# JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

ID Number: JPM-036-1A

Revision: 0
Change 1

II. Initiated:

J. William Côté
Developer

02/10/00
Date

III. Reviewed:

Martin
Technical Reviewer

3/31/00
Date

IV. Approved:

N/A
Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

4/4/00
Date

# JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3

JPM Tracking Number: 036-1A Validation Time: 10 minutes

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Time Critical Task: ( ) YES ( X ) NO

Task Number: 000*026*05*01

K/A Number: 000-038-EA1.16 K/A Rating: 4.4/4.3

Applicable Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Satisfactorily complete the RCS cooldown at the maximum rate to less than the required temperature per EOP 35 E-3.

Required Materials: None.

General References: EOP 35 E-3 Rev.13

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 objectives for this JPM will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed. **Note**: I will role play as the second control board operator and in particular monitor PZR level. If PZR level decreases to less than 16%, I will start the second charging pump and will inform you of this fact.

Initial Conditions: An event occurred which resulted in the control room team manually tripping the reactor and initiating an SI. A Loss of Off Site Power occurred upon SI initiation. The US initiated ruptured S/G actions and identified a rupture in S/G "B" through RMS indications and samples. The control room team has carried out EOP actions through E-3, step 13.

# JOB PERFORMANCE MEASURE WORKSHEET

Initiating Cues: The US has directed you to conduct an RCS cooldown starting with the note prior to step 14 and complete the actions of step 14.

Simulator Condition:

1. RESET to IC-14, 100% steady state power, MOL.
2. Insert malfunction SG01B at 40% severity - S/G "B" tube rupture of 400 gpm.
3. Insert Malfunction IA02B so the instrument air compressor will not start
4. Place the simulator in "RUN", allow the radiation levels to increase on ARC-21 until the "Radiation Alert" and "Rad Hi" annunciators are received. Then trip the reactor and initiate an SI. Upon SI initiation insert ED01, Loss of Offsite Power.
5. Carry out the actions of E-0, Transition to E-3 and carry out the first 13 steps. (Do not Restore Instrument Air).
6. Acknowledge and clear annunciators and place the simulator in "FREEZE".
7. After the examinee has received the initiating cues and initial conditions, place the simulator in "RUN".

Approximate setup time is 20 - 25 minutes.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E30

JPM Number: 036-1A

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

**Comments:** The note prior to step 14 has the operator block the Low Steam Line Pressure SI when pressurizer pressure is LESS THAN 2000 psia. When the conditions are met, this action can be taken by the operator at any time during this JPM.

**Comments:** The note prior to step 14 has the operator bypass the Low-Low Tavg interlock if the conditions are met. **However, the operator can wait to bypass the interlock until the cooldown is attempted.**

**STEP** 1 X **Performance Step:** **Initiate RCS Cooldown**
Determine required core exit temperature without interpolating (use lower pressure).

**Comments:** The following numbers are to aid the examiner in determining the correctness of this step.

| Lowest Ruptured SG Pressure (psig) | Core EXIT Temperature (°F) NORM | ADVERSE |
|---|---|---|
| 1085 | 516 | 470 |
| 985 | 504 | 453 |
| 885 | 490 | 434 |
| 785 | 476 | 413 |

**GRADE** ____ ____ **Standards:** Checks the "B" S/G pressure

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E30

JPM Number: 036-1A

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| | | | | indicators (MSS*PI524A/526A) and based on the indication, determines the required core exit temperature.<br><br>The examinee may immediately recognize that the Steam dumps are unavailable due to the loss of Offsite Power and shift actions to the RNO |
| **STEP** | 2 | ____ | **Performance Step:** | Dump steam to condenser from intact SGs at maximum rate.<br>Verify annunciator CONDENSER AVAIL FOR STM DUMP C-9 (MB4D 5-6) - LIT. |
| **GRADE** | ____ | ____ | **Standards:** | Checks annunciator panel MB4D, annunciator 5-6, is NOT LIT and shifts actions to the RNO Column. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E30

JPM Number: 036-1A

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 3 | | **Performance Step:** | Recognize that a loss of air has occurred and the atmospheric bypass valves need to be used. "Response Not Obtained" column |
| **GRADE** | | | **Standards:** | Realizes the atmospheric steam dump valves are not functional. |
| | | | **Comments:** | When a loss of air occurs, the atmospheric dump valves are no longer functional |
| **STEP** | 4 | X | **Performance Step:** | OPEN the Atmospheric Relief Bypass Valves for the intact SGs. |
| **GRADE** | | X | **Standards:** | Depresses the "open" pushbutton for the atmospheric relief bypass valves (3MSS*MOV74A) (3MSS*MOV74C) (3MSS*MOV74D) and observes the indicating lights shift to green OFF, red ON. |
| | | | **Comments:** | The maximum rate requirement of the original step is meant to apply to this step in the RNO column. This means the valves are full open. |
| | | | **Comments:** | The opening of MOV74B will cause a release and constitute **Failure** of the critical nature of this step. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E30

JPM Number: 036-1A

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 5 | X | **Performance Step:** | Verify core exit TCs - LESS THAN REQUIRED TEMPERATURE. |
| **GRADE** | | X | **Standards:** | Displays the core exit thermocouple map on the computer display screen. Monitors the temperatures to ensure temperature is decreasing and drops below that temperature determine in JPM Step 1. |
| | | | **Comment:** | If time is a consideration: Once the examinee has demonstrated control of the cooldown, The evaluator may assign a new temperature for the examinee to maintain the plant less than. |
| **STEP** | 6 | X | **Performance Step:** | Stop RCS cooldown. |
| **GRADE** | | X | **Standards:** | * Depresses the "close" pushbutton for the atmospheric relief bypass valves<br>(3MSS*MOV74A)<br>(3MSS*MOV74C)<br>(3MSS*MOV74D)<br>and observes the indicating lights shift to green ON, red OFF. |
| **STEP** | 7 | | **Performance Step:** | Maintain core exit TCs - LESS THAN REQUIRED TEMPERATURE |
| **GRADE** | | | **Standards:** | Monitors the core exit thermocouple map on the computer display screen to ensure core exit temperature remains below that temperature |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E30

JPM Number: 036-1A

Task Title: RCS Cooldown per E-3 SGTR using the Atmospheric Steam Dump Bypasses

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

determined in JPM Step 1.

| | | | | |
|---|---|---|---|---|
| **STEP** | 8 | ____ | **Performance Step:** | Inform the US that the required RCS cooldown is complete. |
| **GRADE** | ____ | ____ | **Standards:** | Informs the US that he has completed the required RCS cooldown in accordance with E-3, Step 14. |

**Terminating Cue: The evaluation for this JPM is concluded.**

Stop Time: _____

# VERIFICATION OF COMPLETION

Job Performance Measure Number: 036-1A Revision: 0
Change 1

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min): 10 Actual time to Complete (min): _____

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

Result of oral questions: Number of Questions: _____

Number of Correct Responses: _____

Score _____ %

# EXAMINEE HANDOUT

## INITIAL CONDITIONS AND INITIATING CUES

**JPM Tracking Number:** 036-1A

**Initial Conditions:** An event occurred which resulted in the control room team manually tripping the reactor and initiating an SI. Upon SI Initiation a loss of offsite power occurred. The US initiated ruptured S/G actions and identified a rupture in S/G "B" through RMS indications and samples. The control room team has carried out EOP actions through E-3, step 13.

**Initiating Cues:** The US has directed you to conduct an RCS cooldown starting with the note prior to step 14 and complete the actions of step 14.

**Note:** The instructor/evaluator will role play as the second control board operator and in particular monitor PZR level. If PZR level decreases to less than 16%, the instructor will start the second charging pump and will inform you of this fact.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

JPM ID Number: 050A

Revision: 5 Change 2
02/21/00

II. Initiated:

J. William Côté
Developer

2/21/00
Date

III. Reviewed:

Martin
Technical Reviewer

2/24/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 050A Revision: 5 Change 2

Task Title: PRESSUREIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

System: SO1

Time Critical Task: ( X ) YES ( ) NO

Validated Time (minutes): 4

Task Number(s): 000*013*05*01, 000*065*05*02, 010*005*01*01, 010*013*04*01

Applicable To: SRO _____ RO X PEO _____

K/A Number: 000-027-EA1.01 K/A Rating: 4.0 / 3.9

Method of Testing: Simulated Performance: _____ Actual Performance: X

Location: Classroom: _____ Simulator: X In-Plant: _____

Task Standards: Satisfactorily complete EOP actions to control pressurizer pressure using EOP 35 ES-0.1.

Required Materials: None.

General References: EOP 35 ES-0.1 Rev. 17

*****READ TO THE STUDENT*****

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

JPM Number: 050A Revision: 5 Change 2

Simulator Requirements:

1. Reset to IC-14, 100% steady state power.
2. Insert malfunctions RP02A and RP02B - reactor trip.
3. Place the simulator in "RUN". Allow the reactor trip to occur, throttle back AFW flow to approximately 150 gpm per SG by closing the MDAFW flow control valves and throttling the TDAFW flow control valves to 10% open. Trip the TDFW pumps to minimize feedwater oscillations.
4. Acknowledge/reset alarms and place the simulator in "Freeze".
5. Insert malfunction RX06A, pressurizer spray valve PCV-455B auto control failure, at 50% severity over a ramp time of 120 seconds.
6. Under Simulator diagrams (left screen):

   RX Sheet 13, component 3RCS-PK455B, select "auto" and then "activate"

   This will keep controller PK455B in the "AUTO" position. The intent is to have an inadvertent reactor trip with a spray valve failing open after the simulator is placed in "RUN".
7. Place the simulator in "RUN" and verify RCS pressure is 2040 ± 10 psig and decreasing. Place the simulator in "FREEZE".
8. After the examinee has received the initiating cues and initial conditions, place the simulator in "RUN".

Approximate setup time is 10 minutes.

Initial Conditions: An inadvertent reactor trip has occurred. The control room team has completed the actions of E-0 and ES-0.1, through Step 4.

Initiating Cues: The US has directed you to check pressurizer pressure control using step 5 in EOP 35 ES-0.1. You will be responsible for acknowledging the alarms on MB4. During the performance of this JPM other annunciators may come in (i.e. condenser vacuum, etc.) The instructor will role play as a second control board operator and acknowledge/reset these alarms.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 050A Revision: 5 Change 2

Task Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

Start Time: _____

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|---|---|---|---|---|
| | | | **NOTE:** | If during the performance of this JPM, a Low Pressurizer pressure SI is actuated, the examinee automatically fails. |
| **STEP** | 1 | ____ | **Performance Step:** | **Check PZR Pressure Control**<br>Verify PZR pressure - GREATER THAN 1890 psia. (Step 4.a) |
| **GRADE** | ____ | ____ | **Standards:** | Checks pressurizer pressure greater than 1890 psia by observing pressure indication on meters<br>RCS-PI455A<br>RCS-PI456A<br>RCS-PI457<br>RCS-PI458<br>OR<br>Recorder PR455. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 2 | ____ | **Performance Step:** | Verify PZR pressure - STABLE AT OR TRENDING TO 2250 psia. (Step 4.b) |
| **GRADE** | ____ | ____ | **Standards:** | Notes that PZR pressure is less than 2250 psia and decreasing. Checks the RNO column and proceeds to step 5d. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 050A Revision: 5 Change 2

Task Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

| | | | | |
|---|---|---|---|---|
| **STEP** | **3** | | **Performance Step:** | Check PZR status: Check PZR pressure - LESS THAN 2250 psia. Then proceed to step 5.d |
| **GRADE** | | | **Standards:** | Monitors pressure and observes that pressure is less than 2250 psia. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **4** | | **Performance Step:** | Verify PZR PORVs - CLOSED. (step 5.d) |
| **GRADE** | | | **Standards:** | Verifies PZR PORV valves closed by observing indicating lights as green ON, red OFF. |
| | | | **Comments:** | The examinee may also check PORV outlet temp (RCS-TI463) as approximately 110°F and PRT parameters as confirmatory indications. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Comments:** | During JPM steps 5, 6 and 7, the examinee may decide to inform the US of problems and corrective actions taken in accordance with the procedure. This is not required for satisfactory completion of the step. |
| **STEP** | **5** | | **Performance Step:** | Verify PZR spray valves - CLOSED. (Step 5.e) |
| **GRADE** | | | **Standards:** | Identifies that loop #1 PZR spray valve, RCS*PCV455B is OPEN. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 050A Revision: 5 Change 2

Task Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

| | | | | |
|---|---|---|---|---|
| **STEP** | 6 | X | **Performance Step:** | Proceed to RNO column<br>CLOSE the spray valves. (Step 5.e RNO) |
| **GRADE** | | X | **Standards:** | Depresses the "manual" pushbutton on controller RCS*PCV455B.<br>Observes the controller will not shift to "manual" ("auto" light stays lit and the "manual" light does not come on). |
| | | | **Comments:** | The examinee may depress the "UP ARROW"(▲) and/or "DOWN ARROW"(▼) pushbuttons to confirm the controller did not shift to "manual". This is not required to complete the step. Additionally, the examinee may place the Master Pressure Controller (3RCS*PCV455A) in "MANUAL" and increase its output in an attempt to close the spray valve. Since the controller output is already at the maximum, this will have no effect and is not required for completion of the step. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 050A Revision: 5 Change 2

Task Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

| | | | | |
|---|---|---|---|---|
| **STEP** | 7 | X | **Performance Step:** | IF any spray valve can NOT be closed THEN STOP RCPs 1 and 2. (Step 5.e RNO) |
| **GRADE** | | X | **Standards:** | Rotates RCP 1 control switch RCS-P1A to the "STOP" position and observes the indicating lights shift to green ON, red OFF and amperage goes to zero. |
| **GRADE** | | X | **Standards:** | Rotates RCP 2 control switch, RCS-P1B to the "STOP" position and observes the indicating lights shift to green ON, red OFF and amperage goes to zero. |
| | | | **Comments:** | Annunciators "RCP Loop 1 Flow Lo", "RCP Loop 2 Flow Lo" and "RCP Low Speed" will alarm. The examinee should silence and acknowledge these alarms. This is not necessary to satisfy this critical step. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 8 | | **Performance Step:** | Verify PZR heaters - ENERGIZED. (Step 5.f) |
| **GRADE** | | | **Standards:** | Verifies heater groups 3RCS*H1A, H1B, H1C, H1D and H1E are on by observing the indicating lights as green OFF, red ON. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 050A Revision: 5 Change 2

Task Title: PRESSURIZER PRESSURE CONTROL FOLLOWING REACTOR TRIP

| | | | | |
|---|---|---|---|---|
| **STEP** | 9 | ____ | **Performance Step:** | Inform the US that pressurizer pressure control has been checked. |
| **GRADE** | ____ | ____ | **Standards:** | Reports to the US that pressurizer pressure control has been checked, RCPs 1 and 2 have been stopped and pressure is now stable. Also reports the problem with the spray valve , if not previously done. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**Terminating Cue:** The evaluation for this JPM is concluded.

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 050A Revision: 5 Change 2

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 4

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

**JPM Number:** 050A

**Initial Conditions:** An inadvertent reactor trip has occurred. The control room team has completed the actions of E-0 and ES-0.1, through Step 4.

**Initiating Cues:** The US has directed you to check pressurizer pressure control using step 5 in EOP 35 ES-0.1. You will be responsible for acknowledging the alarms on MB4. During the performance of this JPM other annunciators may come in (i.e. condenser vacuum, etc.) The instructor will role play as a second control board operator and acknowledge/reset these alarms.

# JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: SWAP RHR COOLING TRAINS

ID Number: JPM-136 Revision: 2

II. Initiated:

J. William Côté
Developer

2/10/00
Date

III. Reviewed:

Martin
Technical Reviewer

2/25/00
Date

Instructional Reviewer

Date

IV. Approved:

Operations Manager

Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3

JPM Tracking Number: 136 Validation Time: 10 minutes

Task Title: SWAP RHR COOLING TRAINS

Time Critical Task: ( ) YES ( X ) NO

Task Number: 005*017*01*01

K/A Number: 005-A4.,01 K/A Rating: 3.6/3.4

Applicable Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Satisfactorily shift the RHR system during single loop operation from Loop A to Loop B using OP 3310A

Required Materials: None

General References: OP 3310A Rev. 15

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 objectives for this JPM will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed.

Initial Conditions: The control room team is in the process of shifting protected trains to the "B" train being protected. This is necessary to support EDG surveillances. Section 4.6, align "B" RHR for Plant cooldown is complete & "B" RHR boron concentration is greater than RCS Boron concentration. "B" RHR has been used this outage.

Initiating Cues: The US has directed you to shift the RHR system from Train A to Train B using OP 3310A Section 4.8, Shifting the RHR system during Single Loop operation from Train "A" to Train "B".

Simulator Requirements:

1. Reset to Temp **IC 92**, Y2K-2 nrc exam [Once the nrc exam is over, this IC will be transferred to the regular IC listing. Look for the JPM number in the IC description.].

2. Ensure the following are set properly:

   - PK131 set to maintain RCS pressure at 350# (controller pot setting of 5.2)
   - 3RCS*HCV607 is closed
   - 3RCS*HCV606 potentiometer set for a valve position of 20% open

3. Perform section 4.6 of OP3310A for "B" RHR Loop

4. Acknowledge/clear annunciators. Place the simulator in "freeze".

5. Place the simulator in "run" after the examinee has read the initial conditions and initiating cues.

Approximate simulator setup time is 10 minutes.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

| | | | | |
|---|---|---|---|---|
| **STEP** | 1 | ____ | **Performance Step:** | Verify section 4.6 competed |
| **GRADE** | ____ | ____ | **Standards:** | Reviews initial conditions and verifies that section 4.6 has been completed for the "B" Train of RHR |
| **STEP** | 2 | ____ | **Performance Step:** | If RHR has been used previously if either condition exist Go To step 4.8.3<br>• No T.S. action prohibits RCS dilution<br>or<br>• RCS Boron concentration is equal to or less than "B" RHR concentration |
| **GRADE** | ____ | ____ | **Standards:** | Reviews initial conditions and verifies the "B" Train of RHR boron concentration is greater than RCS concentration |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 3 | | **Performance Step:** | Slowly throttle open on 3CCP-HK66B1 to provide cooling flow without exceeding total CCP flow of 8100 gpm or RHR cooling flow of 7,000 gpm flow |
| **GRADE** | | | **Standards:** | Slowly opens on the thumb wheel and observes the flow increases not to exceed the described limits. |
| | | | **Comment:** | The trainee may adjust the flow controller to that set for the "A" RHR Train not to exceed the limits |
| **STEP** | 4 | X | **Performance Step:** | START RHR pump 3RHS*P1B |
| **GRADE** | | X | **Standards:** | Rotates the control switch for pump 3RHS*P1B to the start position and observes the indicating lights shift to green OFF, red ON, and that starting amperage eventually decays to the running amperage on the amperage meter. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 5 | X | **Performance Step:** | USE the manual controls on 3RHS-FK619, RHR total flow controller, slowly OPEN the valve to establish 4,000 gpm flow. |
| **GRADE** | | X | **Standards:** | Slowly depresses the up (▲) arrow pushbutton and monitors the flow rate. Releases the pushbutton when indicated flow is 4,000 gpm. |
| **STEP** | 6 | X | **Performance Step:** | PLACE 3RCS-FK619, RHR total flow controller, in "Auto". |
| **GRADE** | | X | **Standards:** | Depresses the 'Auto/manual' pushbutton and observes that the manual light goes out and the auto light comes on. |
| | | | **Comments:** | For this next step, it is expected that the examinee will observe the position of 3RHS*HCV606 and open 3RHS*HCV607 to an identical position. However, this is not necessary to complete the critical nature of the step. |
| **STEP** | 7 | X | **Performance Step:** | SHIFT RHR flow from loop A to loop B as follows:<br><br>Simultaneously OPEN 3RHS*HCV607, RHR heat exchanger B outlet flow control valve, and CLOSE 3RHS*HCV606, RHR heat |

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| | | | | exchanger A outlet flow control valve. |
| **GRADE** | ____ | X | **Standards:** | Positions one hand on the potentiometer for 3RHS*HCV607 and the other hand on the potentiometer for 3RHS*HCV606. Rotates the potentiometer for HCV606 in the close direction and HCV607 in the open direction. Observes that the position indicating pointer for HCV607 moves toward the 100% (open) position and the position indicating pointer for HCV606 moves toward 0% (close) position. Stops rotating the potentiometers when HCV606 is fully closed. |
| **Step** | 8 | ____ | **Performance Step:** | Verify 3HVQ* ACUS1B, RHR ACU, running (VP1) |
| | ____ | ____ | **Standards:** | Examinee goes to VP1 and observes the red light lit and green light out for ACUS1B on VP1C |
| **STEP** | 9 | ____ | **Performance Step:** | OPEN 3RHS*V37, RHR to CVCS letdown isolation. |
| **GRADE** | ____ | ____ | **Standards:** | Either directly contacts an PEO or requests that the US contact an PEO to locally open 3RHS*V37. |
| | | | **Cue:** | Role play as either the PEO or the US and acknowledge the request. Use remote function RHR02 to open V37. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| | | | | When this action is completed, report back to the examinee that 3RHS*V37 is open. |
| **STEP** | 10 | | **Performance Step:** | CLOSE 3RHS*V20, RHR to CVCS letdown isolation. |
| **GRADE** | | | **Standards:** | Either directly contacts an PEO or requests that the US contact an PEO to locally close 3RHS*V20. |
| | | | **Cue:** | Role play as either the PEO or the US and acknowledge the request. Use remote function RHR01 to close V20. When this action is completed, report back to the examinee that 3RHS*V20 is closed. |
| **STEP** | 11 | X | **Performance Step:** | STOP RHR pump 3RHS*P1A. |
| **GRADE** | | X | **Standards:** | Rotates the control switch for 3RHS*P1A to the stop position and observes that the indicating lights shift to green ON, red Off and pump amperage indication goes to zero. |
| **STEP** | 12 | | **Performance Step:** | Throttle 3CCP-HK66A1 and 66B1 as necessary without exceeding the established |
| | | | **Standards:** | Slowly adjust the thumb wheel(s) as needed while observing CCP flows |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 13 | ____ | **Performance Step:** | IF train A SI and QSS pumps not running, STOP 3HVQ*ACUS1A, and PLACE in "AUTO" (VP1). |
| **GRADE** | ____ | ____ | **Standards:** | Observes that the Train A SI and QSS pumps are not running. Rotates the control switch for 3HVQ*ACUS1A to the "stop" position and when the indicating lights indicate green ON, red Off, rotates the switch to the "auto" position. |
| | | | **Comment:** | Examinee should check MB5 indication to ensure MD AFW Pumps are not running by observing green lights lit and red lights extinguished |
| | | | **Cue:** | |
| **STEP** | 14 | ____ | **Performance Step:** | If AFW Pumps are not running, PERFORM the following<br><br>a. STOP 3HVQ*FN5A and 3HVQ*FN6A, ESF building vent fans |
| **GRADE** | ____ | ____ | **Standards:** | 3HVQ*ACUS1A was stopped and it is desired to shift ESF ventilation. Rotates the control switch for 3HVQ*FN5A/6A to the "stop" position and observes that the indicating lights shift to green ON, red OFF. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: RHS

JPM Number: 136 rev. 2

Task Title: SWAP RHR COOLING TRAINS

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 15 | ____ | **Performance Step:** | When at least 90 seconds have elapsed, VERIFY 3HVQ*FN5B and 3HVQ*FN6B, ESF building vent fans running |
| **GRADE** | ____ | ____ | **Standards:** | Observes the indicating lights for 3HVQ*FN5B/6B are green OFF, red ON. The fans auto started. |
| **STEP** | 16 | ____ | **Performance Step:** | Notify the US that the RHR system has been shifted from Train A to Train B. |
| **GRADE** | ____ | ____ | **Standards:** | Informs the US that section 4.8 of OP 3310A has been completed and RHR system operation has been shifted from Loop A to Loop B. |

**Terminating Cue:** **The evaluation for this JPM is concluded.**

Stop Time: _____

# VERIFICATION OF COMPLETION

Job Performance Measure Number: 136 Revision: 2

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min): 10 Actual time to Complete (min): _____

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

Result of oral questions: Number of Questions: _____

Number of Correct Responses: _____

Score _____ %

# EXAMINEE HANDOUT

## INITIAL CONDITIONS AND INITIATING CUES

**JPM Tracking Number:** 136

**Initial Conditions:** The control room team is in the process of shifting protected trains to the "B" train being protected. This is necessary to support EDG surveillances. Section 4.6, align "B" RHR for Plant cooldown is complete & "B" RHR boron concentration is greater than RCS Boron concentration. "B" RHR has been used previously this outage.

**Initiating Cues:** The US has directed you to shift the RHR system from Train A to Train B using OP 3310A Section 4.8, Shifting the RHR system during Single Loop operation from Train "A" to Train "B".

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-0

JPM ID Number: 051(C) Revision: 0

II. Initiated:

J. William Côté — 02/04/00
Developer — Date

III. Reviewed:

Martin — 2/25/00
Technical Reviewer — Date

IV. Approved:

Cognizant Plant Supervisor (optional) — Date

Nuclear Training Supervisor — 2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-0

System: E00

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 5

Task Number(s): 000*011*05*01

Applicable To: SRO X RO X PEO _____

K/A Number: EPE-007-EA2.02 K/A Rating: 4.3/4.6
GEN-2.4.1 4.3/4.6

Method of Testing: Simulated Performance: _____ Actual Performance: X

Location: Classroom: _____ Simulator: X In-Plant:: _____

Task Standards: Satisfactorily complete the first 4 steps in E-0 from memory including any applicable RNO actions.

Required Materials: None.

General References: EOP 35, E-0, Rev. 20

*****READ TO THE STUDENT*****

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

JPM Number: 051(C) Revision: 0

Simulator Requirements:

1. Reset to IC-14, 100% power
2. Enter RP10A and RP10B to ensure that an automatic reactor trip does not occur.
3. Enter malfunction RP09A & RP09B to prevent the reactor from being tripped at MB4 and MB7.
4. Annunciator override: MB4B C5 & MB4C D5 to "ON". This will activate the Hi & Hi-Hi vibration alarms for the "C" RCP.
5. Place the simulator in "RUN", Acknowledge/clear annunciators as appropriate. Place the Master Silence switch in the "SILENCE" position.
6. Place the simulator in "FREEZE".
7. Place the simulator in "RUN" after the examinee has read and understands the Initial Conditions and Initiating Cues.

Approximate simulator setup time is 5-7 minutes.

Initial Conditions: Moments ago the "C" RCP Hi vibration annunciators alarmed. The Control Room team has determined that a reactor trip is required and stopping of the "C" RCP are necessary. The US has placed the master silence switch in the "SILENCE" position. The evaluator will acknowledge all communications to the US.

Initiating Cues: You are directed to trip the reactor, trip the "C" RCP and carry out the first four (4) steps of E-0 from memory. The simulator will be placed in run when you are ready to begin.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-O

Start Time: _____

**STEP** 1 ____ **Performance Step:** TRIP the reactor. Verify Reactor Trip.

- Check reactor trip and bypass breakers - OPEN
- Check rod bottom lights - LIT
- Check neutron flux - DECREASING

**GRADE** ____ ____ **Standards:** Rotates the reactor trip switch on MB4 to the "trip" position. Observes that the reactor trip breakers are closed, no rod bottom lights are lit and that reactor power is not decreasing. The reactor is not tripped. Shifts to the actions required in the RNO.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 2 ____ **Performance Step:** TRIP the reactor.

**GRADE** ____ ____ **Standards:** Rotates the reactor trip switch on MB7 to the "trip" position. Observes that the reactor trip breakers are closed, no rod bottom lights are lit and that reactor power is not decreasing. The reactor is not tripped. Shifts to the actions required in the RNO.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-O

**STEP** 3 X **Performance Step:** TRIP the reactor.

**GRADE** ___ X **Standards:** Proceeds to MB8 and rotates the supply Breaker switches for the rod control MG Sets, 32B & 32N to the "open" positions. All 4 breakers {high side and low side supply breakers} need not be operated. Observes that all rod bottom lights are lit and that neutron flux is decreasing. The reactor is tripped. Returns to the steps in the ACTION column.

**Grade:** **SAT** _____ **UNSAT** _____

NOTE
The dispatching of a PEO to locally open the Reactor trip breakers is the US task. This action is NOT required by the RO to satisfactorily complete the JPM.

**STEP** 4 ___ **Performance Step:** TRIP the "C" RCP.

**GRADE** ___ ___ **Standards:** Proceeds to MB4 and rotates the supply Breaker switch for the "C" RCP to the "open" position.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 5 ___ **Performance Step:** Verify Turbine Trip

a. Check all turbine stop valves - CLOSED.

**GRADE** ___ ___ **Standards:** Looks at the stop valve meter indications on the EHC insert on MB7 and observes that all of the turbine stop valves are Open

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-O

**STEP** 6 ____ **Performance Step:** Trip Turbine

Manually trip the turbine

**GRADE** ____ ____ **Standards:** Pushes the turbine trip pushbutton on the EHC insert and verifies all stop valves close

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 7 ____ **Performance Step:** Verify Power to AC Emergency Busses.

a. Check busses 34C and 34D - AT LEAST ONE ENERGIZED.

b. Check busses 34C and 34D - BOTH ENERGIZED.

**GRADE** ____ ____ **Standards:** Looks at the voltage indication for bus 34C on MB8 and observes that voltage is present. At least bus 34C is energized.

**GRADE** ____ ____ **Standards:** Looks at the voltage indication for bus 34D on MB8 and observes that voltage is present. Both busses 34C and 34D are energized.

**Grade:** **SAT** _____ **UNSAT** _____

NOTE:
Depending on the speed of response, the expectation is for SI to be actuated with one person performing this JPM.

# PERFORMANCE INFORMATION

JPM Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-O

**STEP** 8 ____ **Performance Step:** Check if SI is Actuated.

a. Verify Safety Injection Actuation annunciator - LIT

**GRADE** ____ ____ **Standards:** At MB4, observes that the Safety Injection Actuation annunciator is or is not lit.

**Grade:** **SAT** _____ **UNSAT** _____

NOTE:
If the SI annunciator is Lit, Cue the examinee; **The Evaluation for this JPM is complete.**

Steps 9-14 need only be done if SI annunciator is not lit

**Comments:** JPM steps 9 - 14 can be performed in any order.

**STEP** 9 ____ **Performance Step:** Check if SI is required.

- Ctmt pressure GREATER THAN 18 psia

**GRADE** ____ ____ **Standards:** Checks Ctmt pressure indications on MB2 and observes that Ctmt is approximately 13.5 psia. It is less than 18 psia.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 10 ____ **Performance Step:**
- RCS pressure LESS THAN 1890 psia

**GRADE** ____ ____ **Standards:** AT MB4, observes that the RCS pressure indicators and determines that RCS pressure is decreasing slowly but greater than 1890 psia

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 051(C) Revision: 0

Task Title: PERFORMANCE OF THE IMMEDIATE ACTIONS IN E-O

| | | | | |
|---|---|---|---|---|
| **STEP** | 11 | | **Performance Step:** | • PZR level LESS THAN 16% |
| **GRADE** | | | **Standards:** | Observes the PZR level indications on MB4 and determines that PZR level is not less than 16% |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 12 | | **Performance Step:** | • RCS subcooling LESS THAN 32 degrees F. |
| **GRADE** | | | **Standards:** | Uses the plant process computer or the curves on the back of the clipboards to determine that RCS subcooling is greater than 32 degrees F. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 13 | | **Performance Step:** | • SG pressure LESS THAN 660 psig. |
| **GRADE** | | | **Standards:** | At MB5, observes that all SG pressures are greater than 660 psig. After checking all parameters, determines that an SI is not required |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 14 | | **Performance Step:** | Reports that the first four steps of E-0 have been completed. |
| **GRADE** | | | **Standards:** | Informs the examiner that he has completed the first four (4) steps of E-0 and an SI is not required. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**Terminating Cue: The evaluation for this JPM is concluded.**

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 051(C) Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 5

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# STUDENT HANDOUT

**JPM Number:** 051(C)

**Initial Conditions:** Moments ago the "C" RCP Hi vibration annunciators alarmed. The Control Room team has determined that a reactor trip is required and stopping of the "C" RCP is necessary. The US has placed the master silence switch in the "SILENCE" position. The evaluator will acknowledge all communications to the US.

**Initiating Cues:** You are directed to trip the reactor, trip the "C" RCP and carry out the first four (4) steps of E-0 from memory. The simulator will be placed in run when you are ready to begin.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

JPM ID Number: NRCset2c Revision: 0

II. Initiated:

J. William Côté
Developer

2/7/00
Date

III. Reviewed:

Martin
Technical Reviewer

2/24/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

System: SLCRS

Time Critical Task: ( ) YES ( **X** ) NO

Validated Time (minutes): 10

Task Number(s): 088-01-091 Manual Start of Tr "A" SLCRS System

Applicable To: SRO **X** RO **X** PEO

K/A Number: GEN-2.3.11 K/A Rating: 2.7/3.2
Ability to Control Radiation Release

Method of Testing: Simulated Performance: Actual Performance: **X**

Location: Classroom: Simulator: **X** In-Plant:

Task Standards: Perform all critical steps correctly to start the TR "A" SLCRS

Required Materials: Simulator

General References: OP3314I, section 4.2, Manual start of TR "A" SLCRS

*****READ TO THE STUDENT*****

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

JPM Number: NRCset2c Revision: 0

Simulator Requirements:

1. Reset to IC 14
2. Insert MALF RM04B at 0.1%
3. Acknowledge alarms. [Rad alert and Rad hi should be alarming[

Initial Conditions: Resin change out of a demin is in progress in the Aux building. HVR10B has gone into alarm. The crew is carrying out the actions of AOP 3573, Radiation Monitor Alarm Response.

Initiating Cues: The Unit Supervisor instructs you to manually Start "A" train SLCRS using OP 3314I, Supplementary Leak Collection and Release System. All General Prerequisites are met.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").
4. Acknowledging of annunciators is not necessary to pass the critical nature of any step.

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

Start Time: _____

**STEP** 1 ____ **Performance Step:** Notify Unit 1 control room that a SLCRS filter will be started

**GRADE** ____ ____ **Standards:** Attempts to call Unit 1 control room and inform them of the start of a SLCRS filter

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** As Unit 1 control room, acknowledge report of the starting of a SLCRS filter Unit

**Comments:**

**STEP** 2 ____ **Performance Step:** Refer to Precaution 3.4 and REVIEW for applicability.

**GRADE** ____ ____ **Standards:** Locates precaution 3.4 and reviews the SLCRS restrictions.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Inform examinee that the precaution is NOT applicable. No welding, grinding or painting has occurred

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

**STEP** 3 ____ **Performance Step:** Notify Chemistry dept that 3HVR- FN5, exhaust Fan, will be stopped

**GRADE** ____ ____ **Standards:** Attempts to call chemistry and inform them of the intended actions

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Acknowledge the stopping of the HVR as the chemistry department.

**Comments:**

**STEP** 4 X **Performance Step:** Stop 3HVR-HVU2A, Air Supply unit.

**GRADE** ____ ____ **Standards:** Locates the Control Switch on VP1 and rotates the switch to the Stop/Off position. Verifies the fan indicators go from Red to Green

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 5 X **Performance Step:** STOP 3HVR-FN5, Exhaust Fan

**GRADE** ____ ____ **Standards:** Locates the Control Switch on VP1 and rotates the switch to the Stop/Off position. Verifies the fan indicators go from Red to Green

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

**STEP** 6 **X** **Performance Step:** CLOSE the following supply Dampers to 3HVR-HVU2A:
- 3 HVR*AOD33A
- 3VR*AOD35A

**GRADE** ____ ____ **Standards:** Locates the Control Switch on VP1 and presses the Close pushbutton for the associated dampers. Verifies the damper indicators go from Red to Green

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:** Steps 7 & 8 may be done in any order.

**STEP** 7 **X** **Performance Step:** CLOSE 3HVR*AOD39A/43A

**GRADE** ____ ____ **Standards:** Locates the Control Switch on VP1 and presses the Close pushbutton for the associated dampers. Verifies the damper indicators go from Red to Green

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

**STEP** 8 X **Performance Step:** CLOSE 3HVR*AOD39B/43B

**GRADE** ____ ____ **Standards:** Locates the Control Switch on VP1 and presses the Close pushbutton for the associated dampers. Verifies the damper indicators go from Red to Green

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 9 ____ **Performance Step:** If when starting 3 HVR*FN12A the opposite train starts: Place 3HVR*FN12B Control switch in Stop and hold until 3 HVR*FN12A is at speed

**GRADE** ____ ____ **Standards:** If 3HVR*AOD95B starts to Open the examinee should take the described action.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

**STEP** 10 X **Performance Step:** PLACE 3 HVR*FN12A, SLCRS Exhaust fan switch, in START and HOLD

**GRADE** ____ ____ **Standards:** Locates the controller on VP1 and rotates the switch to the Start/ON position and holds until the system is running

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

## Steps 11 & 12 may be done in any order

**STEP** 11 X **Performance Step:** When the following occurs, RELEASE the Control Switch:
- 3HVRAOD95A, SLCRS Inlet Damper OPENS
- 3HVR*FN12A, SLCRS Exhaust Fan, STARTS

**GRADE** ____ ____ **Standards:** Locates the indicators on VP1 and verifies the damper goes from green to red.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 12 ____ **Performance Step:** When the following occurs, RELEASE the Control Switch:
- SLCRS Filter Heater ON

**GRADE** ____ ____ **Standards:** Locates the indicators on VP1 and verifies the heater indicates on

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2c Revision: 0

Task Title: HVR10B Subsequent Actions. {Place SLCRS in Service}

**Comments:**

| | | | | |
|---|---|---|---|---|
| **STEP** | 13 | ____ | **Performance Step:** | Report to the US that the SLCRS system Train "A" has been placed in service |
| **GRADE** | ____ | ____ | **Standards:** | Reports to the US that the SLCRS system Train "A" has been placed in service |

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**THE EVALUATION PORTION OF THIS JPM IS COMPLETE.**

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: NRCset2c Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# STUDENT HANDOUT

**JPM Number:** NRCset2c

**Initial Conditions:** Resin change out of a demin is in progress in the Aux building. HVR10B has gone into alarm. The crew is carrying out the actions of AOP 3573, Radiation Monitor Alarm Response.

**Initiating Cues:** The Unit Supervisor instructs you to manually Start "A" Train SLCRS using OP 3314I, Supplementary Leak Collection and Release System. All General Prerequisites are met.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

JPM ID Number: 108

Revision: 1 Chg. 2
2/21/00

II. Initiated:

R. L. Lueneburg
Developer Verified J. Williams Cobb

2/6/97
Date
2/21/00

III. Reviewed:

C Martin
Technical Reviewer

2/27/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/27/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

System: A00

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 12

Task Number(s): 000-05-069 and 000-05-129

Applicable To: SRO X RO X PEO

K/A Number: 055-EA2.03 K/A Rating: 3.9/4.7

Method of Testing: Simulated Performance: Actual Performance: X

Location: Classroom: Simulator: X In-Plant::

Task Standards: Energize Bus 34C using the SBO diesel as specified in EOP 35 ECA-0.0.

Required Materials: None

General References: EOP 35 ECA-0.0, Loss of All AC Power, Rev. 14

*****READ TO THE STUDENT*****

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

JPM Number: 108 Revision: 1 chg 2

Simulator Requirements:

1. Reset to IC-14. Press "Audible Alarms Disable."
2. Insert the following malfunctions:
   - ED01 - Loss of Off-Site Power.
   - EG06A - Diesel Generator A fails to start.
   - EG06B - Diesel Generator B fails to start.
3. Place the simulator in "RUN."
   - Insert malfunction SG01A at 100% severity until an SI is actuated, then remove SG01A
4. While waiting for the SI to actuate perform the following actions:
   - Under "Instructor Directed Actions," select EGR08 to "START" (SBO Diesel Control).
   - EDR33 to turn on synch scope for SBO
   - At MB8 OPEN the train A SBO tie breaker (34A1-2).
   - Using ECA-0.0, step 6, place the pump/component control switches in "PULL-TO-LOCK."
5. After the SI actuates,.
   - Remove malfunction SG01A
   - Acknowledge all alarms
   - Reset "Audible Alarms Disable,"
   - DO NOT RESET SI
   - Place the simulator in "FREEZE."
6. After the examinee has received the initial conditions and initiating cues, place the simulator in "RUN."

Approximate simulator setup time is 10-15 minutes.

Initial Conditions: A total loss of all AC power has occurred which resulted in a plant trip. The Control Room Team is progressing through the EOPs and has dispatched operators to attempt to start the EDGs. It is unlikely that the EDGs will be started due to the nature of their failures. The SBO diesel is running with an operator standing by in the SBO diesel enclosure. Attachment G ECA 0.0 is complete with the exception of closing the SBO diesel output breaker. Attachment H of ECA-0.0 was completed to align the SBO to Bus 34A.

Initiating Cues: The US has directed you to energize Bus 34C from the SBO diesel using ECA-0.0 steps 7.a. through 7.o.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

Start Time: _____

| | | | | |
|---|---|---|---|---|
| **STEP** | **1** | _____ | **Performance Step:** | Verify both AC emergency busses – DEENERGIZED. (step 7.a) |
| **GRADE** | _____ | _____ | **Standards:** | Observes the bus voltage meters for busses 34C and 34D both indicate zero volts. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **2** | _____ | **Performance Step:** | OPEN the following breakers:<br>EDG supply breaker for selected emergency AC bus.<br>For Bus 34C: DGA*34C-2.<br>(step 7.b.1) |
| **GRADE** | _____ | _____ | **Standards:** | Observes that the indicating lights for breaker DGA*34C-2 are green ON, red OFF and the control switch flag is GREEN. The breaker is open. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | |
|---|---|---|---|
| **STEP** 3 ____ | **Performance Step:** | OPEN the following breakers:<br>NSST feeder breaker for selected non-emergency AC bus.<br>For Bus 34A: NSSA-34A-2<br>(step 7.b.2) |
| **GRADE** ____ ____ | **Standards:** | Observes breaker indication green ON, amber ON, red flag displayed on breaker switch. |
| | **Comments:** | Since the breaker is already open, the examinee may elect to NOT rotate the switch to the "TRIP" position.<br>Matching flags on the breaker switch is NOT necessary to complete this step as long the breaker is determined to be OPEN. |
| **GRADE** ____ ____ | **Standards:** | Rotates the control switch for breaker NSSA-34A-2 to the trip position.<br>Observes the indicating flag changes to GREEN, the amber light goes OFF and the green light remains ON. |
| | **Comments:** | Annunciator MB8A:5-9 "BUS 34A NORM SPLY AUTO TRIP" clears.<br>The examinee should acknowledge the alarm. However, this action is NOT necessary to complete this step. |
| | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

**Comments:**

| | | | | |
|---|---|---|---|---|
| **STEP** | **4** | **X** | **Performance Step:** | RESET SI if necessary. (step 7.c) |
| **GRADE** | | **X** | **Standards:** | Depresses both SI reset pushbuttons on MB2. |
| | | | **Comments:** | The MB2 annunciator associated with resetting the SI signal will CLEAR and the MB4 annunciator associated with blocking the automatic SI actuation will alarm. The examinee should acknowledge these alarms. However, this is not necessary to complete the critical nature of this step. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **5** | **X** | **Performance Step:** | Close SBO diesel output breaker as follows:<br>1) Verify local start of SBO diesel (*Using Attachment G*) – COMPLETED<br>2) Locally Close SBO diesel output breaker (step 7.d.1 & 2) |
| **GRADE** | ____ | ____ | **Standards:** | Confirms that the SBO diesel was started. (This was given in the initial conditions.) |
| **GRADE** | ____ | **X** | **Standards:** | Either directly calls the PEO in the SBO diesel enclosure or has the US contact the PEO to close the SBO output breaker. |
| | | | **Comments:** | Under "Remote Function," select:<br>• EDR33 to "ON" to turn on the SBO Sync. Select switch and<br>• EDR32 to "CLOSE" to close the SBO diesel output breaker<br>Role-play as the PEO and provide the following cue: |
| | | | **Cue:** | **The SBO diesel output breaker is CLOSED.** |
| | | | **Comments:** | Annunciator MB8B:2-10 "SBO DIESEL LOCAL PANEL TROUBLE" will clear because the SBO MCC is now powered from the SBO instead of the battery. The examinee should acknowledge this alarm. However, this action is NOT necessary to complete the critical nature of this step. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **6** | **X** | **Performance Step:** | Open the following load center supply breakers for the selected non-emergency AC bus. For Bus 34A:<br>32A (32A-2)<br>32B (32B-2)<br>32C (32C-2)<br>32D (32D-2)<br>32E (32E-2)<br>32F (32F-2)<br>32G (32G-2) (step 7.e) |
| **GRADE** | | **X** | **Standards:** | Rotates the control switch to "TRIP" for each listed breaker. Observes the GREEN flag is displayed on each breaker control switch and the indicating lights for each breaker shift to green ON, red OFF. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| | | | **Comment** | For any series of pumps being placed in OFF or PTL it is acceptable for the examinee to place all of the pumps in PTL or OFF. The examinee must, at a minimum, place the selected busses in PTL or OFF. |
| **STEP** | 7 | X | **Performance Step:** | Align the selected non-emergency AC bus. Place the following switches in PULL-TO-LOCK:<br>• Screen wash pump<br>• Circulating water pumps<br>• TPCCW pump(s) (step 7.f.1) |
| **GRADE** | ____ | X | **Standards:** | At MB6, positions the "A" screen wash pump control switch to "PULL-TO-LOCK" and observes that all "A" screen was pump indicating lights go OFF. |
| **GRADE** | ____ | X | **Standards:** | At MB6, positions the "A," "C" & "E" circulating water pump control switches to "PULL-TO-LOCK" and observes that all "A," "C" & "E" circulating water pump indicating lights go OFF. |
| **GRADE** | ____ | X | **Standards:** | At MB6, positions the "A" & "C" TPCCW pump control switches to "PULL-TO-LOCK" and observes that all "A" & "C" TPCCW pump indicating lights go OFF. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| | | | **Comment** | For any series of pumps being placed in OFF or PTL it is acceptable for the examinee to place all of the pumps in PTL or OFF. The examinee must, at a minimum, place the selected busses in PTL or OFF. |
| **STEP** | 8 | X | **Performance Step:** | Place the following switches in STOP:<br>• CDS chiller(s)<br>• Heater drain pump(s)<br>• MSR drain pump (step 7.f.2) |
| **GRADE** | ____ | X | **Standards:** | At MB1 positions the "1A" & "1C" CDS chiller control switches to "STOP" and observes the indicating lights shift to amber OFF, green remains ON. |
| | | | **Comments:** | Annunciator MB1C:5-5 "CHW MECH REF AUTO TRIP/OVERCURRENT" will clear. The examinee should acknowledge the alarm. However, this action is NOT necessary to complete the critical nature of this step. |
| **GRADE** | ____ | X | **Standards:** | At MB6 positions the "A" & "C" heater drain pump control switches to "STOP" and observes the indicating lights shift to amber OFF, green remains ON. |
| **GRADE** | ____ | X | **Standards:** | At MB6 positions the MSR "A"drain pump control switch to "STOP" and observes the indicating lights shift to amber OFF, green remains ON. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

**STEP** 9 ____ **Performance Step:** Verify local alignment of selected busses (Using Attachment H or I) – COMPLETED. (step 7.g)

**GRADE** ____ ____ **Standards:** Confirms that ECA-0.0, Attachment H is complete. (This was provided in the initial conditions.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 10 ____ **Performance Step:** Place the remaining service water pump on the selected emergency bus in PULL-TO-LOCK. (step 7.h)

**GRADE** ____ ____ **Standards:** Rotates the control switch for the remaining service water pump to "PULL-TO-LOCK" and observes that all indicating lights for that service water pump go OFF.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 11 ____ **Performance Step:** Reset the undervoltage block for the selected emergency bus. Verify annunciator for Bus 34C: "BUS 34C UNDERVOLTAGE (MB8A:3-12) – NOT LIT. (step 7.i.1)

**GRADE** ____ ____ **Standards:** Observes that annunciator MB8A:3-12 is not illuminated.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **12** | **X** | **Performance Step:** | Press undervoltage block BYPASS pushbutton (MB8R). (step 7.i.2) |
| **GRADE** | ____ | **X** | **Standards:** | Depresses the "BUS 34C UNDERVOL PLK P.B." bypass pushbutton and observes the white indicating light goes OFF. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | **13** | **X** | **Performance Step:** | RESET LOP (MB2) for the selected train. (step 7.j) |
| **GRADE** | ____ | **X** | **Standards:** | Depresses the Train "A" LOP Reset pushbutton on MB2. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **14** | **X** | **Performance Step:** | CLOSE SBO bus tie breaker (MB8) for selected non-emergency AC bus. For Bus 34A: 34A1-2. (step 7.k) |
| **GRADE** | | **X** | **Standards:** | Rotates the breaker 34A1-2 control switch to "CLOSE" and observes the flag shifts to red and the indicating lights shift to green OFF, red ON. |
| | | | **Comments:** | Annunciator MB8A:2-9 "BUS 34A UNDERVOLTAGE" will clear. The examinee should acknowledge the alarm. However, this action is not necessary to complete the critical nature of this step. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | **15** | **X** | **Performance Step:** | Place the synchronizing selector to ON for the selected emergency and non-emergency busses. For Bus 34A and 34C: SYNC SEL 34A-34C Tie. (step 7.l) |
| **GRADE** | | **X** | **Standards:** | Positions the SYNC SEL 34A-34C TIE switch to "ON." |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **16** | **X** | **Performance Step:** | CLOSE the bus tie breaker between the selected emergency and non-emergency busses. For 34A and 34C: 34*1T-2. (step 7.m) |
| | | | **Comments:** | Since there is nothing to reset at this point associated with this breaker, the examinee may elect not to rotate the switch to the "TRIP" position prior to closing the breaker. The examinee may elect to "match flags" on the breaker control switch prior to closing the breaker. Either method is acceptable for achieving the critical nature of this step |
| **GRADE** | ____ | ____ | **Standards:** | Rotates the 34A-34C control switch to "TRIP" and observes the indicating flag shifts to GREEN, and the indicating lights shift to amber OFF, green remains ON. |
| | | | **Comments:** | Annunciator MB8A:5-12 "BUS 34C NORM SPLY AUTO TRIP" will clear. The examinee should acknowledge the alarm. However, this action is not necessary to complete the critical nature of this step. |
| **GRADE** | ____ | **X** | **Standards:** | Rotates the 34A-34C control switch to "CLOSE" and observes the indicating flag shifts to red, and the indicating lights shift to green OFF, red ON. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 108 Revision: 1 chg 2

Task Title: ENERGIZE ANY EMERGENCY BUS FROM THE SBO DIESEL

| | | | | |
|---|---|---|---|---|
| **STEP** | **17** | | **Performance Step:** | Place the synchronizing selector to OFF for the selected emergency and non-emergency busses. For bus 34A and 34C: SYNC SEL 34A-34C Tie. (step 7.n) |
| **GRADE** | | | **Standards:** | Positions the SYNC SEL 34A-34C TIE switch to "OFF." |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **18** | | **Performance Step:** | Check any AC emergency bus – ENERGIZED. (step 7.o) |
| **GRADE** | | | **Standards:** | Observes that bus voltage is indicated on Bus 34C and that voltage is also indicated for the 480v busses supplied from Bus 34C. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **19** | | **Performance Step:** | Notify the US that busses 34A and 34C have been energized using the SBO diesel. |
| **GRADE** | | | **Standards:** | Informs the US that steps 7.a through 7.o of ECA-0.0 are complete and busses 34A and 34C are energized by the SBO diesel. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Terminating Cue:** | The evaluation for this JPM is concluded. |

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 108 Revision: 1 chg 2

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 12

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

**JPM Number:** 108

**Initial Conditions:** A total loss of all AC power has occurred which resulted in a plant trip. The Control Room Team is progressing through the EOPs and has dispatched operators to attempt to start the EDGs. It is unlikely that the EDGs will be started due to the nature of their failures. The SBO diesel is running with an operator standing by in the SBO diesel enclosure. Attachment G ECA 0.0 is complete with the exception of closing the SBO diesel output breaker. Attachment H of ECA-0.0 was completed to align the SBO to Bus 34A.

**Initiating Cues:** The US has directed you to energize Bus 34C from the SBO diesel using ECA-0.0 steps 7.a. through 7.o.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: Line Up RHR in the Injection Mode

JPM ID Number: NRCset2f Revision: 0

II. Initiated:

J. William Côté
Developer

2/7/00
Date

III. Reviewed:

C Martin
Technical Reviewer

2/25/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode (Respond to an RCS Leak)

System: RHR

Time Critical Task: ( ) YES ( **X** ) NO

Validated Time (minutes): 10

Task Number(s): 344-05-089 Respond to a RCS Leak
005-01-021 Shifting RHR from cooldown to safety injection mode

Applicable To: SRO **X** RO **X** PEO ____

K/A Number: 006.A4.04 K/A Rating: 3.7/3.6

Method of Testing: Simulated Performance: ____ Actual Performance: **X**

Location: Classroom: ____ Simulator: **X** In-Plant:: ____

Task Standards: Shift RHR to the injection mode IAW AOP 3555, Respond to a RCS Leak

Required Materials: Simulator

General References: AOP, 3555, Respond to a RCS Leak

*****READ TO THE STUDENT*****

I will explain the initial conditions, which step(s) to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objectives for this JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports, alarm acknowledgements, and log entries as if the evolution was actually being performed. Any annunciators not directly related to your task will be handled by another person.

# JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: NRCset2f Revision: 0

Simulator Requirements:

1. Reset to IC 89 for NRC Exam. (This IC will be transferred to the open IC listing after the Y2K NRC exam. Check IC listing for JPM number)
2. Place Simulator in run. Acknowledge all annunciators.
3. Place a key #22 in the 3 RHS*8701B operator
4. Place Sim in Freeze. Go to run when examinee is ready to commence.

Initial Conditions: The plant is in mode 4 with a plant cooldown in progress. Both trains of RHR are aligned in the cooldown mode. Pzr Level started to drop. The crew has entered AOP 3555, Respond to a RCS Leak. The crew has started all available CHS Pumps and throttled open on the CHS Flow control valve. SI Pump "A" failed to start.

Initiating Cues: The Unit Supervisor request you align the "A" train of RHR to the injection mode using AOP 3555, Respond to a RCS Leak, step 3, Align RHR In Mode 4.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").
4. Acknowledging of annunciators is not necessary to pass the critical nature of any step.

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

Start Time: _____

**STEP** 1 X **Performance Step:** Place RHR pumps lined up for *shutdown cooling* in PULL-TO-LOCK

**GRADE** _____ _____ **Standards:** Stops both RHR Pumps and places the control switches at MB2 in Pull to Lock

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 2 _____ **Performance Step:** Check - ONE TRAIN OF RHR LINED UP FOR INJECTION

**GRADE** _____ _____ **Standards:** Verifies that both trains of RHR were aligned in the Shutdown Cooling Mode. Shifts actions to the Response Not Obtained column.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** If necessary remind examinee that the initial conditions stated that both trains were aligned for cooldown.

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

| | | | | |
|---|---|---|---|---|
| **STEP** | 3 | X | **Performance Step:** | CLOSE RHR letdown flow control valve (3CHS-HC128) |
| **GRADE** | | | **Standards:** | Locates the controller on MB3 apron and rotates the potentiometer to 0.0 (Full closed) |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | |

| | | | | |
|---|---|---|---|---|
| **STEP** | 4 | X | **Performance Step:** | CLOSE RHR outer Ctmt isolation valve (3RHS*MV8701B). |
| **GRADE** | | | **Standards:** | Locates the valve controller on MB2 and places switch in close. Green light on, Red light off. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | Key #22 from RO key locker |

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

STEPS 5 and 6 may be done in any order

**STEP** 5 ____ **Performance Step:** Close RHR heat exchanger bypass valve (3RHS-FK618) (100% output)

**GRADE** ____ ____ **Standards:** Locates the controller on MB2 and rotates the potentiometer to the 100% demand position (0.0 position) or places the controller in manual and lowers to full demand (full lower).

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 6 ____ **Performance Step:** Close RHR heat exchanger outlet flow control valve (3RHS-HC606)

**GRADE** ____ ____ **Standards:** Locate the controller on MB2 and rotates the potentiometer to the 0% demand position (10.0 on potentiometer).

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 7 ____ **Performance Step:** Place the "HX A FLOW CONT" switch in the "NORMAL" position

**GRADE** ____ ____ **Standards:** Locates the control switch on the MB2 apron and places in the "NORM" position

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

**Cue:**

**Comments:**
Steps 8 and 9 may be done in any order

| | | | | |
|---|---|---|---|---|
| **STEP** | 8 | X | **Performance Step:** | Adjust RHR heat exchanger bypass valve controller (3RHS-FK618) in manual to full open (0% output) |
| **GRADE** | ____ | ____ | **Standards:** | Locates controller on MB2 and presses the up arrow to the full up position which is the 0% demand position |

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

| | | | | |
|---|---|---|---|---|
| **STEP** | 9 | ____ | **Performance Step:** | Adjust RHR heat exchanger outlet flow valve controller demand (3RHS-HC606) to open (0.0 on the potentiometer) |
| **GRADE** | ____ | ____ | **Standards:** | Locate the controller on MB2 and rotates the potentiometer to the 100% demand position. |

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** **If questioned about the tracking of 606 demand inform the examinee to continue on**

**Comments:** The status panel Group 1, 8-8 will indicate 606 & 618 are full open

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

| | | | | |
|---|---|---|---|---|
| **STEP** | 10 | X | **Performance Step:** | OPEN RWST to RHR pump suction isolation valve (3SIL*MV8812A) |
| **GRADE** | | | **Standards:** | Locates the controller on MB3 and pushes "OPEN" pushbutton. Observes red light on and green light off |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | |
| **STEP** | 11 | | **Performance Step:** | Verify RHR cold leg injection isolation valve (3SIL*MV8809A) - OPEN |
| **GRADE** | | | **Standards:** | Locates controller on MB3 and verifies red light on and green light off |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | |
| **STEP** | 12 | X | **Performance Step:** | Place RHR pump 3RHS*P1A in AUTO |
| **GRADE** | | | **Standards:** | Rotates hand switch from Pull to Lock to "Off/ auto start" position |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | |

# PERFORMANCE INFORMATION

JPM Number: NRCset2f Revision: 0

Task Title: Line Up RHR in the Injection Mode

**STEP** 13 X **Performance Step:** Initiate SI

**GRADE** ____ ____ **Standards:** Locates and rotates either MB2 or MB4 SI switch to the "SI" position and release the switch

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:** Examinee may verify RHR Pump "A" auto started at this point but is not required to satisfy the critical nature of this step.

**STEP** 14 ____ **Performance Step:** Go to E-0, Reactor Trip or Safety Injection

**GRADE** ____ ____ **Standards:** The examinee either announces the transition or makes and effort to commence E-0, Reactor Trip or Safety Injection

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**THE EVALUATION PORTION OF THIS JPM IS COMPLETE.**

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: NRCset2f Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("**S**" for satisfactory, "**U**" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: MANUALLY PERFORM MSLI

ID Number: JPM-048 Revision: 3 chg1
2/21/00

II. Initiated:

R.L. Lueneburg 9/15/97
Developer Date

III. Reviewed:

Martin 2/24/00
Technical Reviewer Date

Instructional Reviewer 2-21-00
Date

IV. Approved:

Operations Manager Date

Nuclear Training Supervisor 2/25/00
Date

# JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3 Examinee: _____

JPM Tracking Number: 048 Validation Time: 3 minutes

Task Title: MANUALLY PERFORM MSLI

Time Critical Task: ( ) YES ( X ) NO

Task Number: 000*011*05*01

K/A Number: 000 EA1.04 K/A Rating: 4.3 / 4.3

Applicable Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Satisfactorily perform a main steam line isolation using the guidance in E-0

Required Materials: None.

General References: EOP 35 E-0 Rev. 17

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 objectives for this JPM will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed.

Initial Conditions: A loss of coolant accident has occurred. A reactor trip and SI have been initiated. The control room team has carried out the immediate actions of EOP 35 E-0. The annunciator "master/silence" switch is in silence.

Initiating Cues: The US has directed you to perform Step 10 of EOP 35 E-0.

Simulator Condition:

1. RESET to IC-14, 100% steady state conditions.
2. Insert malfunction RP08A and RP08B - MSLI fails to actuate.
3. To cause both (MB5 and MB2) MSLI push-buttons to be inoperable, enter the following I/O overrides:

   System = RP

| Tag Number | Value | System |
|---|---|---|
| PB1-3MSS-SLI | Activate Off | RP |
| PB2-3MSS-SLI | Activate Off | RP |

4. Place the simulator in "RUN" and insert malfunction RC03A - Loop 1 Cold Leg LOCA at 100% severity.
5. Place the annunciator "master/silence" switch to "silence".
6. Perform EOP 35 E-0 actions up to, and including step 9. Do not acknowledge or clear annunciators at this time.
7. Place the simulator in "FREEZE".
8. After the examinee has received the initiating cues and initial conditions, place the simulator in "RUN".

Approximate setup time is 7 minutes.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E00

JPM Number: 048

Task Title: MANUALLY PERFORM MSLI

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

| | | | | |
|---|---|---|---|---|
| | | | **Comments:** | Based on the JPM setup containment pressure will be greater than 18 psia. The operator may determine that an MSLI is required without checking the SG pressures. This is acceptable. |
| **STEP** | 1 | X | **Performance Step:** | Check if main steam lines should be isolated.<br>Check Ctmt pressure - GREATER THAN 18 psia<br>OR<br>any SG pressure - LESS THAN 660 psig. |
| **GRADE** | ____ | X | **Standards:** | Checks containment pressure indications on MB2 and SG pressure indications on MB5/MB2. Determines that a main steam line isolation actuation is required. |
| **STEP** | 2 | ____ | **Performance Step:** | Verify MSIV and MSIV bypass valves - CLOSED. |
| **GRADE** | ____ | ____ | **Standards:** | Checks the valve position indicating lights and determines that the MSIVs are open (green lights OFF, red lights ON) and the MSIV bypass valves are closed (green lights ON, red lights OFF). |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E00

JPM Number: 048

Task Title: MANUALLY PERFORM MSLI

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| | | | **Comments:** | The examinee should realize that a MSLI has not occurred and proceed to the actions under the "Response Not Obtained" column. The examinee may make this report to the US. |
| **STEP** | 3 | | **Performance Step:** | Initiate MSI. |
| **GRADE** | | | **Standards:** | Initiate MSI via the push-buttons on MB2 and/or MB5 and checks the position indicating lights for the MSIV's (remain green OFF, red ON). Recognizes that a MSI cannot be initiated via the control board push-buttons and continues in the "Response Not Obtained" column. |
| | | | **Comments:** | The examinee may decide to inform the US of this failure, but it is not required to complete this step. |
| **STEP** | 4 | X | **Performance Step:** | IF MSI will NOT actuate, THEN CLOSE the MSIVs and MSIV bypass valves. |
| **GRADE** | | X | **Standards:** | Rotates each of the MSIV control switches on MB5 to the "CLOSE" position and verifies the valves close by observing the indicating lights shift to green ON, red OFF. Verifies the MSIV bypass valves closed by observing green indicating lights. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: E00

JPM Number: 048

Task Title: MANUALLY PERFORM MSLI

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 5 | ____ | **Performance Step:** | Report that a main steam line isolation has been carried out. |
| **GRADE** | ____ | ____ | **Standards:** | Reports to the US that the MSIVs and MSIV bypass valves are closed and the actions of Step 10 in EOP 35 E-0 are completed. If not previously reported, informs the US of the failure of the automatic MSI to actuate. |

**Terminating Cue:** The evaluation for this JPM is concluded.

Stop Time: _____

# VERIFICATION OF COMPLETION

Job Performance Measure Number: 048 Revision: 3 chg1

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min.): 3 Actual time to Complete (min.): _____

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

Result of oral questions: Number of Questions: _____

Number of Correct Responses: _____

Score _____ %

# EXAMINEE HANDOUT

## INITIAL CONDITIONS AND INITIATING CUES

**JPM Tracking Number:** 048

**Initial Conditions:** **A loss of coolant accident has occurred. A reactor trip and SI have been initiated. The control room team has carried out the immediate actions of EOP 35 E-0. The annunciator "master/silence" switch is in silence.**

**Initiating Cues:** **The US has directed you to perform Step 10 of EOP 35 E-0.**

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: TEST START OF THE "B" EDG FROM MB8

JPM ID Number: 026

Revision: 4, Chg. 2
02/21/00

II. Initiated:

D. L. Minnich
Developer

9/9/97
Date

III. Reviewed:

R. T. Carr
Technical Reviewer

9/27/97
Date

IV. Approved:

Martin
Cognizant Plant Supervisor (optional)

2/25/00
Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

System: EDG

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 18

Task Number(s): 064-01-016

Applicable To: SRO _____ RO _____ PEO _____

K/A Number: 064-000-A4.01 K/A Rating: 4.0 / 4.3

Method of Testing: Simulated Performance: _____ Actual Performance: X

Location: Classroom: _____ Simulator: X In-Plant:: _____

Task Standards: Satisfactorily start the "B" Emergency Diesel Generator from MB8 using OP 3346A.

Required Materials: None. Stop watch

General References: OP 3346A, Rev. 20

*****READ TO THE STUDENT*****

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

JPM Number: 026 Revision: 4, Chg. 2

Simulator Requirements:

1. Reset to IC-14
2. Place the simulator in "Run" and check that the IC is stable. It is not necessary to place the simulator in "freeze".
3. Commence the JPM evaluation after the examinee has received the initial conditions and initiating cues.

Approximate simulator setup time is 3-5 minutes.

Initial Conditions: The plant is in a normal electric plant lineup with both EDGs ready for automatic loading. The Outside Rounds PEO has been sent to the "B" EDG enclosure and completed the preliminary checks for starting the "B" EDG. The prestart portions of the Diesel Generator Data Sheet (OPS Forms 3346A-13) and Diesel B Operating Log (OPS Form 3346A-15) have been completed. The SBO diesel is not running. The other RO is filling out the Ops Forms.

Initiating Cues: The US has directed you to conduct a start of the "B" EDG from MB8 using OP 3346A, Section 4.4 starting with step 4.4.4. The EDG is to be paralleled to the bus and loaded to 4500KW.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.
2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

Start Time: _____

| | | | | |
|---|---|---|---|---|
| **STEP** | 1 | X | **Performance Step:** | OPEN 3SWP*AOV39B, "DG B OUT" (MB1). (Step 4.4.4) |
| **GRADE** | ____ | X | **Standards:** | Depresses the "open" pushbutton for 3SWP*AOV39B on MB1 and observes that the indicating lights shift to green OFF, red ON. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 2 | ____ | **Performance Step:** | VERIFY "EDG B" "VOLT REG SEL" (MB8), in "AUTO" (preferred) or "MANUAL". (Step 4.4.5) |
| **GRADE** | ____ | ____ | **Standards:** | Observes the control switch for the "B" diesel generator voltage regulator is aligned to the "AUTO" position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 3 | ____ | **Performance Step:** | REQUEST Operator press "EXCITER RESET" button (3EGS*PNLB), and CHECK white "READY FOR AUTO START" (3EGS*PNLB) light lit. (Step 4.4.6) |
| **GRADE** | ____ | ____ | **Standards:** | Contacts the Outside Rounds PEO and directs the "exciter reset" button pressed and checks the "ready for auto start " light lit. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**Cue:** Inform the examinee that the exciter

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

has been reset and 'ready for auto start' light is lit.

**Cue:** Prior to the next step, inform the examinee that the rocker arm prelube pump has not been run in the last 24 hours.

**STEP** 4 ____ **Performance Step:** START EGO*P1B, "PRELUBE" pump (MB8). [SER 102-81]. (Step 4.4.7)

**GRADE** ____ ____ **Standards:** Rotates the control switch for the "B" diesel generator rocker arm prelube pump to the "start" position and observes that the indicating lights shift to green OFF, red ON. Also notes the time that the prelube pump was started.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 5 ____ **Performance Step:** WHEN two minutes have elapsed, STOP EGO*P1B, "PRELUBE" pump (MB8). (Step 4.4.8)

**GRADE** ____ ____ **Standards:** After the prelube pump has run for 2 minutes, rotates the control switch for the "B" diesel generator rocker arm prelube pump to the "stop" position and observes the indicating lights shift to green ON, red OFF.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

**STEP** 6 ____ **Performance Step:** VERIFY SBO diesel is not paralleled to bus 34D. (Step 4.4.9)

**GRADE** ____ ____ **Standards:** As part of the initial conditions, the examinee was told that the SBO diesel was not running. May check the SBO diesel breaker (3BGS-ACB-BG-A is OPEN) on MB8 as a second check.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** If the examinee asks the US the status of the SBO provide the following **Cue:** The SBO diesel is not running.

**Cue:** Prior to the next step, the examinee may request plant status based on the Caution in the procedure. Based on his requests provide the appropriate cues:

- The opposite train diesel is operable
- The opposite train diesel is not operating
- Severe weather conditions do not exist
- The grid is stable and a loss of offsite power is not anticipated.

Comment: The RO may request the stopwatch to time the EDG start or they may use the computer.

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

**STEP** 7 ____ **Performance Step:** CHECK that the following conditions do not exist:

- Emergency diesel generator A is inoperable
- Emergency diesel generator A is operating in parallel.
- Severe weather
- Other possible loss of offsite power (LOP) condition.

(Step 4.4.10)

**GRADE** ____ ____ **Standards:** Checks MB8 indications for the status of the other diesel generator and offsite power. Asks the US for the status of the other parameters.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Provide the appropriate cues as listed above this step based on the questions from the examinee.

**STEP** 8 X **Performance Step:** PLACE diesel generator B "MODE SEL" switch (MB8) in "PARALLEL". (Step 4.4.11)

**GRADE** ____ X **Standards:** Rotates the "B" diesel generator mode selector switch to the "parallel" position.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

| | | | | |
|---|---|---|---|---|
| **STEP** | 9 | X | **Performance Step:** | PLACE diesel generator B "START" switch (MB8) in "START". (Step 4.4.12) |
| **GRADE** | | X | **Standards:** | Rotates the start switch for the B diesel generator to the "start" position and observes that exciter volts, generator volts and generator frequency meters will move off their bottom pegs as EDG comes up to speed. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Comments:** | The examinee should note the length of time for the diesel to start. This will be used to complete form 3346A-13. It is not necessary to complete the form to satisfy the critical nature of this step. |
| **STEP** | 10 | | **Performance Step:** | CHECK diesel generator B "LOAD" light (MB8) lit. WHEN diesel speed is 514 RPM (60 Hz), CHECK diesel generator a (B) "LOAD" lamp is lit. (Step 4.4.13) |
| **GRADE** | | | **Standards:** | When the "B" diesel generator frequency meter indicates 60 Hz, observes that the white "LOAD" light is on. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**STEP** 11 ____ **Performance Step:** COMPLETE initial portion of OPS Form 3346A-13, "Diesel Generator Data Sheet". (Step 4.4.14)

**GRADE** ____ ____ **Standards:** Completes the section for time diesel started and the diesel starting time.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** You may need to inform the examinee that the other RO is filling out the log sheet.

**STEP** 12 ____ **Performance Step:** IF diesel generator B is to be paralleled to bus 34D, Go To Section 4.12. (Step 4.4.15)

**GRADE** ____ ____ **Standards:** Proceeds to section 4.12.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** If necessary, remind examinee that initiating cues are to start EDG along with, parallel and load to 4500KW from MB8.

**STEP** 13 ____ **Performance Step:** IF paralleling diesel from Control Room, PERFORM the following (MB8): IF "CONTROL MODE" switch is selected to "LOCAL", using key # ILCO 999NY1E, PLACE "CONTROL MODE" switch in "REMOTE" (3EGS*PNLB). (Step 4.12.1.a)

**GRADE** ____ ____ **Standards:** Contacts Outside Rounds PEO to check the position of the "Control Mode" switch.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

**Cue:** If the examinee contacts the PEO, provide the following **Cue:** The "Control Mode" switch is in "Remote".

| | | | | |
|---|---|---|---|---|
| **STEP** | 14 | X | **Performance Step:** | PLACE diesel generator B to bus 34D "SYNC SEL" switch in "ON". (Step 4.12.1.b) |
| **GRADE** | ____ | X | **Standards:** | Places the "B" train handle into the "B" diesel generator to bus 34D synchronizing selector switch and rotates the handle to the "on" position. Will also observe rotation of the synchroscope. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | 15 | ____ | **Performance Step:** | IF 34C-1T-2, "34D-34B TIE" is closed, CHECK SBO D/G not paralleled to bus 34B. (Step 4.12.1.c) |
| **GRADE** | ____ | ____ | **Standards:** | Observes that 34D-1T-2 tie breaker is closed. Checks that the SBO D/G is not in parallel with bus 34B. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

| | | | | |
|---|---|---|---|---|
| **STEP** | 16 | X | **Performance Step:** | SYNCHRONIZE diesel to bus 34D as follows:<br><br>a. ADJUST diesel generator B "SPEED/LOAD" switch to obtain slow rotation of synchroscope in fast direction.<br><br>b. Using the selected regulator, ADJUST "EDG B" voltage regulator to obtain "INCOMING" voltage slightly greater than "RUNNING" voltage:<br>• "AUTO VOLT REGULATOR"<br>• "MAN VOLT REGULATOR"<br>(Step 4.12.1.d) |
| **GRADE** | ____ | X | **Standards:** | Rotates the "B" diesel generator Speed/Load switch to the "raise/lower" positions as necessary so the synchroscope is rotating slowly in the fast direction. |
| **GRADE** | ____ | X | **Standards:** | Rotates the "B" diesel generator voltage regulator adjust switch to the "raise/lower" positions as necessary until the "INCOMING" voltage is slightly higher than the "RUNNING" voltage. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 17 | X | **Performance Step:** | WHEN the synchroscope is rotating slowly in fast direction AND is at five minutes before twelve o'clock position, CLOSE DGB*34D-2, "EDG B SPLY". (Step 4.12.1.e) |
| **GRADE** | ____ | X | **Standards:** | When the synchroscope is at the five |

minutes to twelve o'clock position, rotates the control switch for diesel generator "B" supply breaker to the "close" position and observes the indicating lights shift to green OFF, red ON.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 18 X **Performance Step:** Using the diesel generator B "SPEED/LOAD" switch, LOAD diesel to a minimum of 200kW as read on "KW". (Step 4.12.1.f)

**GRADE** ____ X **Standards:** Observes the load on the diesel. Rotates the "speed/load" switch to the "raise/lower" positions as necessary to load the diesel to at least 200kW.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 19 ____ **Performance Step:** PLACE diesel generator B to bus 34D "SYNC SEL" switch in "OFF". (Step 4.12.1.g)

**GRADE** ____ ____ **Standards:** Rotates the diesel generator "B" to bus 34D synchronizing selector switch to the "off" position.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

**STEP** 20 ____ **Performance Step:** OBSERVE the following load/duration limits:

| Load | Maximum Duration |
|---|---|
| ≤5000 kW | 8,760 Hrs. |
| 5000-5335 kW | 2000 Hrs. |
| 5335-5500 kW | 160 Hrs. |
| 5500-6000 kW | 30 min |
| > 6000 kW (Step 4.12.3) | Prohibited |

**GRADE** ____ ____ **Standards:** The initial conditions stated that the diesel was to be loaded to 4500kW. Consequently, it may run at this load for a prolonged period of time.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** If the examinee questions to what amount the diesel is to be loaded, provide the following **Cue:** The "B" EDG is to be loaded to 4500kW.

**STEP** 21 ____ **Performance Step:** NOTIFY Engineering Department of any operation with load greater than 5000kW, including load and duration of operation above 5000kW. (Step 4.12.4)

**GRADE** ____ ____ **Standards:** Since the diesel is only to be loaded to 4500kW, no action is required.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

| | | | | |
|---|---|---|---|---|
| **STEP** | 22 | X | **Performance Step:** | Using ADJUST load as required using one of the following:<br>• "SPEED/LOAD" (MB8)<br>• "GOVERNOR CONTROL" (3EGS*PNLB)<br>(Step 4.12.5) |
| **GRADE** | ____ | X | **Standards:** | Rotates the "SPEED/LOAD" switch in the "raise/lower" directions as necessary to increase load. Observes the caution limit of normal loading rate is approximately 10%/min. Consequently, picks up approximately 450-500kW per minute. Total time to reach 4500KW should be 9 minutes +/- 1.5 minutes based in initial KW load. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 23 | ____ | **Performance Step:** | Using appropriate voltage regulator control, PERFORM the following to adjust reactive load:<br>• ADJUST voltage regulator to the desired reading (0.6 if not otherwise directed) on "MVAR" (MB8).<br>• ADJUST voltage regulator to the desired reading (600 if not otherwise directed) on "KILOVARS" (3EDG*PNLB).<br>(Step 4.12.6) |
| **GRADE** | ____ | ____ | **Standards:** | Rotates the "B" diesel generator voltage regulator switch to the "raise/lower" positions as necessary to maintain approximately 0.6 MVAR/MWe. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 026 Revision: 4, Chg. 2

Task Title: TEST START OF THE "B" EDG FROM MB8

**Terminating Cue:** When the examinee has either made an adjustment to maintain the MVAR/MWe load, inform him that **"The evaluation for this JPM is completed".**

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 026 Revision: 4, Chg. 2

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 18

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# STUDENT HANDOUT

**JPM Number:** 026

**Initial Conditions:** The plant is in a normal electric plant lineup with both EDGs ready for automatic loading. The Outside Rounds PEO has been sent to the "B" EDG enclosure and completed the preliminary checks for starting the "B" EDG. The prestart portions of the Diesel Generator Data Sheet (OPS Forms 3346A-13) and Diesel B Operating Log (OPS Form 3346A-15) have been completed. The SBO diesel is not running. The other RO will be filling out the Ops forms.

**Initiating Cues:** The US has directed you to conduct a start of the "B" EDG from MB8 using OP 3346A, Section 4.4 starting with step 4.4.4. The EDG is to be paralleled to the bus and loaded to 4500KW.

# JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

ID Number: JPM 073 Revision: 3 chg 1
2/21/00

II. Initiated:

J. William Côté J. William Côté 2/21/00
Developer Date

III. Reviewed:

C Martin 2/24/00
Technical Reviewer Date

IV. Approved:

Cognizant Plant Supervisor (optional) Date

M C Bell 2/25/00
Nuclear Training Supervisor Date

# JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3 JPM Number: 073 chg 1

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

Time Critical Task: ( ) YES ( X ) NO

Validated Time: 10 minutes

Task Number: 006*026*01*02

K/A Number: 006-000-GEN13 K/A Rating: 3.9/4.0

Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Successfully increase pressure in an SI accumulator using OP 3310B, Accumulator Low Pressure Safety Injection.

Required Materials: OP 3310B

General References: OP 3310B, Accumulator Low Pressure Safety Injection

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 objectives for this JPM will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed.

Initiating Cues: The US has directed you to repressurize the "A" LPSI accumulator using OP 3310B section 4.6.

Initial Conditions: The plant is at 100% power. A low pressure alarm has just been received for the "A" LPSI accumulator. The crew is carrying out the actions of ARP 3353MB2A.4-6B.

# JOB PERFORMANCE MEASURE WORKSHEET

Simulator Requirements:

1. Reset to IC #10, 100% power.
2. Insert malfunction SI03A, LPSI accumulator "A" nitrogen leak at 100% severity.
3. Place the simulator in "RUN". When the "A" SI accumulator low pressure alarm is received, remove the malfunction.
4. Acknowledge/clear all annunciators and place the simulator in "FREEZE".
5. Place the simulator in "RUN" after the examinee has received the Initial Conditions and Initiating Cues.

Approximate simulator setup time is 15 minutes.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade)

Start Time: _____

**STEP** 1 ____ **Performance Step:** VERIFY 3SIL-PIC8893, safety injection accumulator nitrogen supply pressure indicating controller, is in AUTO and SET for 660 psig.

**GRADE** ____ ____ **Standards:** The candidate either directly contacts a PEO or requests that the US contact a PEO to check that controller is in "AUTO" and set for 66 psig.

**Cue:** Role play as the PEO or the US and acknowledge the request. Then report to the examinee that the controller is in "AUTO" and set for 660 psig.

**STEP** 2 ____ **Performance Step:** VERIFY the safety injection tank has been filled in accordance with Section 4.1 or Section 4.3.

**GRADE** ____ ____ **Standards:** The candidate checks the accumulator level. Compares the level with acceptable level either in Technical Specifications or on the logs. May request guidance from the US.

**Cue:** If the candidate requests guidance from the US, reply that the accumulator level is within acceptable limits.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade)

| | | | | |
|---|---|---|---|---|
| **STEP** | **3** | | **Performance Step:** | IF reactor coolant system pressure is less than 1015 psia, CHECK closed the safety injection accumulator tank outlet isolation valves. |
| **GRADE** | | | **Standards:** | Reactor coolant system pressure is greater than 1015 psia, so this check is not required. |
| **STEP** | **4** | | **Performance Step:** | CHECK closed 3SIL*HCV943A and 3SIL*HCV943B (MB2), safety injection accumulator tank vent control valves. |
| **GRADE** | | | **Standards:** | Candidate checks 3SIL*HCV HCV943A and 3SIL*HCV943B closed by observing the down arrow (↓) lights are back lit green and there is no output on either controller. |
| **STEP** | **5** | **X** | **Performance Step:** | OPEN 3 SIL*CV8880 (MB2), auxiliary building safety injection accumulator nitrogen supply isolation. |
| **GRADE** | | **X** | **Standards:** | Candidate depresses the "OPEN/AUTO" pushbutton for 3SIL*CV8880 and observes the indicating lights shift to green OFF, red ON. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade)

| | | | | |
|---|---|---|---|---|
| **STEP** | 6 | X | **Performance Step:** | OPEN 3SIL*CV8968 (MB2), containment building safety injection accumulator nitrogen supply isolation. |
| **GRADE** | ____ | X | **Standards:** | Candidate depresses the "OPEN/AUTO" pushbutton for 3 SIL*CV8968 and observes the indicating lights shift to green OFF, red ON. |
| **STEP** | 7 | ____ | **Performance Step:** | WAIT approximately one minute to allow nitrogen piping to pressurize prior to performing Step 4.6.8. |
| **GRADE** | ____ | ____ | **Standards:** | Candidate waits the required one minute before proceeding. |

**Cue:** To expedite the completion of the JPM it is permissible to provide the cue that one minute has elapsed and the candidate should proceed with Step 4.6.8.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade)

| | | | | |
|---|---|---|---|---|
| **STEP** | 8 | X | **Performance Step:** | OPEN one of the two safety injection accumulator tank nitrogen supply valves for the tank to be pressurized. Tank 1: 3SIL*SV8875A or 3SIL*SV8875E. |
| **GRADE** | ___ | X | **Standards:** | For either 3SIL*SV8875A or 3SIL*SV8875E, the candidate depresses the "OPEN" pushbutton and observes the indicating lights shift to green OFF, red ON. |
| **STEP** | 9 | X | **Performance Step:** | WHEN the accumulator tank pressure is between 640 to 660 psia as read on the highest reading pressure gage, CLOSE the safety injection accumulator nitrogen supply valve: Tank 1: pressure gage: 3SIL-PI960/3SIL-PI961; Nitrogen Supply Valves: SIL*SV8875A/3SIL*SV8875E |
| **GRADE** | ___ | X | **Standards:** | The candidate monitors pressure instruments 3SIL-PI960/3SIL-PI961 and determines when the highest reading instrument is reading between 640-660 psia. |
| **GRADE** | | X | **Standards:** | For either 3SIL*SV8875A or 3SIL*SV8875E (whichever one was opened), the candidate depresses the "close" pushbutton and observes the indicating lights shift to green ON, red OFF. |
| | | | **CUE:** | If asked, inform examinee that no other accumulator is to be pressurized |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade)

| | | | | |
|---|---|---|---|---|
| **STEP** | **10** | **X** | **Performance Step:** | CLOSE 3SIL*CV8968 (MB-2), containment building safety injection accumulator nitrogen supply isolation. |
| **GRADE** | ____ | **X** | **Standards:** | The candidate depresses the "CLOSE" pushbutton for 3SIL*CV8968 and observes the indicating lights shift to green ON, red OFF. |
| **STEP** | **11** | **X** | **Performance Step:** | CLOSE 3SIL*CV8880 (MB-2), auxiliary building safety injection accumulator nitrogen supply isolation. |
| **GRADE** | ____ | **X** | **Standards:** | The candidate depresses the "CLOSE" pushbutton for 3SIL*CV8880 and observes the indicating lights shift to green ON, red OFF. |
| **STEP** | **12** | ____ | **Performance Step:** | Notify the US that the "A" LPSI accumulator has been repressurized. |
| **GRADE** | ____ | ____ | **Standards:** | The candidate informs the US that section 4.6 of OP 3310B has been completed and the "A" LPSI accumulator pressure has been restored to the normal band of 640-660 psia. |

Stop Time: _____

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: ECC

JPM Number: 073

Task Title: RAISE PRESSURE IN A SAFETY INJECTION ACCUMULATOR

(Denote Critical Steps - *NOTE* Critical Steps must
be completed correctly to achieve a satisfactory grade)

**Terminating Cue:** The evaluation for this JPM has been completed.

# VERIFICATION OF COMPLETION

Job Performance Measure Number: 073 Revision: 3

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min): 10 Actual time to Complete (min): _____

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

Result of oral questions: Number of Questions: _____

Number of Correct Responses: _____

Score _____ %

Areas for Improvement:

# EXAMINEE HANDOUT

## INITIAL CONDITIONS AND INITIATING CUES

**JPM Tracking Number:** 073 chg 1

**Initial Conditions:** The plant is at 100% power. A low pressure alarm has just been received for the "A" LPSI accumulator. The crew is carrying out the actions of ARP 3353MB2A.4-6B.

**Initiating Cues:** The US has directed you to repressurize the "A" LPSI accumulator using OP 3310B section 4.6.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: Manual Make-up Calculation & Manual Make-up to VCT

JPM ID Number: 141-1 Revision: 0

II. Initiated:

J. William Côté
Developer

2/08/00
Date

III. Reviewed:

Martin
Technical Reviewer

2/24/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/25/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3

JPM ID Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

System: PMU

Time Critical Task: ( ) YES ( **X** ) NO

Validated Time (minutes): 10

Task Number(s): 009-01-037, Perform a Manual Make-up

Applicable To: SRO **X** RO **X** PEO ____

K/A Number: GEN-2.1.25, Interpret Station tables K/A Rating: 2.8/3.1
004.A4.13, Ability to manually operate VCT Level Control 3.3/2.9

Method of Testing: Simulated Performance: ____ Actual Performance: **X**

Location: Classroom: ____ Simulator: **X** In-Plant:: ____

Task Standards: (1) Calculate Pot settings based on 3304C tables and data given and (2) Perform a manual make up to the VCT IAW OP3304C

Required Materials: Simulator & Calculator

General References: OP3304C

*****READ TO THE STUDENT*****

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

JPM Number: 141-1 Revision: 0

Simulator Requirements:

1. Reset the Simulator to IC 14
2. Place simulator in "RUN" and clear all Alarms
3. Ensure "B" BAT Pump is aligned for auto Start.
4. Place the VCT Divert Valve, 3 CHS*LV112A, to Divert
5. When VCT levels 45%, Place VCT Divert Valve, 3 CHS*LV112A, to VCT
6. Set FK-110 potentiometer to a value of 4.0
7. Freeze the simulator
8. Place simulator in run when examinee is Ready to commence Line up for Manual Make-up Task.

Initial Conditions:

Plant is at 100% Power,

Middle of Life conditions, 10,000 MWD/MTU

RCS Boron concentration is 1100 ppm

Boric Acid Storage Tank concentrations are:

BAST "A" concentration:6850 ppm

BAST "B" concentration:6850 ppm

The crew is preparing to perform the daily leak check calculation.

Initiating Cues:

The Unit Supervisor has requested that you calculate a blended flow make up using the graphs in OP3304C and PERFORM a Manual Make-up to the VCT to raise level to 50%. Leave VCT make up control in Manual upon completion.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

4. Acknowledging of annunciators is not necessary to pass the critical nature of any step.

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

Start Time: _____

| | | | | |
|---|---|---|---|---|
| **STEP** | 1 | X | **Performance Step:** | If manually making up to the VCT, PERFORM the following: PLACE "REAC CLNT MAKEUP START SW" (MB3), in "STOP". |
| **GRADE** | ____ | ____ | **Standards:** | Presses the "STOP" pushbutton on the "REAC CLNT MAKEUP START SW" and observes that pushbutton back light comes on. |

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

| | | | | |
|---|---|---|---|---|
| **STEP** | 2 | X | **Performance Step:** | PLACE "REAC CLNT MAKEUP SELECT SW" (MB3), in "MANUAL". |
| **GRADE** | ____ | ____ | **Standards:** | Presses the "MANUAL" pushbutton on the "REAC CLNT MAKEUP SELECT SW" and observes that the pushbutton back light comes on. |

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**STEP** 3 ____ **Performance Step:** VERIFY 3CHS-FK111, "TOTAL MAKEUP FLOW CONT" (MB3), set at 80 gpm.

**GRADE** ____ ____ **Standards:** Either checks Section 1.2 of OP 3304C or knows that 0-10 turns equates to 0-160 gpm. Checks that the potentiometer for 3CHS-FK111 is set for "5".

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** During the performance of the next step, the examinee may request the current RCS boron concentration and the concentration in the BAT. If he does, provide the following **Cue:** The results of the last boron sample were 1100 ppm for the RCS and 6850 ppm in the BATs.

**Comments:**

**STEP** 4 X **Performance Step:** Refer to Attachment 7, "Blended Flow Based on 80 gpm Makeup", OR using the equation; boric acid flow =[RCS $C_b$ ÷ In service BAT $C_b$ ] x 80 gpm and DETERMINE boric acid flow for current RCS boron concentration.

**GRADE** ____ ____ **Standards:** Using either Attachment 7 or equation, determines that the correct flow rate is approximately 12.85 gpm.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** If the examinee used the equation, Ask the examinee to verify their calculation using the table in 3304C

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**Comments:**

| | | | | |
|---|---|---|---|---|
| **STEP** | 5 | X | **Performance Step:** | SET 3CHS-FK110, "BORIC ACID BLEND FLOW CONT" (MB3), to provide the flow rate determined in *the previous step.* |
| **GRADE** | | | **Standards:** | As indicated in Attachment 7 or known, 0-10 turns equates to 0-40 gpm on 3CHS-FK110. Sets the potentiometer for 3 CHS-FK110 to a value of approximately 3.22 turns |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | The pot was intentionally set at 4.0 in the set-up. This will require the examinee to adjust the potentiometer. |
| **STEP** | 6 | | **Performance Step:** | At 3CHS-FY110B, boric acid batch counter (MB3), PERFORM the following: PRESS "RESET" and HOLD. |
| **GRADE** | | | **Standards:** | Presses and holds the "Reset" pushbutton |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | |
| | | | **Comments:** | |
| **STEP** | 7 | | **Performance Step:** | OPEN cover. |

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**GRADE** ____ ____ **Standards:** Lifts the cover up to the open position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 8 X **Performance Step:** Using thumbwheels, SET counter to at least "900000"

**GRADE** ____ ____ **Standards:** Rotates the thumbwheels until the counter reads at least "900000".

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 9 ____ **Performance Step:** CLOSE cover.

**GRADE** ____ ____ **Standards:** Lowers the cover to the closed position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 10 ____ **Performance Step:** RELEASE "RESET".

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**GRADE** ____ ____ **Standards:** Releases the "reset" pushbutton.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 11 ____ **Performance Step:** At 3 CHS-FY111B, primary water batch counter (MB3), PERFORM the following: PRESS "RESET" and HOLD

**GRADE** ____ ____ **Standards:** Presses and holds the "Reset" pushbutton

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 12 ____ **Performance Step:** Opens cover

**GRADE** ____ ____ **Standards:** Lifts the cover to the open position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 13 X **Performance Step:** Using thumbwheels, SET counter to at least "900000".

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**GRADE** ____ ____ **Standards:** Rotates the thumbwheels until the counter reads at least "900000".

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 14 ____ **Performance Step:** Close cover

**GRADE** ____ ____ **Standards:** Lowers the cover to the closed position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 15 ____ **Performance Step:** RELEASE Reset

**GRADE** ____ ____ **Standards:** releases the "reset" pushbutton

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 16 X **Performance Step:** OPEN 3CHS*FCV110B, "MAKE-UP TO CHG" (MB3)

**GRADE** ____ ____ **Standards:** Places the control switch for FCV110B on

MB3 apron to the Open position and verfies red light on and green light off.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 17 X **Performance Step:** To commence makeup to the VCT, PLACE "REAC CLNT MAKEUP START SW" (MB3), in "Start".

**GRADE** ____ ____ **Standards:** Presses the "Start" pushbutton on the "REAC CLNT MAKEUP START SW" and observes that the stop light goes out and the Start pushbutton illuminates.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:** Simulator modification to automatically reset the counters is not installed. If necessary, inform the examinee of this fact and he will be unable to successfully complete the following step.

**STEP** 18 ____ **Performance Step:** VERIFY the following counters reset to "000000"

- 3CHS-FY110B, "Boric Acid" "Batch" counter
- 3CHS-FY111B, "PRI WTR" "Batch" counter.

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**GRADE** ____ ____ **Standards:** Observes the counters read "000000".

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 19 ____ **Performance Step:** MONITOR reactor power and Tave during manual makeup.

**GRADE** ____ ____ **Standards:** Periodically checks reactor power and Tave during the makeup.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 20 ____ **Performance Step:** VERIFY proper flows on indicating recorder 3CHS-FR110, "MAKEUP TO VCT" (MB3).

**GRADE** ____ ____ **Standards:** Checks recorder 3CHS-FR110 and observes proper indications.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 21 X **Performance Step:** WHEN desired, PLACE "REAC CLNT

MAKEUP START SW" (MB3), in "STOP".

**GRADE** ____ **X** **Standards:** When the VCT level is at ~50%, depresses the "Stop" pushbutton on the "REAC CLNT MAKEUP START SW"

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:** The exact VCT level is not critical to the successful completion of this step. The ability to stop the make-up is.

**STEP** 22 **X** **Performance Step:** PLACE 3CHS*FCV110B, "MAKE-UP TO CHG" (MB3), in "AUTO".

**GRADE** ____ ____ **Standards:** Places the control switch for FCV*110B to the Close/auto position and verifies the red light off and the green light lit.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 23 ____ **Performance Step:** VERIFY 3CHS*FCV110B, closed.

**GRADE** ____ ____ **Standards:** Checks the "close" light is lit and that no flow exists in the makeup system.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**Comments:**

**STEP** 24 ____ **Performance Step:** At 3CHS-FY110B, boric acid batch counter (MB3), PERFORM the following: PRESS "RESET" and HOLD.

**GRADE** ____ ____ **Standards:** Presses and holds the "Reset" pushbutton

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 25 ____ **Performance Step:** OPEN Cover

**GRADE** ____ ____ **Standards:** Lifts the cover to the open position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 26 X **Performance Step:** Using thumbwheels, SET counter to "000000"

**GRADE** ____ ____ **Standards:** Rotates the thumbwheels until the counter reads "000000".

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**Cue:**

**Comments:**

**STEP** 27 ____ **Performance Step:** Closes cover

**GRADE** ____ ____ **Standards:** Lowers the cover to the closed position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 28 ____ **Performance Step:** Release Reset

**GRADE** ____ ____ **Standards:** Release the reset pushbutton

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 29 ____ **Performance Step:** At 3 CHS-FY111B, primary water batch counter (MB3), PERFORM the following: PRESS "RESET" and HOLD

**GRADE** ____ ____ **Standards:** Presses and holds the "Reset" pushbutton

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 30 ____ **Performance Step:** OPEN cover.

**GRADE** ____ ____ **Standards:** Lifts the cover up to the open position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 31 X **Performance Step:** Using thumbwheels, SET counter to "000000".

**GRADE** ____ ____ **Standards:** Rotates the thumbwheels until the counter reads "000000".

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**STEP** 32 ____ **Performance Step:** CLOSE cover.

**GRADE** ____ ____ **Standards:** Lowers the cover to the closed position

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

# PERFORMANCE INFORMATION

JPM Number: 141-1 Revision: 0

Task Title: ADMIN- Use Table to determine CVCS Make-up Pot Settings & Perform a Manual Make up to the VCT

**STEP** 33 ____ **Performance Step:** RELEASE "RESET"

**GRADE** ____ ____ **Standards:** Releases the "reset" pushbutton.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:** Inform the examinee that it is not necessary to realign for auto makeup at this time

**STEP** 34 ____ **Performance Step:** Notify the US that the makeup system has been align for manual makeup.

**GRADE** ____ ____ **Standards:** Informs the US that the makeup system has been align for manual makeup using OP 3304C and the VCT level has been restored to the 40-50% band.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:**

**Comments:**

**THE EVALUATION PORTION OF THIS JPM IS COMPLETE.**

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 141-1 Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 10

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

**JPM Number:** 141-1

**Initial Conditions:**

**Plant is at 100% Power,**

**Middle of Life conditions, 10,000 MWD/MTU**

**RCS Boron concentration is 1100 ppm**

**Boric Acid Storage Tank concentrations are:**

**BAST "A" concentration:6850 ppm**

**BAST "B" concentration:6850 ppm**

**The crew is preparing to perform the daily leak check calculation.**

**Initiating Cues:**

**The Unit Supervisor has requested that you calculate a blended flow make up using the tables in OP3304C and PERFORM a Manual Make-up to the VCT to raise level to 50%. Leave VCT make up control in Manual upon completion.**

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

JPM ID Number: 015A

Revision: 4
change 1
3/30/00

II. Initiated:

G. A. Tait — Developer — 8/10/99 — Date

J. William Côté — Developer for change 1 — 3/30/00 — Date

III. Reviewed:

Martin — Technical Reviewer — 3/31/00 — Date

IV. Approved:

N/A — Cognizant Plant Supervisor (optional) — Date

Nuclear Training Supervisor — 4/4/00 — Date

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

Summary of Changes

1. NRC requested that all steps associated with the "B" EDG be removed. Removed steps associated with ensuring "B" EDG will not start.

J. William Côté Date: 3/30/00
developer

Martin Date: 3/31/00
concurrence

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 015A Revision: 4
change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

System: E09

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 20

Task Number(s): 000-05-008, 344-05-064, & 344-05-087

Applicable To: SRO X RO X PEO X

K/A Number: APE-068-AA1.10, EPE-055-EA2.06 K/A Rating: 3.7/3.9, 3.7/4.1

Method of Testing: Simulated Performance: X Actual Performance: _____

Location: Classroom: _____ Simulator: _____ In-Plant:: X

Task Standards: Satisfactorily complete the Secondary Side PEO actions on a Control Room Evacuation IAW EOP 3509.1, Attachment B.

Required Materials: EDG Control Mode selector switch keys 12B554 and ILCO 999NY1E.

General References: EOP 3509.1, Attachment B, Rev. 3

*****READ TO THE STUDENT*****

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

JPM Number: 015A

Revision: 4
change 1

Initial Conditions: The plant has experienced a loss of Off-Site power and a fire requiring evacuation of the control room. Bus 34C is de-energized.

Initiating Cues: The US, at the ASP, has directed you to perform the Secondary Side PEO Actions on a Control Room Evacuation in accordance with EOP 3509.1, Attachment B. The Turbine Stop Valves have been verified Closed. You have a PEO Rounds Key and keys EDG Control Mode selector switch keys 12B554 & ILCO 999NY1E.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

Start Time: _____

**Comments:** The examinee may decide to obtain a 800 MHz portable radio when in route to the 'A' EDG enclosure. If this action is performed, provide the following cue when the radio storage location is reached. The obtaining of the radio is not required until performance of step 4 of EOP 3509.1. **Performance steps, standards, and cues pertaining to the 800 MHz radios are provided in step 8 (page 9) of this JPM.**

**Comments:** Based upon the initial cues, the examinee may directly proceed to step 3 of EOP 3509.1. If the examinee does proceed directly to step 3 (page 6), steps 1 and 2 of this JPM should be skipped as they are only included for clarification purposes. Step 1 of this JPM starts on the next page.

**STEP** 1 ____ **Performance Step:** Verify Turbine Stop Valves - CLOSED (step 1)

**GRADE** ____ ____ **Standards:** Proceeds to step 2 as step 1 completion already performed

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Turbine Stop Valves have already been verified closed.

**Comments:** Completion of the step stated in initiating cues. If required, provide the above cue to remind examinee of step completion.

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

**STEP** 2 ____ **Performance Step:** Obtain Keys From The SM

- EDG A CONTROL MODE selector switch key (12B554)
- EDGB CONTROL MODE selector switch key (ILCO 999NY1E)

(step 2)

**GRADE** ____ ____ **Standards:** Proceeds to step 3 as step 1 completion already performed

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** You have the 'A' and 'B' Control Mode selector switch keys

**Comments:** Initiating cue stated that examinee had obtained keys. If required, provide the above cue as a reminder.

**STEP** 3 X **Performance Step:** Check Diesel Generator A Status

a. Using key 12B554 from SM key ring, Unlock and Place the CONTROL MODE selector switch in LOCAL.

(step 3.a)

**GRADE** ____ X **Standards:** Locate CONTROL MODE selector switch and simulates inserting key into switch.

**Cue:** Key 12B554 is inserted.

**GRADE** ____ X **Standards:** Simulates rotating the control mode selector switch to the LOCAL position.

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

| | | | | |
|---|---|---|---|---|
| | | | **Cue:** | Control Mode selector switch is in LOCAL. Alarm window 4-8 on EGPA blinks and an audible alarm is heard. |
| **GRADE** | ____ | ____ | **Standards:** | Simulates silencing and acknowledging alarm. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | Audible alarm stops. Alarm window 4-8 on EGPA is lit and solid. |
| **STEP** | 4 | X | **Performance Step:** | Unlock and Place transfer switch 43FT1 in ISOLATE. (step 3.b) |
| **GRADE** | ____ | X | **Standards:** | Locates transfer switch 43FT1 and simulates inserting PEO Rounds key into lock, unlocking lock, and swinging the switch cover up. |
| | | | **Cue:** | The cover for transfer switch 43FT1 is unlocked and swung up. |
| **GRADE** | ____ | X | **Standards:** | Simulates rotating transfer switch 43FT1 to the ISOLATE position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | Switch 43FT1 handle is aligned to the ISOLATE position and the cover is lowered. |

**STEP** 5 X **Performance Step:** Unlock and Place transfer switch 43FT in ISOLATE.

(step 3.c)

**GRADE** ___ X **Standards:** Locates transfer switch 43FT and simulates inserting PEO Rounds key into lock, unlocking lock, and swinging the switch cover up.

**Cue:** The cover for transfer switch 43FT is unlocked and swung up.

**GRADE** ___ X **Standards:** Simulates rotating transfer switch 43FT to the ISOLATE position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Switch 43FT handle is aligned to the ISOLATE position and the cover is lowered.

**STEP** 6 X **Performance Step:** Verify EDG A - RUNNING.

**GRADE** ___ X **Standards:** Proceeds to step 3.d RNO.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** There is NO noise emitting from the 'A' Diesel.

**STEP** 7 X **Performance Step:** Proceed to step 4.

(step 3.d.RNO)

**GRADE** ___ X **Standards:** Proceeds to step 4.

**Grade:** **SAT** _____ **UNSAT** _____

| | | | | |
|---|---|---|---|---|
| | | | **Comments:** | If the examinee obtained the 800 MHz radio at the beginning of the JPM, the following JPM step may have already been partially or fully completed. |
| **STEP** | 8 | X | **Performance Step:** | NOTE<br>The sound powered phone connection to the A Diesel Generator Room may be damaged by the fire. Use the 800 MHz portable radios in the direct (talk-around) mode to communicate with the ASP operator.<br>(step 4 note) |
| **GRADE** | ____ | ____ | **Standards:** | Reviews note. |
| | | | **Comments:** | Additional standards associated with this step are located on the next page. |
| **GRADE** | ____ | X | **Standards:** | Locates 800 MHz radio (Lockers by HP Office or Operations Human Resource Center), simulates placing it in the "talk-around" (Channel 5) mode and taking one to 'A' EDG building. |
| | | | **Cue:** | **Upon locating the radio storage area, provide the following cue:**<br>**The radio is in the "talk-around" mode. You are to replace the radio in its storage location and simulate having the radio in your possession.** |
| **GRADE** | ____ | X | **Standards:** | Simulates connecting the 800 MHz radio to the fixed antenna inside the 'A' EDG building. |

| | | | | |
|---|---|---|---|---|
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | The radio is connected to the fixed antenna. |
| **STEP** | 9 | ____ | **Performance Step:** | Check If Diesel Generator A Should Be Started From Local Control Panel (3EGS*PNLA)<br>Verify ASP operator desires EDG A - STARTED<br>(step 4.a) |
| **GRADE** | ____ | ____ | **Standards:** | Simulates establishing communications, using the 800 MHz radio, with the ASP operator to determine if starting of 'A' EDG local start desired. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | **SIMULATE** starting the 'A" EDG locally. |
| | | | **Comments:** | If examinee attempts to utilize any communication device other than the 800 Mhz radio, the following cue should be provided: |
| | | | **Cue:** | The *xxx* is not functional. |
| **STEP** | 10 | X | **Performance Step:** | Open EDG A service water outlet valve (3SWP*AOV39A) by venting (3SWP*HV39A).<br>(step 4.b) |
| **GRADE** | ____ | X | **Standards:** | Locates 3SWP*HV39A (next to flow |

indicator) and simulates rotating the handle to the "vent" position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The valve position indicator points to "VENT". You hear loud hissing noise from the pipe next to the vent handle. Noise gets quieter and eventually stops.

**Comments:** If examinee checks flow indicator 3SWP-FIS41A again, provide the following cue:

**Cue:** Service water flow is 0 gpm

**Comments:** If examinee climbs up the platform to valve 3SWP*AOV39A to check the local indicator, provide the following cue:

**Cue:** The pointer points to "OPEN"

**STEP** 11 X **Performance Step:** Place the UNIT/PARALLEL switch in UNIT

(step 4.c)

**GRADE** ____ X **Standards:** Locates the Unit/Parallel switch (EDG control panel) and simulates rotating the switch to the UNIT position if necessary.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Switch handles pointer is aligned to the UNIT position.

| | | | | |
|---|---|---|---|---|
| **STEP** | 12 | X | **Performance Step:** | Place the control mode selector switch in LOCAL.<br>(step 4.d) |
| **GRADE** | | X | **Standards:** | Locates the control mode selector switch and verifies the switch still in the LOCAL position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | Control mode selector switch is in LOCAL. |
| | | | **Comments:** | Control mode selector switch was placed in LOCAL during performance of EOP 3509.1 step 3.a. |
| **STEP** | 13 | X | **Performance Step:** | Press ENGINE SHUTDOWN RESET pushbutton.<br>(step 4.e) |
| **GRADE** | | X | **Standards:** | Locates the Engine Shutdown Reset pushbutton (EGPA) and simulates pressing it to reset the engine shutdown. |
| | | | **Cue:** | The Engine Shutdown Reset pushbutton has been pressed. Alarm window 1-1 on EGPA blinks and an audible alarm is heard. |
| **GRADE** | | | **Standards:** | Simulates silencing and resetting the alarm. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | Audible alarm stops and alarm window 1-1 clears (not lit). |

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

| | | | | |
|---|---|---|---|---|
| **STEP** | 14 | X | **Performance Step:** | Place the ENGINE CONTROL switch in START.<br>(step 4.f) |
| **GRADE** | | X | **Standards:** | Locates the Engine Control switch (EGPA) and simulates rotating it to the Start position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | The Engine Control switch is in the Start position. No engine noise is heard (the engine did not start) |
| **STEP** | 15 | X | **Performance Step:** | Verify emergency diesel generator A - STARTS.<br>(step 4.g) |
| **GRADE** | | X | **Standards:** | Locates EDG speed (tachometer) indicator and verifies engine speed, then proceeds to step 4.g RNO. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | Diesel speed is 0 rpm. |
| **STEP** | 16 | X | **Performance Step:** | PRESS the lever on either air start control valve (3EGS*ASV1A or 3EGS*ASV2A).<br>(step 4.g RNO) |
| **GRADE** | | X | **Standards:** | Locates either air start control valve and using the attached lever, locks the lever around the pivot pin and pushes down on the valve. |
| | | | **Cue:** | Engine noise is heard and it increases to a steady noise level. |

**Cue:** **When examinee returns to EGPA, inform him that alarm windows 2-1 and 3-7 are blinking and an audible alarm noise is heard.**

**GRADE** ____ X **Standards:** Silences, acknowledges and resets the alarms.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** **Audible alarm stops. Alarm window 3-7 clears (not lit) and window 2-1 is lit solid.**

**Comments:** If examinee checks diesel speed provide the following cue.

**Cue:** **Engine speed is 510 rpm.**

**STEP** 17 ____ **Performance Step:** Adjust the AUTO VOLTAGE CONTROL switch to maintain generator voltage - BETWEEN 3740 and 4580 volts.

(step 4.h)

**GRADE** ____ ____ **Standards:** Locates generator voltage meter (EGPA) and reads voltage.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** **Generator voltage is 4150 volts.**

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

**STEP** 18 ____ **Performance Step:** Adjust the GOVERNOR CONTROL switch to maintain generator frequency - BETWEEN 59.2 and 60.8 Hz.

(step 4.i)

**GRADE** ____ ____ **Standards:** Locates generator frequency meter (EGPA) and reads frequency.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Generator frequency is 60.0 Hz.

**STEP** 19 X **Performance Step:** Place the GENERATOR BREAKER L/R switch in LOCAL.

(step 4.j)

**GRADE** ____ X **Standards:** Locates the Generator Breaker Local/Remote switch and simulates placing it in the Local position

**Cue:** Switch handle pointer is aligned to the LOCAL position. Alarm window 4-6 on EGPA blinks and an audible alarm is heard.

**GRADE** ____ ____ **Standards:** Simulates silencing and acknowledging the alarm.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Audible alarm stops and alarm window 4-6 on EGPA is solid and lit.

**STEP** 20 X **Performance Step:** Place the SYNCHRONIZING SWITCH to ON.

(step 4.k)

**GRADE** ____ X **Standards:** Locates the synchronizing switch (EGPA) and simulates rotating it to the ON position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Synchronizing switch is aligned to "ON."

**STEP** 21 X **Performance Step:** Verify ASP operator desires the generator circuit breaker - CLOSED.

(step 4.l)

**GRADE** ____ X **Standards:** Simulates establishing communication with ASP to verify generator circuit breaker to be closed.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** **SIMULATE** closing the Generator Circuit Breaker from EGPA.

**Comments:** Ensure the examinee understands they are to simulate the closing of the circuit breaker.

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

**STEP** 22 X **Performance Step:** Place the GENERATOR CIRCUIT BRKR control switch in CLOSE.

(step 4.m)

**GRADE** ____ X **Standards:** Locates the generator circuit breaker control switch and simulates placing it in the Close position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The breaker control switch handle is aligned with the CLOSE position

**Cue:** The breaker position indicating lights shift to Red ON and Green OFF. The bus voltmeter indicates 4150 volts

**STEP** 23 ____ **Performance Step:** Place the SYNCHRONIZING SWITCH to OFF.

(step 4.n)

**GRADE** ____ ____ **Standards:** Simulates rotating the synchronizing switch (EGPA) to the OFF position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Synchronizing switch is in the OFF position.

# PERFORMANCE INFORMATION

JPM Number: 015A Revision: 4 change 1

Task Title: Secondary Side PEO Actions on a Control Room Evacuation due to a Fire

| | | | | |
|---|---|---|---|---|
| **STEP** | 24 | X | **Performance Step:** | Fail Open diesel generator enclosure air supply dampers.<br>• Place circuit breaker 6 on 3SCV*PNL25(O) to OFF<br>(step 4.o) |
| **GRADE** | ____ | X | **Standards:** | Locates circuit breaker 6 on panel SCV*PNL25(O) and simulates placing it to the OFF position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Cue:** | **Breaker 6 is in the OFF position.** |
| **STEP** | 25 | ____ | **Performance Step:** | Report to ASP operator - EDG A READY TO LOAD.<br>(step 4.p) |
| **GRADE** | ____ | ____ | **Standards:** | Simulates establishing communications with the ASP operator and reports that the 'A' EDG is ready to load. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**Terminating Cue:** The evaluation for this JPM is concluded.

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 015A Revision: 4
change 1

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 20

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# STUDENT HANDOUT

**JPM Number:** 015A

**Initial Conditions:** The plant has experienced a loss of Off-Site power and a fire requiring evacuation of the control room. Bus 34C is de-energized.

**Initiating Cues:** The US, at the ASP, has directed you to perform the Secondary Side PEO Actions on a Control Room Evacuation in accordance with EOP 3509.1, Attachment B. The Turbine Stop Valves have been verified Closed. You have a PEO Rounds Key and keys EDG Control Mode selector switch keys 12B554 & ILCO 999NY1E

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

JPM ID Number: 091-1 Revision: 0

II. Initiated:

J. William Côté 2/10/00
Developer Date

III. Reviewed:

Martin 2/27/00
Technical Reviewer Date

IV. Approved:

Cognizant Plant Supervisor (optional) Date

Nuclear Training Supervisor 2/27/00
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

System: IAS

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 12

Task Number(s): 344-05-017 and 344-05-022

Applicable To: SRO X RO X PEO X

K/A Number: 065-AA1.04 K/A Rating: 3.5/3.4

Method of Testing: Simulated Performance: X Actual Performance: _____

Location: Classroom: _____ Simulator: _____ In-Plant:: X

Task Standards: Satisfactorily perform the local actions on a loss of instrument air as specified in OP3562, Loss of Instrument Air, Attachment A.

Required Materials: None

General References: AOP 3562, Loss of Instrument Air, & OP3332A

*****READ TO THE STUDENT*****

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

# JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 091-1-1 Revision: 0

Simulator Requirements: None: In-plant JPM

Initial Conditions: A loss of instrument air has occurred and the Control Room Team is carrying out the actions of AOP 3562. Steps 1 and 2a are complete, but instrument air pressure continues to decrease. Actions in accordance with the "Response Not Obtained" column are required.

Initiating Cues: The US had directed you to locally start air compressors and perform filter and dryer checks using Attachment A of AOP 3562, Loss of Instrument Air.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

Start Time: _____

**STEP** 1 ____ **Performance Step:** Place both instrument air compressor control switches to CS (continuous service). (Attach A - Step 1.a)

**Comments:** AOP 3562 step 2a RNO has an operator locally place <u>both</u> instrument air compressor control switches to CS (continuous service).

**GRADE** ____ ____ **Standards:** Locates the control switch for 3IAS-C1A (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position.

**Cue:** The control switch is already in the CS position.

**GRADE** ____ ____ **Standards:** Locates the control switch for 3IAS-C1B (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position.

**Cue:** The control switch is already in the CS position.

**Comments:** The instrument air compressor switches addressed in this step may be operated in any order.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | **2** | | **Performance Step:** | Place the service air compressor control switch to CS (continuous service). (Step 1.b) |
| **GRADE** | | | **Standards:** | Locates the control switch for 3SAS-C1 (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position. |
| | | | **Cue:** | The control switch is already in the CS position. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | **3** | **X** | **Performance Step:** | CLOSE service air header supply valve (3SAS-AOV33). (Step 1.c) |
| **GRADE** | | | **Standards:** | Locates valve 3SAS-AOV33 control switch (on IAS Panel) and checks valve position indicating lights. |
| | | | **Cue:** | The green light is dark and the red light is illuminated. |
| **GRADE** | | **X** | **Standards:** | Closes valve by positioning switch to the "CLOSE" position. |
| | | | **Cue:** | The green light illuminates and the red light goes dark. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | **4** | **X** | **Performance Step:** | OPEN service air to instrument air cross-connect valve (3IAS-AOV14). (Step 1.d) |
| **GRADE** | ____ | ____ | **Standards:** | Locates valve 3IAS-AOV14 control switch (on IAS Panel) and checks valve position indicating lights. |
| | | | **Cue:** | The green light is illuminated and the red light is dark. |
| **GRADE** | ____ | **X** | **Standards:** | Opens valve by positioning switch to the "OPEN" position. |
| | | | **Cue:** | The green light goes dark and the red light illuminates. |
| | | | **Grade:** | **SAT** ____ **UNSAT** ____ |

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

**STEP** 5 ____ **Performance Step:** Verify the following Instrument Air Dryer Annunciators - NOT LIT (Step 2)

- AIR DRYER REACTIVATION BLOWER (IS3-2)
- AIR DRYER HEATER TEMP HI (IS3-3)
- AIR DRYER DISCHARGE MOIST HI (IS3-4)
- ALARM BLOWER FAILURE (Dryer Skid, 3IAS-PNLCP1)

**Comments:** The examinee may verify the alarm status in any order.

**GRADE** ____ ____ **Standards:** Locates panel IS (Turbine Building 14' elev. SW corner facing west wall) and verifies the alarms are not in (alarm windows dark).

**Cue:** Alarm widows 3-2, 3-3 and 3-4 are dark.

**Comments:** The examinee may elect to perform an alarm panel lamp test, if so provide the following cue:

**Cue:** The lamp test is satisfactory, all lamps illuminated as expected.

**GRADE** ____ ____ **Standards:** Locates panel CP1 (behind air dryer) and verifies the alarms are not in (alarm windows dark).

**Cue:** Alarm widow "ALARM BLOWER FAILURE" is dark.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | 6 | X | **Performance Step:** | Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid. (Step 3) |
| **GRADE** | | | **Standards:** | Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading. |
| | | | **Cue:** | The gauge indicates pegged high. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 7 | X | **Performance Step:** | Implements the RNO and obtains OP3332A, Instrument Air System, in order to swap filters |
| **GRADE** | | | **Standards:** | Implements the RNO and obtains OP3332A, Instrument Air System, in order to swap filters |
| | | | **Cue:** | Provide examinee with OP3332A |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | 8 | | **Performance Step:** | Find section relating to filter swap and decide to place filter in service |
| **GRADE** | | | **Standards:** | Opens 3332A to section 4.6, alternating In-service air filters. |
| | | | **Cue:** | Inform the examinee that filter 2A is in service and to PLACE filter 2B in service |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | **9** | **X** | **Performance Step:** | Throttle open 3IAS-V18, filter 2B inlet isolation, until the filter pressure equalizes with the instrument air header, then fully open 3IAS-V18 |
| **GRADE** | ____ | ____ | **Standards:** | slowly throttles open on V18 until air equalizes |
| | | | **Cue:** | Slight air noise is heard and slowly fades away |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | ____ | **X** | **Performance Step:** | Opens V18 |
| **GRADE** | ____ | ____ | **Standards:** | rotates V18 in the counterclockwise direction until fully open |
| | | | **Cue:** | Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

| | | | | |
|---|---|---|---|---|
| **STEP** | ____ | ____ | **Performance Step:** | Rotates closed 1/4 turn from full open |
| **GRADE** | ____ | ____ | **Standards:** | rotates the handwheel in the clockwise direction 1/4 of 1 turn |
| | | | **Cue:** | Handwheel has been rotated 1/4 turn in the clockwise direction |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | **10** | **X** | **Performance Step:** | Opens V19, filter 2B outlet |
| **GRADE** | ____ | ____ | **Standards:** | rotates V19 in the counterclockwise direction until fully open |
| | | | **Cue:** | Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | ____ | ____ | **Performance Step:** | Rotates closed 1/4 turn from full open |
| **GRADE** | ____ | ____ | **Standards:** | Rotates the handwheel in the clockwise direction 1/4 of 1 turn |
| | | | **Cue:** | Handwheel has been rotated 1/4 turn in the clockwise direction. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **11** | **X** | **Performance Step:** | Close 3IAS-V21, filter 2A outlet isolation |
| **GRADE** | ____ | ____ | **Standards:** | Rotates V-21 in the clockwise direction until fully closed |
| | | | **Cue:** | Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

# PERFORMANCE INFORMATION

JPM Number: 091-1-1 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

| | | | | |
|---|---|---|---|---|
| **STEP** | **12** | **X** | **Performance Step:** | Close 3IAS-V20, filter 2A inlet isolation |
| **GRADE** | ____ | ____ | **Standards:** | Rotates V-20 in the clockwise direction until fully closed |
| | | | **Cue:** | Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **13** | ____ | **Performance Step:** | Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid. |
| **GRADE** | ____ | ____ | **Standards:** | Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading. |
| | | | **Cue:** | Filter DP reads .25 psid |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| **STEP** | **7** | ____ | **Performance Step:** | Notify the Control Room that Attachment A of AOP 3562 is complete. |
| **GRADE** | ____ | ____ | **Standards:** | Examinee reports to the US that instrument and service air compressor are running and supplying the instrument air header and that the filter and dryer checks are complete as specified in AOP 3562, Attachment A. The 2A filter had a high DP and filter 2B was placed in service. |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |

**Terminating Cue:** The evaluation for this JPM is concluded.

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 091-1-1 Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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): 12

Actual Time to Complete (minutes): _____

Result of JPM: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

**JPM Number:** 091-1-1

**Initial Conditions:** A loss of instrument air has occurred and the Control Room Team is carrying out the actions of AOP 3562. Steps 1 and 2a are complete, but instrument air pressure continues to decrease. Actions in accordance with the "Response Not Obtained" column are required.

**Initiating Cues:** The US had directed you to locally start air compressors and perform filter and dryer checks using Attachment A of AOP 3562, Loss of Instrument Air.

# JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: LOCAL CONTAINMENT ISOLATION PHASE B

ID Number: JPM-083 Revision: 2

II. Initiated:

A. Oxfurth
Developer

1/07/97
Date

III. Reviewed:

Technical Reviewer

2/27/00
Date

R. L. Lueneburg
Instructional Reviewer

Date

IV. Approved:

Operations Manager

Date

Nuclear Training Supervisor

2/27/00
Date

# JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3 Examinee: _____

JPM Tracking Number: 083 Validation Time: 12 minutes

Task Title: LOCAL CONTAINMENT ISOLATION PHASE B

Time Critical Task: ( ) YES (X) NO

Task Number: 000*027*05*01

K/A Number: 103-000-A2.03 K/A Rating: 3.5 / 3.8

Applicable Methods of Testing:

Simulate Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

Task Standards: Satisfactorily conduct local containment phase B isolation IAW EOP 35 ECA-0.0.

Required Materials: None.

General References: EOP 35 ECA-0.0 Rev.12

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 objectives for this JPM will be satisfied. You may use any approved reference materials normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed.

Initial Conditions: The plant has had a loss of all AC followed by a CDA due to a steam line rupture in containment. Containment pressure is 27 psia. The Control Room team is carrying out the actions of EOP 35 ECA-0.0. A CDA signal is actuated. RPCCW containment outer supply and return header isolation valves are not closed.

Initiating Cues: The US has directed you to locally complete a Phase B Containment Isolation using EOP 35 ECA-0.0 Step 21.b under the "Response Not Obtained" column and locally close the valves listed.

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: CCP

JPM Number: 083

Task Title: LOCAL CONTAINMENT ISOLATION PHASE B

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

| | | | | |
|---|---|---|---|---|
| | | | **Comments:** | The examinee can perform Steps 1 - 4 in any order. |
| **STEP** | 1 | X | **Performance Step:** | Close valve 3CCP*MOV49A. |
| **GRADE** | ____ | X | **Standards:** | Locates valve 3CCP*MOV49A (Train A RPCCW containment outer return isolation, Auxiliary Bldg. El. 4') and disengages the clutch by positioning the lever to the disengaged position. |
| | | | **Cue:** | The clutch is disengaged. |
| **GRADE** | ____ | X | **Standards:** | Rotates the valve handwheel in the clockwise direction until the valve is fully closed. |
| | | | **Cue:** | The valve handwheel rotates in the clockwise direction. Eventually, some resistance is met and the handwheel comes to a hard stop. The position indicator points to the "close" position. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: CCP

JPM Number: 083

Task Title: LOCAL CONTAINMENT ISOLATION PHASE B

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| **STEP** | 2 | X | **Performance Step:** | Close valve 3CCP*MOV49B. |
| **GRADE** | ____ | X | **Standards:** | Locates valve 3CCP*MOV49B (Train B RPCCW containment outer return isolation; Auxiliary Bldg. El. 4') and disengages the clutch by positioning the lever to the disengaged position. |
| | | | **Cue:** | The clutch is disengaged. |
| **GRADE** | ____ | X | **Standards:** | Rotates the valve handwheel in the clockwise direction until the valve is fully closed. |
| | | | **Cue:** | The valve handwheel rotates in the clockwise direction. Eventually, some resistance is met and the handwheel comes to a hard stop. The position indicator points to the "close" position. |
| **STEP** | 3 | X | **Performance Step:** | Close valve 3CCP*MOV45A. |
| **GRADE** | ____ | X | **Standards:** | Locates valve 3CCP*MOV45A (Train A RPCCW containment supply header isolation, Auxiliary Bldg. 4') and disengages the clutch by positioning the lever to the disengaged position. |
| | | | **Cue:** | The clutch is disengaged. |
| **GRADE** | ____ | X | **Standards:** | Rotates the valve handwheel in the clockwise direction until the valve is fully closed. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: CCP

JPM Number: 083

Task Title: LOCAL CONTAINMENT ISOLATION PHASE B

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

| | | | | |
|---|---|---|---|---|
| | | | **Cue:** | The valve handwheel rotates in the clockwise direction. Eventually, some resistance is met and the handwheel comes to a hard stop. The position indicator points to the "close" position. |
| **STEP** | 4 | X | **Performance Step:** | Close valve 3CCP*MOV45B. |
| **GRADE** | ____ | X | **Standards:** | Locates valve 3CCP*MOV45B (Train B RPCCW containment supply header isolation, Auxiliary Bldg. El. 4') and disengages the clutch by positioning the lever to the disengaged position. |
| | | | **Cue:** | The clutch is disengaged. |
| **GRADE** | ____ | X | **Standards:** | Rotates the valve handwheel in the clockwise direction until the valve is fully closed. |
| | | | **Cue:** | The valve handwheel rotates in the clockwise direction. Eventually, some resistance is met and the handwheel comes to a hard stop. The position indicator points to the "close" position. |
| | | | **Comments:** | Inform examinee that a Control Room Operator will reset the CDA as required by the next step in the procedure. |
| **STEP** | 5 | ____ | **Performance Step:** | Notify the Control Room that a Phase B containment isolation has been completed. |

# PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: CCP

JPM Number: 083

Task Title: LOCAL CONTAINMENT ISOLATION PHASE B

Denote Critical Steps with an "X"
*NOTE* Critical Steps must be completed correctly to achieve a satisfactory grade

**GRADE** ____ ____ **Standards:** Examinee reports to the US that a local Phase B containment isolation has been completed and that the valves listed in step 21.b RNO of ECA-0.0 have been closed locally.

**Terminating Cue:** The evaluation for this JPM is concluded.

Stop Time: _____

# VERIFICATION OF COMPLETION

Job Performance Measure Number: 083 Revision: 2

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min): 12 Actual time to Complete (min): _____

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

Result of oral questions: Number of Questions: _____

Number of Correct Responses: _____

Score _____ %

# EXAMINEE HANDOUT

## INITIAL CONDITIONS AND INITIATING CUES

**JPM Tracking Number:** 083

**Initial Conditions:** The plant has had a loss of all AC followed by a CDA due to a steam line rupture in containment. Containment pressure is 27 psia. The Control Room team is carrying out the actions of EOP 35 ECA-0.0. A CDA signal is actuated. RPCCW containment outer supply and return header isolation valves are not closed.

**Initiating Cues:** The US has directed you to locally complete a Phase B Containment Isolation using EOP 35 ECA-0.0 Step 21.b under the "Response Not Obtained" column and locally close the valves listed.

# Job Performance Measure Guide

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: ALIGN CHARGING PUMP "C" (3CHS*P3C) TO TRAIN "A" - MECHANICALLY

JPM ID Number: 065 Revision: 8

II. Initiated:

G. Tait
Developer

2/8/99
Date

III. Reviewed:

Martin
Technical Reviewer

2/27/00
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

2/27/00
Date

## Job Performance Measure Guide

Facility: MP3 CANDIDATE: _____

JPM ID Number: 065 Validated time: 10 minutes

Task Title: Align Charging Pump "C" (3CHS*P3C) To Train "A" - Mechanically

Time Critical Task: ( ) YES (X) NO

Task Number: : 004-01-072
344-05-095
004-01-010

K/A Number: 062.A2.11 K/A Rating: 3.7/4.1

Method of Testing:

Simulate performance X Actual performance _____

Classroom _____ Simulator _____ Plant X

Task Standards:

Satisfactorily align charging pump "C" (3CHS*P3C) mechanically to Train "A" per OP 3304A, Step 4.5.4.b.1) through 6).

Required Materials:

PEO Rounds Key

General References: OP 3304A (rev 27), Charging and Letdown

* READ TO THE CANDIDATE *

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 JPM will be satisfied. You may use any approved reference material normally available in the Control Room, including logs. Make all written reports, oral reports and log entries as if the evolution was actually being performed.



Initial Conditions:

A fault has occurred to charging pump "A" such that it is necessary to remove it from service. The control room team is following OP 3304A to align the swing charging pump ("C") to the "A" train.

Initiating Cues:

The US has directed you to align charging pump "C" (3CHS*P3C) mechanically to the "A" Train IAW OP 3304A, steps 4.5.4 b. 1 through 4.5.4 b. 6.

Simulator Requirements: NONE

## Job Performance Measure Guide

PERFORMANCE INFORMATION

FACILITY: MP3 SYSTEM: CHS

JPM ID NUMBER: 065

TASK TITLE: Align Charging Pump "C" (3CHS*P3C) to Train "A" Mechanically

(Denote critical steps - *Note* Critical Steps must be completed correctly to achieve a satisfactory grade)

START TIME:_____

| | | |
|---|---|---|
| STEP 1 X | Performance Step: | UNLOCK and CLOSE 3CHS*V50, charging pump 3CHS*P3C discharge cross-connect to pump 3CHS*P3B. (step 4.5.4 b. 1) |
| GRADE ___ X | Standard: | Locates valve 3CHS*V50 ("B" Charging Pump Cubicle) and simulates unlocking and rotating the handwheel in the clockwise direction until the valve is fully closed. |

Cue: Valve handwheel turns in clockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

Comments:

| | | |
|---|---|---|
| STEP 2 X | Performance Steps: | OPEN and LOCK 3CHS*V706, charging pump 3CHS*P3C discharge cross-connect to pump 3CHS*P3A. (step 4.5.4 b. 2) |
| GRADE ___ X | Standards: | Locates valve 3CHS*V706 ("B" Charging Pump Cubicle) and simulates rotating the handwheel in the counterclockwise direction until the valve is fully open. |

Cue: Valve handwheel turns in counterclockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

GRADE ___ ____ Standards: Simulates rotating valve handwheel 1/4 turn in the clockwise direction.

Cue: Valve handwheel rotates 1/4 turn in clockwise direction.

GRADE ___ _X_ Standards: Simulates locking 3CHS*V706 in OPEN position.

Cue: The valve handwheel is locked in the open position.

Comments:

STEP _3_ _X_ Performance Steps: UNLOCK and CLOSE 3CHS*V44, charging pump 3CHS*P3C suction cross-connect to pump 3CHS*P3B. (step 4.5.4 b. 3)

GRADE ____ _X_ Standards Locates valve 3CHS*V44 ("B" Charging Pump Cubicle) and simulates unlocking valve handwheel.

Cue: 3CHS*V44 is unlocked.

GRADE ____ _X_ Standards Simulates rotating the handwheel in the clockwise direction until the valve is fully closed.

Cue: Valve handwheel turns in clockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

Comments:

STEP 4 X Performance Steps: OPEN and LOCK 3CHS*V707 charging pump 3CHS*P3C suction cross-connect to pump 3CHS*P3A. (step 4.5.4 b. 4)

GRADE ___ X___ Standards: Locates valve 3CHS*V707 ("B" Charging Pump Cubicle) and simulates rotating the handwheel in the counterclockwise direction until the valve is fully opened.

Cue: The valve handwheel rotates in the counterclockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

GRADE ___ _____ Standards: Rotates the valve handwheel1/4/turn in the clockwise direction.

Cue: Valve handwheel rotates 1/4 turn in clockwise direction.

Comments:

STEP 5 X Performance Steps: CLOSE 3CHS*V659, charging pump 3CHS*P3A relief isolation. (step 4.5.4 b. 5)

GRADE ___ X Standards: Locates valve 3CHS*V659 ("A" Charging Pump Cubicle) and simulates rotating the handwheel in the clockwise direction until the valve is fully CLOSED.

Cue: The valve handwheel rotates in the clockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

Comments:

STEP 6 X Performance Steps: OPEN 3CHS*V661 and 3CHS*V663, charging pump 3CHS*P3C relief A isolation valves. (step 4.5.4 b. 6)

GRADE __ X Standards: Locates valve 3CHS*V661 ("C" Charging Pump Cubicle) and simulates rotating the handwheel in the counterclockwise direction until the valve is fully OPEN.

Cue: The valve handwheel rotates in the counterclockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

GRADE ____ ____ Standards: Simulates rotating valve handwheel 1/4 turn in the clockwise direction.

Cue: Valve handwheel rotates 1/4 turn in clockwise direction.

GRADE ____ X Standards: Locates valve 3CHS*V663 ("C" Charging Pump Cubicle) and simulates rotating the handwheel in the counterclockwise direction until the valve is fully OPEN.

Cue: The valve handwheel rotates in the counterclockwise direction. Eventually some resistance is met and the valve comes to a hard stop.

GRADE ____ X Standards: Simulates rotating valve handwheel 1/4 turn in the clockwise direction.

Cue: Valve handwheel rotates 1/4 turn in the clockwise direction.

Comments: May need to inform the examinee that step 4.5.4.b.7 will be performed by the operators in the control room.

STEP 7 X | Performance Steps: | Notify the control room that "C" Charging Pump has been mechanically aligned to the "A" train. IAW OP3304A steps 4.5.4.b.1) through 4.5.4.b.6).

GRADE __ X | Standards: | Reports to the US that the "C" Charging Pump has been mechanically aligned to the "A" train IAW OP3304A steps 4.5.4.b.1) through 4.5.4.b.6).

Comments:

**Terminating Cue:** The evaluation for this JPM is concluded.

STOP TIME_____

**Job Performance Measure Guide**

VERIFICATION OF JPM COMPLETION

Job Performance Measure No.: 065 Rev. 8

Date Performed: _____

Candidate: _____

Evaluator: _____

Validated Time (min): 10 Actual Time to Complete (min): _____

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

Result of oral questions: Number of Questions _____

Number of Correct Responses _____

Score _____ %

Areas for Improvement:



**Job Performance Measure Guide**

CANDIDATE HANDOUT

JPM ID Number: 065

**Initial Conditions:** **A fault has occurred to charging pump "A" such that it is necessary to remove it from service. The control room team is following OP 3304A to align the swing charging pump ("C") to the "A" train.**

**Initiating Cues:** **The US has directed you to align charging pump "C" (3CHS*P3C) mechanically to the "A" Train IAW OP 3304A, steps 4.5.4b.1 through 4.5.4b. 6).**

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: SPENT FUEL POOL EMERGENCY MAKEUP

JPM ID Number: 016 Revision: 7

II. Initiated:

G. A. Tait
Developer

01/07/99
Date

III. Reviewed:

J. E. Deveau
Technical Reviewer

01/11/99
Date

IV. Approved:

Not a new JPM
Cognizant Plant Supervisor (optional)

Date

R. L. Lueneburg
Nuclear Training Supervisor

01/13/99
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

System: SFC

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 15

Task Number(s): 344-05-042

Applicable To: SRO _____ RO _____ PEO _____

K/A Number: 033.A2.03 K/A Rating: 3.1 / 3.5

Method of Testing: Simulated Performance: X Actual Performance: _____

Location: Classroom: _____ Simulator: _____ In-Plant:: _____

Task Standards: Satisfactorily complete emergency makeup to the spent fuel pool using EOP 3505A.

Required Materials: PEO Rounds Key

General References: EOP 3505A, Rev. 4

*****READ TO THE STUDENT*****

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

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

JPM Number: 016 Revision: 7

Initial Conditions: A loss of all AC power has occurred and the control room team is carrying out the actions of EOP 35 ECA-0.0. When checking annunciator responses, it is noted that MB1A , 3-4. FUEL POOL LEVEL LO annunciator is lit. You have verified that the low spent fuel pool level condition is valid and that level is slowly decreasing.

Initiating Cues: The spent fuel pool low level alarm has been received and due to a loss of all AC power, the normal method of makeup is not available. Additionally, 3SFC-V31 (RWST to fuel pool isolation valve) is stuck shut. While maintenance works on 3SFC-V31, the US has directed you to makeup to the spent fuel pool using the emergency method of EOP 3505A starting with Attachment A, Step 12b. The Duty Officer has granted permission to perform this step.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

Start Time: _____

**Cue:** If at any time during this JPM, the candidate checks the fuel pool level indication or requests that information from the Control Room, provide the cue that it is 34%.

**Comments:** The Duty Officer has granted permission to perform this step.

**STEP** 1 ____ **Performance Step:** Connect emergency makeup gooseneck to the fire protection water system connection in the spent fuel pool area and align discharge of gooseneck into the spent fuel pool. (Step 12.b and c)

**GRADE** ____ ____ **Standards:** Locates the emergency makeup gooseneck (EL 51'6") and simulates connecting the gooseneck to the fire protection water system and directs discharge into the spent fuel pool.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Emergency makeup gooseneck is connected to the fire protection water system and aligned to discharge into the spent fuel pool.

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

**STEP** 2 ____ **Performance Step:** OPEN fire protection water system supply to fuel pool (3FPW-V766) located in Fuel Building 51'. (Step 12.d)

**GRADE** ____ ____ **Standards:** Locates supply valve 3FPW-V766 (Fuel Bldg. El. 51'6" by the Fuel Pool) and simulates unlocking and removing the locking device.

**Cue:** The locking device has been unlocked and removed.

**GRADE** ____ ____ **Standards:** Simulates rotating the handwheel for 3FPW-V766 in the counter-clockwise direction until the valve is open.

**Cue:** The valve handwheel rotates in the counter-clockwise direction. Eventually, some resistance is met and the valve comes to a stop.

**GRADE** ____ ____ **Standards:** Simulates rotating the valve handwheel ¼ turn in the clockwise direction.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The valve handwheel has been rotated ¼ turn in the clockwise direction.

**STEP** 3 ____ **Performance Step:** Check spent fuel pool level-INCREASING (Step 12.e)

**GRADE** ____ ____ **Standards:** Checks for water flow out of the gooseneck into the fuel pool.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** No flow is visible obtained from the gooseneck.

**STEP** 4 ____ **Performance Step:** Transition to R.N.O. column. Continue attempts to locate and isolate leaks and Proceed to step 13. (Step 12 e, RNO )

**GRADE** ____ ____ **Standards:** Proceeds to step 13. (Step 12.e RNO)

**Grade:** **SAT** _____ **UNSAT** _____

**Comments:** Although not required, the candidate may elect to inform the Control Room of the water flow problem prior to proceeding to step 13. If the candidate DOES NOT elect to contact the Control Room, GO TO step 7 of this JPM.

**STEP** 5 ____ **Performance Step:** Informs Control Room that there is no water flow from the Fire Protection Water System.

**GRADE** ____ ____ **Standards:** Contacts Control Room and makes report.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Investigation reveals that the Fire Protection Water System is not available. The Unit Supervisor directs you to close and lock 3FPW-V766 and proceed to step 13 of EOP 3505A, Attachment A. The Duty Officer has

granted permission to establish makeup to the fuel pool from the Service Water System.

**STEP** 6 ____ **Performance Step:** Close and lock 3FPW-V766.

**GRADE** ____ ____ **Standards:** Simulates rotating the handwheel in the clockwise direction.

**Cue:** The valve handwheel rotates in the clockwise direction. Eventually, some resistance is met and the valve handwheel comes to a hard stop.

**GRADE** ____ ____ **Standards:** Simulates reinstalling and locking the locking device on valve 3FPW-V766.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The locking device is reinstalled and locked on valve 3FPW-V766.

**STEP** 7 ____ **Performance Step:** Candidate proceeds to STEP 13 in Attachment A, **Locally Establish Emergency Makeup to Spent Fuel Pool From The Service Water System.**
(Step 12.e RNO)

**GRADE** ____ ____ **Standards:** Candidate proceeds to STEP 13 in Attachment A, **Locally Establish Emergency Makeup to Spent Fuel Pool From The Service Water System.**

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

**STEP** 8 ____ **Performance Step:** Check the following:

- Duty Officer - AUTHORIZES USE OF SERVICE WATER.
- Service water pump A or C - RUNNING.

(Step 13.a)

**GRADE** ____ ____ **Standards:** Calls the Control Room to obtain the Duty Officer's permission to use service water and verify either Service water pump A or C is running.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** Role play as the Unit Supervisor and inform the Candidate that the Duty Officer has granted permission to add makeup to the fuel pool from the Service Water System.

**Cue:** Additionally, tell the Candidate that the SBO Diesel has just been started and placed on bus 34C. The "A" service water pump has been started.

**STEP** 9 ____ **Performance Step:** Check service water supply to fuel pool (3SWP*V30) located in Fuel Building 24' - CLOSED (Step 13.b)

**GRADE** ____ ____ **Standards:** Locates 3SWP*V30 (Fuel Bldg. El. 24', Fuel Receiving Bay) and checks the valve closed by observing that the handle is not in the in-line position.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The valve handle is perpendicular to

**Cue:** the pipe.

**Comments:** To complete the next step, the Candidate needs some tools. It is not necessary that these tools be obtained, however have the Candidate explain where he/she would obtain the tools.

**STEP** 10 X **Performance Step:** Install the spool piece in the service water line to the spent fuel pool (located in Fuel Building 43'). (Step 13.c)

**GRADE** ___ X **Standards:** Locates the spool piece, simulates unbolting flanges and bolting the spool piece into the Service Water line (Fuel Bldg. El 43' above Filter Demin. bunker.)

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The spool piece is bolted in place.

**Comments:** For this JPM it is not necessary that a ladder be obtained. However, the Candidate should tell you the location of the nearest ladder when you ask.

**STEP** 11 X **Performance Step:** Open service water supply to fuel pool isolation (3SWP*V700) located in Aux Building 4'. (Step 13.d)

**GRADE** ___ X **Standards:** Locates 3SWP*V700 (Aux Bldg. El 4'6") and simulates turning handwheel in the counter-clockwise direction until the valve is fully open.

**Cue:** The valve handwheel rotates in the counter-clockwise direction. Eventually, some resistance is met and the valve comes to a hard stop.

**GRADE** ____ ____ **Standards:** Simulates rotating the valve handwheel ¼ turn in the clockwise direction.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The valve handwheel has been rotated ¼ turn in the clockwise direction.

**STEP** 12 X **Performance Step:** Open service water supply to fuel pool (3SWP*V30). (Step 13.e)

**GRADE** ____ X **Standards:** Simulates unlocking and removing the locking device on valve 3SWP*V30.

**Cue:** The locking device has been unlocked and removed.

**GRADE** ____ X **Standards:** Simulates positioning the valve handle to the in-line position to open the valve.

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The valve handle is aligned to the in-line position.

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

**STEP** 13 ____ **Performance Step:** Check spent fuel pool level - INCREASING Step 13.f)

**GRADE** ____ ____ **Standards:** Verifies spent fuel pool level increasing by either local (3SFC- LI26 at the FP) indication or by requesting information from control room (Computer Point SFC-L26 ).

**Grade:** **SAT** _____ **UNSAT** _____

**Cue:** The spent fuel pool level is 34% and slowly increasing.

**Comments:** The candidate may either go to the local spent fuel pool cooling panel or call the control room to obtain level information. In both cases, the following cue should be provided.

**STEP** 14 ____ **Performance Step:** Notify the control room that emergency makeup to the Spent Fuel Pool has been initiated, controlling level between 36% and 44%. (Step 13.g)

**Comments:** Candidate need not report maintenance of level to satisfy the requirements of this step.

**GRADE** ____ ____ **Standards:** Candidate reports to the US that he/she has initiated emergency makeup from the service water system to the Spent Fuel Pool in accordance with EOP 3505A, Attachment A.

**Grade:** **SAT** _____ **UNSAT** _____

**Terminating Cue:** The evaluation for this JPM is concluded.

# PERFORMANCE INFORMATION

JPM Number: 016 Revision: 7

Task Title: SPENT FUEL POOL EMERGENCY MAKEUP

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 016 Revision: 7

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

# STUDENT HANDOUT

**JPM Number:** 016

**Initial Conditions:** A loss of all AC power has occurred and the control room team is carrying out the actions of EOP 35 ECA-0.0. When checking annunciator responses, it is noted that MB1A , 3-4. FUEL POOL LEVEL LO annunciator is lit. You have verified that the low spent fuel pool level condition is valid and that level is slowly decreasing.

**Initiating Cues:** The spent fuel pool low level alarm has been received and due to a loss of all AC power, the normal method of makeup is not available. Additionally, 3SFC-V31 (RWST to fuel pool isolation valve) is stuck shut. While maintenance works on 3SFC-V31, the US has directed you to makeup to the spent fuel pool using the emergency method of EOP 3505A starting with Attachment A, Step 12b. The Duty Officer has granted permission to perform this step.

# JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: ENERGIZING VIAC

JPM ID Number: 095

Revision: 4 Chg. 2
9/15/99

II. Initiated:

R. L. Lueneburg
Developer

2/7/97
Date

verified
2-23-00

III. Reviewed:

J. Arsenault
Technical Reviewer

2/7/97 2/27/00
Date

IV. Approved:

Barry Pinkowitz
Cognizant Plant Supervisor (optional)

2/10/97
Date

Dave Lazarony
Nuclear Training Supervisor

2/27/00
2/10/99
Date

# JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

System: 120

Time Critical Task: ( ) YES ( X ) NO

Validated Time (minutes): 15

Task Number(s): 062-01-121 & 062-01-172

Applicable To: SRO X RO X PEO X

K/A Number: 062-A2.01 K/A Rating: 3.4/3.9

Method of Testing: Simulated Performance: X Actual Performance: _____

Location: Classroom: _____ Simulator: _____ In-Plant:: X

Task Standards: Energize the VIAC-1 bus as specified in OP 3345B..

Required Materials: None

General References: OP 3345B, 120 Volt Vital Instrument AC, Rev. 8

*****READ TO THE STUDENT*****

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

JPM Number: 095 Revision: 4 Chg. 2

Simulator Requirements: None: In-plant JPM

Initial Conditions: Indications of a loss of one protective system channel are present and the Control Room Team is carrying out the actions of AOP 3564. Sections 4.1 and 4.2 of OP 3345B, 120 Volt Vital Instrument AC, are complete. The alternate AC source and the inverter are energized.

Initiating Cues: The US has directed you to energize the VIAC-1 bus using Section 4.3 of OP 3345B, starting with step 4.3.1.e.

****** NOTES TO EVALUATOR ******

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly. The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".

3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

# PERFORMANCE INFORMATION

JPM Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

Start Time: _____

**Comments:** Prior to JPM step 1, it may be necessary to remind the examinee that Sections 4.1 & 4.2 of OP 3345B have been completed and that the inverter is energized.

**Comments:** NOTE: Steps 4.3.1.e and 4.3.1.f (JPM steps 2 & 3) should be performed within 15 seconds of one another. (This is done to load the inverter.)

**Comments:** If the examinee checks the BYPASS LINE TO UPS breaker position prior to starting with JPM step 1, provide the following cue:

**Cue:** The breaker handle is down ("OFF" position).

**STEP** 1 X **Performance Step:** CLOSE "BYPASS LINE TO UPS" breaker ("MAINTENANCE SWITCH"). (4.3.1.e)

**GRADE** ____ X **Standards:** Locates the BYPASS LINE TO UPS breaker and places in the "ON" position.

**Cue:** You hear a "clunk" sound and the breaker handle is in the "ON" position

**Comments:**

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 2 ____ **Performance Step:** IF inverter will not sync with the alternate ac source in 15 seconds ("SYNC LOSS" light cannot be reset), PLACE "BYPASS LINE TO UPS" breaker in "OFF" and NOTIFY Electrical Maintenance. (4.3.1.f)

**Comments:** When the examinee checks the SYNC LOSS light, provide the following cue:

**Cue:** The light is ON.

**GRADE** ____ ____ **Standards:** Depresses the LAMP TEST pushbutton and verifies the SYNC LOSS light extinguishes.

**Cue:** The LAMP TEST pushbutton is depressed and the SYNC LOSS light is OFF.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 3 ____ **Performance Step:** CHECK "STATIC SWITCH TO ALTRNATE AC SOURCE" red light lit.

**GRADE** ____ ____ **Standards:** Observes the STATIC SWITCH TO ALTRNATE AC SOURCE light status. (4.3.1.g)

**Cue:** The red light is ON.

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

| | | | | |
|---|---|---|---|---|
| **STEP** | **4** | **X** | **Performance Step:** | CLOSE "INVERTER OUTPUT" breaker and CHECK the following:<br>• AC output voltage 118 to 122 volts.<br>• AC output frequency 59.7 to 60.3 hertz. (4.3.1.h) |
| **GRADE** | | **X** | **Standards:** | Places the INVERTER OUTPUT breaker in "ON" position. |
| | | | **Cue:** | **You hear a "click" sound and the breaker position indicator indicates "ON."** |
| **GRADE** | | | **Standards:** | Checks AC OUTPUT VOLTAGE meter. |
| | | | **Cue:** | **The meter indicates 121 volts.** |
| **GRADE** | | | **Standards:** | Checks AC OUTPUT FREQUENCY meter. |
| | | | **Cue:** | **The meter indicates 60 Hz.** |
| | | | **Grade:** | **SAT** _____ **UNSAT** _____ |
| | | | **Comments:** | Prior to JPM step 5, as the examinee checks the MAINTENANCE SWITCH position, provide the following cue: |
| | | | **Cue:** | **The MAINTENANCE SWITCH handle is pointing to the "BYPASS" position.** |

# PERFORMANCE INFORMATION

JPM Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

**STEP** 5 X **Performance Step:** PLACE "MAINTENANCE SWITCH" in "UPS." (4.3.1.i)

**GRADE** ____ X **Standards:** Rotates the MAINTENANCE SWITCH (3VBA*SW-1) to the "UPS" position.

**Cue:** You hear a "clunk" sound and the MAINTENANCE SWITCH indicates that it is in the "UPS" position.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 6 ____ **Performance Step:** CHECK inverter "SYNC LOSS" light not lit. (4.3.1.j)

**GRADE** ____ ____ **Standards:** Checks SYNC LOSS light OFF.

**Cue:** The SYNC LOSS light is OFF

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

**STEP** 7 X **Performance Step:** PRESS inverter static switch "INVERTER TO AC OUTPUT" button. (4.3.1.k)

**GRADE** X **Standards:** Locates and depresses the static switch INVERTER TO AC OUTPUT pushbutton on INV-1.

**Cue:** The pushbutton is depressed.

**Grade:** **SAT** _____ **UNSAT** _____

**Comments:** The next step will provide indication that the pushbutton was depressed.

**STEP** 8 _____ **Performance Step:** CHECK static switch to inverter power yellow light lit. (4.3.1.l)

**GRADE** _____ **Standards:** Checks that the inverter static switch has shifted to inverter power by verifying the yellow light ON and the red light OFF.

**Cue:** The yellow light is ON, the red light is OFF.

**Grade:** **SAT** _____ **UNSAT** _____

**STEP** 9 ____ **Performance Step:** CHECK the following:

- AC output voltage 118 to 122 volts.
- ac output frequency 59.7 to 60.3 hertz. (4.3.1.m)

**GRADE** ____ ____ **Standards:** Checks AC output voltage meter.

**Cue:** The meter indicates 121 volts.

**GRADE** ____ ____ **Standards:** Checks AC output frequency meter.

**Cue:** The meter indicates 60 Hz.

**Grade:** **SAT** _____ **UNSAT** _____

**Comments:** If the examinee checks the alarm light status prior to performing the next step, provide the following cue:

**Cue:** The REVERSE TRANSFER light is ON.

**STEP** 10 ____ **Performance Step:** PRESS inverter lamp test button. (4.3.1.n)

**GRADE** ____ ____ **Standards:** Depresses LAMP TEST pushbutton.

**Cue:** The LAMP TEST pushbutton is depressed. The REVERSE TRANSFER light is OFF

**Grade:** **SAT** _____ **UNSAT** _____

# PERFORMANCE INFORMATION

JPM Number: 095 Revision: 4 Chg. 2

Task Title: ENERGIZING VIAC

| | | | | |
|---|---|---|---|---|
| **STEP** | **11** | ____ | **Performance Step:** | Notify the Control Room that VIAC-1 is energized. |
| **GRADE** | ____ | ____ | **Standards:** | Examinee reports to the US that the VIAC-1 bus has been energized as specified in OP 3345B. |
| | | | **Grade:** | **SAT** ____ **UNSAT** ____ |
| | | | **Terminating Cue:** | The evaluation for this JPM is concluded. |

Stop Time: _____

# VERIFICATION OF JPM COMPLETION

JPM Number: 095 Revision: 4 Chg. 2

Date Performed: _____

Student: _____

Evaluator: _____

For the student 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: _____ ("S" for satisfactory, "U" for unsatisfactory)

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

**JPM Number:** 095

**Initial Conditions:** Indications of a loss of one protective system channel are present and the Control Room Team is carrying out the actions of AOP 3564. Sections 4.1 and 4.2 of OP 3345B, 120 Volt Vital Instrument AC, are complete. The alternate AC source and the inverter are energized.

**Initiating Cues:** The US has directed you to energize the VIAC-1 bus using Section 4.3 of OP 3345B, starting with step 4.3.1.e.