\_

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.  
If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes \_\_\_\_\_ No X

Validated Time (minutes): 30

Actual Time to Complete (minutes): \_\_\_\_\_

Result of JPM: \_\_\_\_\_ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:




## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Containment Hydrogen Control – Alternate Path

ID Number: JPM-02S

Revision: 0

II. Initiated:

  
\_\_\_\_\_  
R. Cimmino, Jr.  
Developer

8/4/03  
\_\_\_\_\_  
Date

III. Reviewed:

  
\_\_\_\_\_  
Richard J. O'Leary  
Technical Reviewer

8/5/03  
\_\_\_\_\_  
Date

IV. Approved:

\_\_\_\_\_  
User Department Supervisor

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Paul Ho  
Nuclear Training Supervisor

8/6/03  
\_\_\_\_\_  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-02S

Rev. 0

Task Title: **Containment Hydrogen Control – Alternate Path**

System: Containment Post-Incident Hydrogen Control

Time Critical Task: Yes        No   X  

Validated Time (minutes): 20

Task No.(s): NUTIMS# 028-01-025

Applicable To: SRO X RO X PEO       

K/A No.: 028-000-A4.01 K/A Rating: 4.0/4.0

Method of Testing:

Simulated Performance: \_\_\_\_\_ Actual Performance: **X**

Location:

Classroom: \_\_\_\_\_ Simulator: **X** In-Plant: \_\_\_\_\_

**Task Standards:** At the completion of this JPM, the examinee will have established a purge of CTMT using the Hydrogen Purge System.

Required Materials  
(procedures, equipment):

- As requested, EOP-2541, Appendix 20 and 21
- EOP-2532

General References: EOP-2532, EOP-2541 (Appendix 20 and 21)

**\*\*\* READ TO THE EXAMINEE \*\*\***

*I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.*

## JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-02S

Rev. 0

Initiating Cues:

- The Unit Supervisor has directed you, as the Spare SRO, to reduce containment hydrogen concentration per EOP-2532.

Initial Conditions:

- A LOCA has occurred and EOP-2532 is being utilized.
- Containment temperature has been reduced to 230°F.
- Average containment pressure has reduced to 6 psig.
- Containment H<sub>2</sub> concentration is 3.2%.
- The pre-incident containment temperature was 115°F.
- "A" Hydrogen Recombiner is "Out Of Service".

Simulator Requirements:

Initialize to any IC that is **post LB-LOCA**.

I/O Override the following controls and indications under "CH":

- "A" H<sub>2</sub> Recombiner Control Switch HS8387 to **OFF**
- "A" H<sub>2</sub> Recombiner Control Light HS8387 G to **OFF**
- "B" H<sub>2</sub> Recombiner Control Switch HS8389 to **OFF**
- CTMT Temperature Indication TI-8096 to **230°F**

I/O Override the following controls and indications under "RP":

- "A" CTMT Pressure Indication PI-8113 to **6.2 psig**
- "B" CTMT Pressure Indication PI-8114 to **5.9 psig**
- "C" CTMT Pressure Indication PI-8115 to **6.0 psig**
- "D" CTMT Pressure Indication PI-8116 to **5.9 psig**

Ensure CTMT Temperature Selector Switch is set for point #6  
Place a YELLOW Tag on "A" H<sub>2</sub> Recombiner Control Switch

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\*\*\*\* NOTES TO EXAMINER \*\*\*\*

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-02S TITLE: Containment Hydrogen Control – Alternate Path

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START TIME: 12:00

STEP 1 Performance Steps: To place the "B" hydrogen recombiner in service, go to Appendix 20, Attachment 20-C, "Hydrogen Recombiner 'B' Operation"

GRADE \_\_\_\_ Standards: *Examinee refers Appendix 20, Attachment 20-C.*

- Cue:
- Provide Examinee with EOP-2532
  - As requested, provide examinee with Appendix 20.

Comments:

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STEP 2 Performance Steps: Ensure JC-8724, wattmeter potentiometer, is set at "000".

GRADE \_\_\_\_ Standards: *Examinee observes that the "B" Hydrogen Recombiner potentiometer, JC-8724, on C-01 is set at zero.*

Cue:

Comments:

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STEP 3 X Performance Steps: Place H-29B, hydrogen recombiner heater switch, to "ON".

GRADE \_\_\_\_ X Standards: *Examinee locates and places the Hydrogen Recombiner Heater handswitch on C-01 to "ON" and observes that the Recombiner does NOT energize as expected and reports this to the US.*

- Cue: The examinee may suggest to the US that the Recombiner breaker be investigated before proceeding, or may be confused as to how to proceed as the applicable procedure gives no direct guidance. In either of these instances, the Examiner should solicit from the examinee a recommendation on how to reduce containment hydrogen concentration.

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-02S      TITLE: Containment Hydrogen Control – Alternate Path

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Comments:

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-02S      TITLE: Containment Hydrogen Control – Alternate Path

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STEP 4      X Performance Steps: Examinee determines the alternate method of CTMT hydrogen control is via EOP-2532, step 56; "Operate Hydrogen Purge System".

GRADE \_\_\_\_ X Standards: *Examinee Refers to EOP-2532 and states the need to perform step 56, Appendix 21, requesting Technical Support Center (TSC) for concurrence.*

Cue: As the US and/or TSC, give concurrence to purge hydrogen from CTMT via Appendix 21, "Hydrogen Purge System Operation".

Comments: Provide examinee with Appendix 21 when requested.

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STEP 5      \_\_\_\_ Performance Steps: Ensure EBFS is in operation on EBFS region.

GRADE \_\_\_\_ \_\_\_\_ Standards: *Examinee verifies EBFS is operating per accident conditions.*

Cue:

Comments:

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STEP 6      \_\_\_\_ Performance Steps: Instruct US to have PEO open and RED tag both B5208 and B6216.

GRADE \_\_\_\_ \_\_\_\_ Standards: *Examinee states the need to red tag open B5208 and B6216.*

Cue: Inform Examinee that the US has had both breakers red tagged open.

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-02S      TITLE: Containment Hydrogen Control – Alternate Path

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STEP 7         Performance Steps: Stop radiation monitor sample fans, F-39A and F-39B

GRADE            Standards:      *Examinee goes to RC-14 and ensures fans F-39A and F-39B are secured.*

Cue: *100% - 400% (200% - 300%)*

Comments:

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STEP 8      X Performance Steps: Examinee notes from Initial Conditions that CTMT pressure is greater than 6 inches WG and requests TSC concurrence to close EITHER EB-194 (Facility 1) OR EB-193 (Facility 2).

GRADE         X Standards:      *Examinee proceeds to step 4 and requests permission of TSC to close ONE Hydrogen Purge 6 inch valve.*

Cue:      Instruct examinee (as TSC) to utilize Facility 2 , and inform examinee that 2-EB-193 is closed.

Comments:

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STEP 9      X Performance Steps: Examinee opens EB-91, "H2 PURGE INBD ISOL" and EB-92, "H2 PURGE OUTBD ISOL".

GRADE         X Standards:      *Examinee opens EB-91, "H2 PURGE INBD ISOL" and EB-92, "H2 PURGE OUTBD ISOL".*

Cue:      *Examinee may requests permission from TSC to perform step 5. If so, inform examinee that permission has been granted to utilize Facility 2 of Hydrogen Purge System to perform a Hydrogen purge of CTMT per Appendix 21.*

Comments:

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### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-02S TITLE: Containment Hydrogen Control – Alternate Path

---

STEP 10      X Performance Steps: Examinee notes the need to establish a purge supply to CTMT and questions the US as to which method, Station Air or Instrument Air, should be used.

GRADE \_\_\_\_      X Standards: *Examinee requests guidance from US as to desired method of CTMT purge supply.*

Cue: Inform examinee the JPM is complete.

Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME: 1:00:00



### VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-02S

Rev. 0

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

Operator: \_\_\_\_\_

Evaluator(s): \_\_\_\_\_

For examinee to achieve a satisfactory grade, <b><u>ALL</u></b> critical steps must be completed correctly. If task is Time Critical, it <b><u>MUST</u></b> be completed within the specified time to achieve a satisfactory grade.
---

Time Critical Task? Yes \_\_\_\_\_ No X

Validated Time (minutes): 20

Actual Time to Complete (minutes): \_\_\_\_\_

Result of JPM: \_\_\_\_\_ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

## EXAMINEE HANDOUT

JPM ID Number: 02S

Initiating Cues:

- The Unit Supervisor has directed you, as the Spare SRO, to reduce containment hydrogen concentration per EOP-2532.

Initial Conditions:

- A LOCA has occurred and EOP-2532 is being utilized.
- Containment temperature has been reduced to 230°F.
- Average containment pressure has reduced to 6 psig.
- Containment H<sub>2</sub> concentration is 3.2%.
- The pre-incident containment temperature was 115°F.
- "A" Hydrogen Recombiner is "Out Of Service".

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: Manual Operation of 2-SW-3.2A

ID Number: JPM-124

Revision: 1, Ch. 1

II. Initiated:

M. Cote  
Developer

10/1/98  
Date

III. Reviewed:

R. N. Spurr  
Technical Reviewer

10/6/98  
Date

IV. Approved:

J. M. Bergin  
User Department Supervisor

10/17/98  
Date

G. Bender  
Nuclear Training Supervisor

10/22/98  
Date

**JOB PERFORMANCE MEASURE WORKSHEET**

Facility: MP-2

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

JPM Number: JPM-124

Rev. 1

Task Title: Manual Operation of 2-SW-3.2A

System: Service Water

Time Critical Task: Yes \_\_\_\_\_ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS #076-01-059 (076-025-01-04)

Applicable To: SRO X RO X PEO X

K/A No. 000-062-Gen. 6 K/A Rating 3.4/3.6

Method of Testing:

Simulated Performance: X Actual Performance: \_\_\_\_\_

Location:

Classroom: \_\_\_\_\_ Simulator: \_\_\_\_\_ In-Plant: X

Task Standards: At the completion of this JPM, examinee has simulated placing 2-SW-3.2A in manual and closing valve.

Required Materials  
(procedures,  
equipment): OP 2326A

General References: OP 2326A, Section 4.26

\*\*\*\* **READ TO THE EXAMINEE** \*\*\*\*

*I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.*

## JOB PERFORMANCE MEASURE WORKSHEET

### Initiating Cues:

- The Unit Supervisor has directed you, as the Turbine Building PEO, to place valve 2-SW-3.2A in manual and then close the valve.
- The examiner will act as the US as needed.

### Initial Conditions:

- The plant has tripped due to a LOCA.
- A SIAS actuation has occurred.
- The "B" service water header supply to TBCCW heat exchangers, 2-SW-3.2A failed to close from the Control Room.

### Simulator Requirements:

N/A

---

### **\*\*\*\*\* NOTES TO EXAMINER \*\*\*\*\***

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM.

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-124

TITLE: Manual Operation of 2-SW-3.2A

---

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

STEP 1 X Performance Steps: Close instrument air isolation valve to the air operator for 2-SW-3.2A.

GRADE \_\_\_\_ X Standards: *Examinee locates the I.A. isolation valve to 2-SW-3.2A and states they would close it (clockwise direction).*

Cue: I.A. isolation to 2-SW-3.2A is closed.

Comments: This is the black-handled Whitey valve located in front of the operating cylinder.

~~~~~

STEP 2 X Performance Steps: Open the operating cylinder equalizing valve for 2-SW-3.2A.

GRADE \_\_\_\_ X Standards: *Examinee locates the equalizing valve for 2-SW-3.2A's operating cylinder and states they would open it (counterclockwise direction).*

Cue: 2-SW-3.2A equalizing valve is open.

Comments: This is the yellow-handled valve located behind the operating cylinder.

~~~~~

STEP 3 X Performance Steps: Open the air operator flask drain valve for 2-SW-3.2A.

GRADE \_\_\_\_ X Standards: *Examinee locates the drain valve for 2-SW-3.2A's air operator flask and states they would open it (counterclockwise direction).*

Cue: The air operator flask drain valve is open; air is coming out; air noise has stopped.

Comments: This valve is located at the bottom of the air operator flask.

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-124

TITLE: Manual Operation of 2-SW-3.2A

---

STEP 4 X Performance Steps: When the flask is depressurized, engage the handwheel for 2-SW-3.2A.

GRADE      X Standards: *Examinee states they would engage the handwheel by turning it until the manual operator "key" is aligned with the notch in the collar and then pushing the "key" into the notch.*

Cue: The key and notch are aligned; the key is in the notch.

Comments:

~~~~~

STEP 5 X Performance Steps: Operate the handwheel and position the valve as directed by the Control Room.

GRADE      X Standards: *Examinee states they would close the valve by turning handwheel in the counterclockwise direction (valve is reverse operating).*

Cue: The valve is going closed; the valve is closed.

Comments: Both the collar and the operator have position indication on them.  
**After this step is completed, the JPM is considered complete.**

STOP TIME: \_\_\_\_\_

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-124

Rev. 1

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

Operator: \_\_\_\_\_

Evaluator(s): \_\_\_\_\_

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.  
If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes \_\_\_\_\_ No X

Validated Time (minutes): 15

Actual Time to Complete (minutes): \_\_\_\_\_

Result of JPM: \_\_\_\_\_ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:



## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Shift from "A" to "B" Waste Gas Decay Tank

ID Number: JPM-225

Revision: 0

II. Initiated:

|                                |                         |
|--------------------------------|-------------------------|
| <u>R. J. Ashe</u><br>Developer | <u>11/17/02</u><br>Date |
|--------------------------------|-------------------------|

III. Reviewed:

|                                          |                        |
|------------------------------------------|------------------------|
| <u>R. N. Spurr</u><br>Technical Reviewer | <u>12/2/02</u><br>Date |
|------------------------------------------|------------------------|

IV. Approved:

|                                          |                    |
|------------------------------------------|--------------------|
| <u>N/A</u><br>User Department Supervisor | <u>N/A</u><br>Date |
|------------------------------------------|--------------------|

|                                                 |                        |
|-------------------------------------------------|------------------------|
| <u>M. Wilson</u><br>Nuclear Training Supervisor | <u>12/4/02</u><br>Date |
|-------------------------------------------------|------------------------|

### JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2                      Examinee: \_\_\_\_\_

JPM Number: JPM-225                      Rev. 0

Task Title: Shift From "A" to "B" Waste Gas Decay Tank

System: Radioactivity Release

Time Critical Task: Yes \_\_\_\_\_ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS # 071-01-035

Applicable To:      SRO X      RO X      PEO \_\_\_\_\_

K/A No.: 071 A4.05      K/A Rating: 2.6\*/2.6\*

#### Method of Testing:

Simulated Performance: X      Actual Performance: \_\_\_\_\_

#### Location:

Classroom: \_\_\_\_\_      Simulator: \_\_\_\_\_      In-Plant: X

#### Task Standards:

*At the completion of this JPM the examinee has shifted from the "A" Waste Gas Decay Tank in service to the "B" Waster Gas Decay Tank in service.*

#### Required Materials

(procedures,equipment):

OP 2337, Section 4.2

#### General References:

OP 2337, Section 4.2, Rev. 016-03

#### **\*\*\* READ TO THE EXAMINEE \*\*\***

*I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.*

### JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-225

Rev. 0

Initiating Cues: The US has directed you to remove the "A" Waste Gas Decay Tank from service and place the "B" Waste Gas Decay Tank in service.

Initial Conditions: The "A" Waste Gas Decay Tank pressure indicates 137 psig.  
"B" Waste Gas Decay Tank pressure indicates 5 psig

Simulator Requirements: N/A

---

\*\*\*\* NOTES TO EXAMINER \*\*\*\*

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under **NO** circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM (in-plant only).

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-225

TITLE: **Shift From "A" to "B" Waste Gas Decay Tank**

---

START TIME:                     

STEP 1             Performance Steps: Mark the boxes in steps 4.2.5, 4.2.9, and 4.2.10 with the letter "A" (for the "A" waste Gas Decay Tank).

GRADE               Standards:      *Examinee records the letter "A" in the boxes for steps 4.2.5, 4.2.9, and 4.2.10.*

Cue: 

Comments:

~~~~~

STEP 2             Performance Steps: Mark the boxes in step 4.2.6 with the letter "B" (for the "B" Waste Gas Decay Tank).

GRADE               Standards:      *Examinee records the letter "B" in the boxes for steps 4.2.6.*

Cue: 

Comments:

~~~~~

STEP 3             Performance Steps: Record position of Waste Gas Compressor hand switches.

GRADE               Standards:      *Examinee records the position of the "A" and "B" of Waste Gas Compressor hand switches.*

Cue: 

Comments:      One compressor will be in AUTO, the other will be in STANDBY.

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-225

TITLE: **Shift From "A" to "B" Waste Gas Decay Tank**

---

STEP 4     X Performance Steps: Place both Waste Gas Compressor hand switches in OFF position.

GRADE \_\_\_\_ X Standards: *Examinee states that they would place both Waste Gas Compressor hand switches on panel C-61 in the OFF position.*

Cue: *Place both Waste Gas Compressor hand switches in the OFF position.*

Comments:

~~~~~

STEP 5     X Performance Steps: Close the following valves:

- WASTE GAS DECAY TANK INLET VALVE, 2-GR-6.1A (C-61)
- Decay Tank Inlet Stop, 2-GR-6A (local)
- Pressure Control Valve Outlet Isolation, 2-GR-7A (local)

GRADE \_\_\_\_ X Standards: *Examinee states that they would place the hand switch for the following valves in the CLOSE position and observe the only the green light is lit:*

- WASTE GAS DECAY TANK INLET VALVE, 2-GR-6.1A, on C-61
- Decay Tank Inlet Stop, 2-GR-6A, in the -25'6"
- Pressure Control Valve Outlet Isolation, 2-GR-7A, in the -25'6"

Cue: **The valves are closed and the green lights are lit.**

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-225

TITLE: **Shift From "A" to "B" Waste Gas Decay Tank**

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STEP 6     X   Performance Steps: Ensure the following valves are closed:

- DECAY TANK OUTLET CONTROL VALVE, 2-GR-8.1B (C-61)
- Decay Tank Outlet Isolation, 2-GR-8B (local)
- Decay Tank Outlet Stop, 2-GR-9B (local)

GRADE \_\_\_\_ X   Standards:   *Examinee states that they would ensure the hand switch for the following valves were in the CLOSE position and observe that only the green light is lit:*

- WASTE GAS DECAY TANK OUTLET VALVE, 2-GR-8.1B, on C-61
- Decay Tank Outlet Isolation, 2-GR-8B, in the -25'6"
- Decay Tank Outlet Stop, 2-GR-9B, in the -25'6"

Cue:   **The valves are closed.**

Comments:

~~~~~

STEP 7     X   Performance Steps: Open the following valves:

- WASTE GAS DECAY TANK INLET VALVE, 2-GR-6.1B (C-61)
- Decay Tank Inlet Stop, 2-GR-6B (local)
- Pressure Control Valve Outlet Isolation, 2-GR-7B (local)

GRADE \_\_\_\_ X   Standards:   *Examinee states that they would place the hand switch for the following valves in the OPEN position and observe the only the red light is lit:*

- WASTE GAS DECAY TANK INLET VALVE, 2-GR-6.1B, on C-61
- Decay Tank Inlet Stop, 2-GR-6B, in the -25'6"
- Pressure Control Valve Outlet Isolation, 2-GR-7B, in the -25'6"

Cue:   **The valves are open**

Comments:

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-225

TITLE: **Shift From "A" to "B" Waste Gas Decay Tank**

---

STEP 8       X   Performance Steps: Place Waste Gas Compressor switches back to the original position.

GRADE        X   Standards:     *Examinee states that they would place both Waste Gas Compressor hand switches on panel C-61 in the previously recorded position.*

Cue:    **The compressor hand switches have been returned to their original position.**

Comments:

~~~~~

STEP 9          Performance Steps: Record time and pressure of "A" and "B" Waste Gas Decay Tanks in the Rad Waste Log.

GRADE           Standards:     *Examinee states that they would obtain the Rad Waste Log and record the time and pressure when the "A" and "B" Waste Gas Decay Tanks were swapped.*

Cue:    **The information has been properly logged.**

Comments:

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-225

TITLE: **Shift From "A" to "B" Waste Gas Decay Tank**

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STEP 10    X Performance Steps: Open Decay Tank Sample Stop, 2-GR-17A, and request Chemistry to sample the "A" Waste Gas Decay Tank.

GRADE \_\_\_\_ X Standards: *Examinee state that they would open Decay Tank Sample Stop, 2-GR-17A, and request Chemistry to sample the "A" Waste Gas Decay Tank.*

Cue: **The valve is open.**

Comments: Examinee may state that they would close Decay Tank Sample Stop, 2-GR-17A, when sampling is complete.

~~~~~

Comments: **After this step is completed, the JPM is considered complete.**

STOP TIME:



**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-225

Rev. 0

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

Operator: \_\_\_\_\_

Evaluator(s): \_\_\_\_\_

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task? Yes \_\_\_\_\_ No **X**

Validated Time (minutes): \_\_\_\_\_

Actual Time to Complete (minutes): 10

Result of JPM: \_\_\_\_\_ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-225

Initiating Cues: The US has directed you to remove the "A" Waste Gas Decay Tank from service and place the "B" Waste Gas Decay Tank in service.

Initial Conditions: The "A" Waste Gas Decay Tank pressure indicates 137 psig.  
"B" Waste Gas Decay Tank pressure indicates 5 psig

ADD  
PROCEDURE  
TO CUE

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Local Manual Operation of the Turbine Driven Auxiliary Feedwater Pump

ID Number: JPM-085

Revision: 9, Ch. 1

II. Initiated:

Jim Barba  
Developer

10/24/00  
Date

III. Reviewed:

John Hampton  
Technical Reviewer

10/24/00  
Date

IV. Approved:

S. R. Myers  
User Department Supervisor

10/24/00  
Date

M. C. Jensen  
Nuclear Training Supervisor

10/24/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2                      Examinee: \_\_\_\_\_

JPM Number: JPM-085                      Rev. 9

Task Title: Local Manual Operation of the Turbine Driven Auxiliary Feedwater Pump

System: Auxiliary Feedwater

Time Critical Task: Yes \_\_\_\_\_ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS #000-05-150

Applicable To:      SRO X      RO X      PEO X

K/A No.: 054-EA1.02      K/A Rating: 4.4/4.4

### Method of Testing:

Simulated Performance: X      Actual Performance: \_\_\_\_\_

### Location:

Classroom: \_\_\_\_\_      Simulator: \_\_\_\_\_      In-Plant: X

Task Standards:      At the completion of this JPM, the examinee has simulated manually starting the turbine driven AFW pump.

Required Materials  
(procedures,equipment):      • EOP 2541, Standard Appendix 7, TDAFW Pump Abnormal Startup

General References:      EOP 2541

### **\*\*\*\* READ TO THE EXAMINEE \*\*\*\***

*I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgments, and log entries as if the evolution was actually being performed.*

## JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-085

Rev. 9

Initiating Cues:

- The Unit Supervisor has directed you to locally start the terry turbine per EOP 2541, Appendix 7.

Initial Conditions:

- The plant has been tripped due to a lowering vacuum and a subsequent loss of both SGFPs.
- Vital D.C. Bus 201A and 201B have also been lost.
- Due to a loss of both electric auxiliary feedwater pumps, the shift is in EOP 2540, "Functional Recovery."
- SG levels are at 220 inches and lowering.
- Auxiliary feedwater piping integrity has been verified satisfactory.
- TDAFW pump area temperature is less than 120°F

Simulator Requirements: N/A

\*\*\*\*\* NOTES TO EXAMINER \*\*\*\*\*

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, ALL critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. Under NO circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM.

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-085

TITLE: Local Manual Operation of the Turbine Driven  
Auxiliary Feedwater Pump

---

START TIME: 11:03 AM

STEP 1      X Performance Steps: Remove four bolts connecting the governor motor to the governor.

GRADE \_\_\_\_ X Standards: *Examinee proceeds to the terry-turbine AFP room, locates the wrench attached to the governor, and states they would remove the four bolts on the governor motor.*  
-

Cue: The four bolts and the governor motor are removed.

Comments: Examinee may state the need for establishing communications using the headphones and jack in the room; if so, inform them to consider it done. The examinee may also state that the motor needs to be removed in order to operate the gear on the governor.

~~~~~

STEP 2      X Performance Steps: Slowly open MS-464, "TERRY TURBINE AUX FEED PUMP STEAM SUPPLY."

GRADE \_\_\_\_ X Standards: *Examinee states they would open MS-464 by pushing down on the manual clutch lever while rotating the handwheel in the counterclockwise direction.*  
-

Cue: Manual lever is pushed down; valve stem is rising; sound of steam passing; sound of terry-turbine rotating; valve is fully open.

Comments: Examinee may state that the pump should be running at a constant speed on the governor, which can be determined by using:  
Audible indication, when MS-464 is fully open, OR  
If SI-4194B, "SG AUXFEED PUMP TURBINE SPEED INDICATOR" is available, TDAFP speed is being maintained at 1400 to 1600 rpm using the governor speed control knob (i.e., the part where the governor motor was attached).

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-085

TITLE: Local Manual Operation of the Turbine Driven  
Auxiliary Feedwater Pump

---

STEP 3      X Performance Steps: Raise turbine speed until feed flow is established.

GRADE           X Standards:      *Examinee states when TDAFW pump parameters have stabilized, they would turn the governor speed control (the part of the governor where the governor motor was attached), until:  
Pump discharge pressure on the local gage (PI-5284-1, "TERRY TURBINE AUX F/P DISCH PRESSURE INDICATOR") is 50 - 150 psi > steam generator pressure, on the local gage (PI-4190-1, "TERRY TURBINE STEAM SUPPLY PRESSURE INDICATOR"), OR  
If communications are established with the Control Room, until feed flow is established to at least one SG using aux feed reg valve.*

Cue:      *Steam inlet pressure gage indicating 890#, use pen, etc. to show this and pump discharge pressure rising until examinee stops adjusting.  
Feed flow to the SGs is evident in control room.*

Comments:      **After this step is completed, the JPM is considered complete.**

STOP TIME:

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No.    JPM-085

Rev.            9

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

Operator: \_\_\_\_\_

Evaluator(s): \_\_\_\_\_

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

Time Critical Task?    Yes \_\_\_\_\_ No   X  

Validated Time (minutes):          15  

Actual Time to Complete (minutes): \_\_\_\_\_

Result of JPM: \_\_\_\_\_ (Denote by an S for satisfactory or a U for unsatisfactory)

Areas for Improvement:



## EXAMINEE HANDOUT

JPM ID Number: 085

Initiating Cues:

- The Unit Supervisor has directed you to locally start the terry turbine per EOP 2541, Appendix 7.

Initial Conditions:

- The plant has been tripped due to a lowering vacuum and a subsequent loss of both SGFPs.
- Vital D.C. Bus 201A and 201B have also been lost.
- Due to a loss of both electric auxiliary feedwater pumps, the shift is in EOP 2540, "Functional Recovery."
- SG levels are at 220 inches and lowering.
- Auxiliary feedwater piping integrity has been verified satisfactory.
- TDAFW pump area temperature is less than 120°F.