Sin JPM's.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: **Manual Makeup to the VCT**

ID Number: JPM-S1 Revision: 0

Provide examinee with OP 2304C only

II. Initiated:

Daniel A. Pantalone
Developer

1/21/2005
Date

III. Reviewed:

R. J. Ashey
Technical Reviewer

1/26/05
Date

IV. Approved:

NA
User Department Supervisor

Date

Nuclear Training Supervisor

1/26/05
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S1 Rev. 0

Task Title: **Manual Makeup to the VCT**

System: CVCS

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS #004-01-194

Applicable To: SRO X RO X PEO ____

K/A No. 004-A2.06 K/A Rating 4.2/4.3

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards:	At the completion of this JPM, the examinee has completed a Manual blended make up to the VCT.
Required Materials (procedures, equipment):	OP 2304C, and 2208 Attachment 4
General References:	OP 2304C Rev 021-10, Section 4.9

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

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

Attachment 4
Manual Calculations With PPC Not Available

(Sheet 1 of 1)

Answer Key - Not needed if examinee uses the computer.

Blended Makeup Flowrate Determination Formula:

PMW flowrate = *"K" x (boric acid flowrate)*

Where, *"K"* = $\frac{\text{(ppm boron in BAST)} - \text{(ppm boron in makeup)}}{\text{ppm boron in makeup}}$ = $\frac{5943 - 573}{573}$ = $\frac{9.37}{1}$ PMW ⇒ 9.2 to 1 B.A.

Boration and Dilution Formulas:

NOTE

The boration and dilution formulas used in this worksheet assume the RCS is at 532°F, 2,250 psia, and pressurizer level is at 40%.

BAST Boron Concentration (C_{BAST}) 5943 ppm	Initial RCS Boron Concentration (C_I) 573 ppm
RCS T_{AVG} 572 °F	Desired Final RCS Boron Concentration (C_F) 573 ppm

Boration Formula ($C_F > C_I$):

$$\text{Volume of boric acid (gal)} = 62,490 \times Ln\left[\frac{(C_I - C_{BAST})}{(C_F - C_{BAST})}\right]$$

Dilution Formula ($C_F < C_I$):

$$\text{Volume of PMW (gal)} = 62,490 \times Ln\ \frac{(C_I)}{(C_F)}$$

Natural Logarithmic Values for Selected Points		
Ln 1.0 = 0.000	Ln 1.5 = 0.405	Ln 2.0 = 0.693
Ln 1.1 = 0.095	Ln 1.6 = 0.470	Ln 2.1 = 0.742
Ln 1.2 = 0.182	Ln 1.7 = 0.531	Ln 2.2 = 0.788
Ln 1.3 = 0.262	Ln 1.8 = 0.588	Ln 2.3 = 0.833
Ln 1.4 = 0.336	Ln 1.9 = 0.642	Ln 2.4 = 0.875

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S1 Rev. 0

Initiating Cues:

- The Unit Supervisor has directed you to perform a manual blended makeup to the VCT and raise VCT level by 2% while maintaining the PMW and Boric Acid flow controllers in the "AUTO" mode of operation. Use OP 2304C starting with step 4.9.2.
- When makeup is completed, return the system lineup to normal.
- The examiner will act as the US.

Initial Conditions:

- RCS boron concentration is 573 ppm
- In-service Boric Acid Storage Tank concentration is 5,943 ppm
- No manual leak rate is in progress.

Simulator Requirements:-

Initialize at any IC with charging, letdown, and makeup to the VCT available.
Verify RCS boron (Cb) = 573 on the simulator.
Verify "A" BAST pp selected to 'lead' (C-O2)
Verify "A" BAST concentration = 5943 ppm
Verify VCT level $\leq$ 82%
Set the PMW and BA Controllers 210Y and 210X setpoint to zero.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

START TIME: _____

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STEP **1** __ Performance Steps: Ensure PMW is available and at least one charging pump operating.

GRADE __ Standards: *Examinee observes red indicating lights lit on C-02 for*

___ - *PMW pumps*
___ - *and charging pumps.*

Cue
:

Comments:

~~~~~~

STEP **2** _X_ Performance Steps: Determine the required ratio of Boric Acid flow to PMW flow.

GRADE __ _X_ Standards: *Examinee uses either OP 2208 or PPC to determine that the ratio of Boric Acid to PMW flow is 1 gallon to 9.2 to 9.5 gallons, respectively.*

Cue
:

Comments: PMW value does not have to be calculated to the decimal points if done by hand.

~~~~~~

STEP **3** __ Performance Steps: Ensure the following are closed:
- Makeup valve stop, CH-512 (C-04)
- VCT makeup bypass, CH-196 (C-02)
- RWST isolation, CH-192 (C-02)
~~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

GRADE __ __ Standards: *Examinee observes the green lights 'only' lit for CH-512 on C-04, Ch-196 and CH-192 on C-02*

Cue
:

Comments:

~~~~~~

STEP **4** __ Performance Steps: Determine the desired VCT level change in % level and total gallons required.

GRADE __ __ Standards: *Examinee states that a 2% level rise is required and using 34 gal/%, a total of 68 gallons is required.*

Cue If not stated, solicit information.
:

Comments: VCT %/gal. is listed on the VCT Label on C-02.

~~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

STEP **5** _X_ Performance Steps: Reset PMW and BA controllers (FC-210X & FC-210Y), to zero.

GRADE __ Standards: *For each controller, examinee checks:*

_X_ - *"L" indicated,*

_X_ - *presses and holds "SEL" button until "TOTAL RST" is displayed.*

_X_ - *Presses "R/L" button to shift controller to "R" (resets totalizer), then back to "L".*

- *Presses "SEL" to display controller number.*

Cue :

Comments: Manual Leak Rate Determination is not in progress (Step 4.9.7.b is N/A)

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STEP **6** __ Performance Steps: Start PPC trend of VCT level (L226).

GRADE __ __ Standards: *Examinee starts PPC trend and displays it on PPC monitor.*

Cue :

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

STEP 7 _X_ Performance Steps: Adjust automatic setpoints of PMW and Boric Acid controllers (FC-210X / FC-210Y), and ensure in automatic.

GRADE __ _X_ Standards: *For each controller, examinee ensures:*
- *"AM" is lit and adjusts controller setpoint as necessary to obtain a ratio of 1 gal. BA to 9.2 to 9.5 gal. PMW.*

Cue
:

Comments: Any ratio of approximately 1 gal. BA to 9.2 to 9.5 gal. PMW is acceptable (i .e. 10 gals. BA to 92-95 gals. PMW, etc.). Controllers are normally in "AM" mode.

~~~~~~

STEP 8 _X_ Performance Steps: Place "Makeup Mode Selector Switch" in "MANUAL".

GRADE __ _X_ Standards: *Examinee places the "Makeup Mode Selector Switch" in "MANUAL" position on C-04.*

Cue
:

Comments:

~~~~~~

STEP 9 _X_ Performance Steps: Start one boric acid pump.

GRADE __ _X_ Standards: *Examinee starts the selected (by indicated switch position) "A" B.A. pump by:*

_X_
- *placing its hand switch to the "START" position,*

___
- *checks red light lit,*

___
- *and checks indicated discharge pressure is at least 98 psig.*

Cue
:

Comments: The selected BA pump must be from the BAST used to determine VCT

blend. (The "A" is the selected pump and should be used)

~~~~~~

STEP **10** _X_ Performance Steps: Open Makeup Stop Valve, CH-512.

GRADE __ _X_ Standards: *Examinee places CH-512 switch to "OPEN" on C-04 and ensures red light only is lit.*

Cue
:

Comments: Examinee may check that the "M" of "AM" extinguishes on the makeup controllers.

~~~~~~

STEP **11** __ Performance Steps: Ensure flows have stabilized at setpoints of the flow controllers.

GRADE __ __ Standards: *Examinee watches flow controllers on C-04 to ensure flow begins and then stabilizes at the calculated setpoints.*

Cue
:

Comments: The flow values may vary depending upon how many GPM of BA are used.

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STEP **12** __ Performance Steps: Monitor VCT level and pressure as indicated on PI-225 and LI-226.

GRADE __ __ Standards: *Examinee observes indications on C-02 or PPC.*

Cue
:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

STEP **13** _X_ Performance Steps: When desired VCT level is reached Close "Makeup Vlv Stop" CH-512, on C-04

GRADE __ Standards: *Examinee observes that:*

_X_ - *2% level has been added to the VCT*
_X_ - *and closes CH-512.*
_X_ - *Observes green light lit for valve* and flow stops.

Cue
:

Comments:

~~~~~~

STEP **14** _X_ Performance Steps: Stop "Boric Acid" pump, P-19A or B.

GRADE __ Standards: Examinee

_X_ - takes the "A" Boric Acid Pump hand switch on C-O2 to stop
___ - verifies the green light is lit and the red light is out
___ - verifies discharge pressure is zero with no flow.

Cue
:

Comments:

~~~~~~

STEP **15** _X_ Performance Steps: Places the "Make Up Mode Select" switch in "Dilute" on C-04.

GRADE __ _X_ Standards: *Examinee takes handswitch and turns it from the "Manual" to "Dilute" position.*

Cue
:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S1 TITLE: Manual Makeup to the VCT

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

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STOP TIME: _____
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VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S1 Rev. 0

Date Performed:

Operator:

Evaluator(s):

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: S1

Initiating Cues:

- The Unit Supervisor has directed you to perform a manual blended makeup to the VCT and raise VCT level by 2%while maintaining the PMW and Boric Acid flow controllers in the "AUTO" mode of operation. Use OP 2304C starting with step 4.9.2.
- When makeup is completed, return the system lineup to normal.
- The examiner will act as the US.
- No manual leak rate is in progress.

Initial Conditions:

- RCS boron concentration is 573 ppm
- In-service Boric Acid Storage Tank concentration is 5,943 ppm

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Filling #1 Safety Injection Tank**

ID Number: JPM-S2 Revision: 0

Provide examinee with OP 23060 only.

II. Initiated:

R. J. Ashey — 1/24/05

Developer — Date

III. Reviewed:

Technical Reviewer — 1/26/05

Date

IV. Approved:

N/A

User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05

Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
01/18/2005	Develop new JPM using 2306O.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S2 Rev. 0

Task Title: **Fill #1 Safety Injection Tank**

System: Safety Injection

Time Critical Task: Yes ____ No X

Validated Time (minutes): 25

Task No.(s): NUTIMS #006-02-017

Applicable To: SRO X RO X PEO ____

K/A No.: 006-A1.13 K/A Rating: 3.5/3.7

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards:	The examinee will start filling the #1 SIT using the "A" HPSI Pump. The "A" HPSI Pump will trip on overload. The examinee will align the "B" HPSI Pump to Facility 1 and complete filling the #1 SIT using the "B" HPSI Pump.
Required Materials (procedures,equipment):	SP 2606O OP 2343 OP 2308 ARP 2590A-001
General References:	SP 2606O, Section 4.1 OP 2343, Section 4.7 OP 2308, Section 4.1 ARP 2590A-001

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S2 Rev. 0

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to fill the #1 SIT using the "A" HPSI Pump per OP-2306O, "Safety Injection Tanks, RCS > 1750 psia".
- The examiner will act as the Unit Supervisor and/or PEO.

Initial Conditions:

- The plant is at 100% power, NOP/NOT.
- No equipment is out of service.
- Bus 24E is aligned to Bus 24C.
- A PEO is available at the "A" HPSI Pump.
- The "A" HPSI has been checked and is ready to start.

Simulator Requirements: Initialize at a normal 100% power (IC-93) with #1 SIT at the low level alarm, above 200 psig, and enter the following:

- SI04A on BT 48 ("A" HPSI Pump >20 amps) "A" HPSI Pp Trip
- I/O on Annunciator C-01 A-1 ("A" HPSI Pump Overload/Trip) on C-01 on BT 49 ("A" HPSI Pump >2 amps)
- IDT SIMT39(1) set to 7.3e4 (#1 SIT at 55.2%)

Pressurize #1 SIT to approximately 218 psig.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

START TIME: _____

STEP 1 ___ Performance Steps: DETERMINE desired SIT(s) level using one of the following criteria:

- IF sampling is required, do not fill greater than 59.6% (PPC high alarm 59.7%), the following alarms are excepted (C-01):
  - SAFETY INJECTION TANK 1 LEVEL HI" (A-10)
  - SAFETY INJECTION TANK 2 LEVEL HI" (A-11)
  - SAFETY INJECTION TANK 3 LEVEL HI" (A-12)
  - SAFETY INJECTION TANK 4 LEVEL HI" (A-13)
- IF sampling is not required, do not fill greater than the following:
  - 59.6% (PPC high alarm 59.7%) for SIT 1
  - 58.8% (alarm C-01 59%) for SITs 2, 3, and 4

GRADE ___ ___ Standards: *Per precaution 3.1, the examinee should know that a sample is not required because the SIT is being filled from the RWST, > 1720 ppm; therefore, he/she determines that the desired level is NOT greater than 59.6%*

Cue: **If asked, as the US inform the examinee that a sample is NOT required.**

Comments:

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STEP 2 ___ Performance Steps: WHEN HPSI pump is started, CHECK the following (C-01):

- Motor amperage 20 to 30 amps
- Nominal discharge pressure 1250 to 1300 psig

GRADE ___ ___ Standards: *The examinee states he/she will check motor amps between 20 and 30 amps and discharge pressure of the "A" HPSI Pump between 1250 and 1300 psig on C-01.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 3 X Performance Steps: IF filling SIT 1, PERFORM the following (C-01):
a. VERIFY open "SI-611, FILL & DRN."
b. IF required, START one of the following HPSI pumps:
- "P-41A, HPSI PP A"
- "P-41B, HPSI PP B"
- "P-41C, HPSI PP C"

GRADE		Standards:	*The examinee performs the following:*
___	X		• *On C-01, opens SI-611, Fill and Drain, and observes the red light is lit.*
___	X		• *Places the "A" HPSI Pump. handswitch on C-01 to start.*
___	___		- *Observes that the pump trips.*
___	___		- *Observes no pump amps or pressure.*
___	___		- *Observes an amber light above the pump handswitch.*
___	X		- *Observes Annunciator C-01,A1 "HPSI PUMP A OVERLOAD/TRIP"*
___	___		• *Reports to the US that the "A" HPSI has tripped and annunciator A-1 on C-01 is lit.*
___	___		• *May ask the PEO at the pump to report any abnormal conditions.*
___	X		• *Initiates Annunciator Response Procedure, ARP 2590A-001.*
___	X		• *Recommend placing the "B" HPSI in service on Facility 1.*
___	___		• *Closes SI-611 to place the plant in a known stable condition.*

Cue:
- **As the US, respond that the "A" HPSI Pp. tripped and annunciator C-01, A1, is lit.**
- **When asked, provide the examinee with Annunciator Response Procedure, ARP 2590A-001.**
- **As the PEO, report that the pump started then stopped immediately. There are no signs of any damage and no abnormal noises were heard.**
- **If required, ask the examinee for a recommendation and concur.**
- **As the US, call maintenance and generate a CR.**

Comments: The examinee should state that the "A" HPSI Pump is inoperable.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 4 ___ Performance Steps: Refer to the following LCOs and determine applicability:
- TRM 3.1.2.1
- Tech Spec 3.5.2
- Tech Spec 3.5.3

GRADE ___ ___ Standards: *The examinee informs the US to determine applicability of TRM 3.1.2.1 and TS 3.5.2 and 3.5.3*

Cue: **Report as the US that you will check the TS applicability.**

Comments: This action is directed in ARP 2590A-001 "HPSI Pp. 'A' Overload/Trip"

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STEP 5 ___ Performance Steps:
- Refer to OP 2308, High Pressure Safety Injection System, and place "B" HPSI Pp. on Facility 1.
- Determine the cause of the pump trip and submit a trouble report.

GRADE ___ ___ Standards:
- *The examinee refers to OP 2308, High Pressure Safety Injection System, Section 4.1.*
- *The examinee requests the US to have a CR/TR written and have the cause of the trip determined.*

Cue:
- **The US acknowledges the request.**
- **When asked, provide the examinee with OP 2308, High Pressure Safety Injection System, Section 4.1**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 6 X Performance Steps: If shifting from "A" pump to "B" pump, perform the following:
- Verify "B" HPSI aligned to Facility 1 per OP 2343.
- Enter TSAS 3.5.2
- Place P41A, "HPSI PP A," in PTL
- Remove P41B, "HPSI PP B," from PTL.
- Exit TSAS 3.5.2

GRADE ___ ___ Standards:

- *The examinee references OP 2343 to determine if the "B" HPSI is aligned to Facility 1 or he/she determines that "B" HPSI is aligned to Facility 1 because Bus 24E is aligned to Bus 24C.*

- *Per OP 2308, the examinee will:*

___ ___ - *Inform the US to log into TSAS 3.5.2*

___ X - *On C-01, place the "A" HPSI Pump handswitch in Pull-To-Lock.*

___ X - *On C-01, remove the "B" HPSI Pump from Pull-To Lock.*

___ ___ - *Inform the US to log out of TSAS 3.5.2.*

Cue:
- **If asked, provide the examinee with OP 2343, 4160 Volt Electrical System.**
- **If the examinee begins to verify all the steps to align the 'B' HPSI to Facility 1, as the US inform the examinee the 'B' HPSI is aligned and the steps in 2343 are complete.**
- **If examinee asks for a PEO to check "B" HPSI Pump, report that the pump is ready to start.**

Comments: The above guidance is in 2308 step 4.1

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 7 ___ Performance Steps: WHEN HPSI pump is started, CHECK the following (C-01):
- Motor amperage 20 to 30 amps
- Nominal discharge pressure 1250 to 1300 psig

GRADE ___ ___ Standards: *The examinee states he/she will check motor amps between 20 and 30 amps and discharge pressure of the "B" HPSI Pp between 1250 and 1300 psig on C-01.*

Cue:

Comments: This step may or may NOT be repeated by the examinee.

~~~~~~

STEP 8 _X_ Performance Steps: IF filling SIT 1, PERFORM the following (C-01):
a. VERIFY open "SI-611, FILL & DRN."
b. IF required, START one of the following HPSI pumps:
- "P-41A, HPSI PP A"
- "P-41B, HPSI PP B"
- "P-41C, HPSI PP C"

GRADE Standards: *The examinee performs the following:*
___ _X_ • *On C-01, examinee opens (or ensures open) SI-611, Fill and Drain, and observes the red light is lit.*
___ _X_ • *Places the "B" HPSI Pump. handswitch on C-01 to start and observes the proper indications on the "B" HPSI Pump.*

Cue: **If requested, as the PEO, report that the pump is running with NO abnormal indications.**

Comments: The examinee must realize that she/he must return to 2306O and commence with step 4.1.3.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 9 X Performance Steps: Throttle open SI-618, Hdr –1A Ck Vlv Lkg Drn Stop, not to exceed 300 psig, as indicated in Recirc Hdr Press, PI-305.

GRADE ___ X Standards:
- *While observing Recirc Header Pressure indicator, PI-305, the examinee throttles open SI-618, Hdr –1A Ck Vlv Lkg Drn Stop, to a pressure less than 300 psig, but greater than #1 SIT pressure.*
- *Examinee observes rise in #1 SIT level.*

Cue:

Comments:

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STEP 10 X Performance Steps: Close SI-618 when any of the following occur:
- SI TK1 LVL, L311 is at the desired level (PPC)
- SI TK 1 PRESS, P311, is at 225 psig (PPC)
- SI TK 1 PRESS, P-311, is at 225 psig (C-01)
- #1 SIT High Pressure alarm is annunciated on the PPC.

GRADE ___ X Standards: *When any of the following occur, the examinee will close SI-618:*
- *SI TK1 LVL, L311 is at the desired level of 59.6% (PPC)*
- *SI TK 1 PRESS, P311, is at 225 psig (PPC)*
- *SI TK 1 PRESS, P-311, is at 225 psig (C-01)*
- *#1 SIT High Level alarm is annunciated on the PPC at 59.8%.*

Cue:

Comments: SIT pressure of 225 psig should be the most limiting parameter. Depending on the flow rate, this could take 5 to 10 minutes.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S2 TITLE: Fill #1 Safety Injection Tank

STEP 11 X Performance Steps: When filling is complete, Stop the "B" HPSI Pump.

GRADE ___ X Standards: *Examinee stops the "B" HPSI Pump.*

Cue:

Comments: This JPM is complete when the examinee stops the "B" HPSI Pump. The examinee does NOT have to wait for Safety Injection to Loop 1A and 2B to lower to between 225 and 275 psig.

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S2 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No _____

Validated Time (minutes): 25

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM Number: JPM-S2 Rev. 0

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to fill the #1 SIT using the "A" HPSI Pump per OP-2306O, "Safety Injection Tanks, RCS > 1750 psia".
- The examiner will act as the Unit Supervisor and/or PEO.

Initial Conditions:

- The plant is at 100% power, NOP/NOT.
- No equipment is out of service.
- Bus 24E is aligned to Bus 24C.
- A PEO is available at the "A" HPSI Pump.
- The "A" HPSI has been checked and is ready to start.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Start 4th RCP**

ID Number: JPM-S3 Revision: 0

Provide examinee with OP2301C only.

II. Initiated:

Daniel A. Pantalone
Developer

01/18/05
Date

III. Reviewed:

Richard J. Ashey
Duffy Ashey
Technical Reviewer

1/26/05
Date

IV. Approved:

NA
User Department Supervisor

Date

Nuclear Training Supervisor

1/26/05
Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
10/27/2005 (DAP)	Developed this new JPM	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S3 Rev. 0

Task Title: **Start a Reactor Coolant Pump**

System: Reactor Coolant Pump

Time Critical Task: Yes ____ No X

Validated Time (minutes): 15 min.

Task No.(s): NUTIMS # 003 01 031

Applicable To: SRO X RO X PEO ____

K/A No.: 003 A2.03 K/A Rating: 2.7/3.1

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards: The examinee will start the RCP, monitor critical RCP parameters including alarms and secure the RCP per OP 2301C and/or ARP 2590B-083.

Required Materials (procedures,equipment): OP 2301C, Reactor Coolant Pumps
Annunciator Response Procedure, ARP 2509B-083, C-03, BA-19

General References:

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S3 Rev. 0

Initiating Cues: The US has directed you to start the 'A' RCP in accordance with OP 2301C, Reactor Coolant Pumps, section 4.1.

Initial Conditions: A plant heat-up is in progress following an outage for unplanned maintenance.

- The RCS is at normal pressure and Tc is > 500°F.
- Three RCPs are running.
- All parameters for the 'A' RCP are normal for this condition.
- OP-2301C, section 4.1 is complete up to step 4.1.10.

Simulator Requirements: Initialize at zero power, ARI. (IC-93) then trip rods.

- 'A' RCP is secured.
- RCS is at ~ 505 °F.
- Plant is stable.

A malfunction to lower the level in the Upper Oil Reservoir will be inserted after the "A" RCP is started.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S3 TITLE: **Start 4th RCP**

START TIME: _____

STEP **1** ___ Performance Steps: Observe controlled bleedoff flow on PPC or PR-150A (C-04R) between 0.75 and 2.0 gpm.

GRADE ___ ___ Standards: *Examinee displays and monitors "A" RCP bleedoff flow on the PPC, or on C-04R.*

Cue:

Comments:

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STEP **2** _X_ Performance Steps: Place "RCP-A LIFT PPS" switch to "START" (C-03)

GRADE ___ _X_ Standards: *Examinee places the 'A' RCP Lift Pump switch to start and observes the red light lit.*

Cue: **When the examinee indicates that the lift pump must run for 2 minutes, inform the examinee that 2 minutes have elapsed.**

Comments: Annunciator AB-18 on C-02/3, RCP A ANTIREV ROT FLOW LO, will reset.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S3 TITLE: **Start 4th RCP**

STEP **3** _X_ Performance Steps: Place the "RCP-A, P-40A" switch to START.

GRADE ___ _X_ Standards: *Examinee places the 'A' RCP switch on C-03 to the start position and observes:*
- *Red light lit*
- *The ammeter peg high and decay off.*

Cue: **Booth Instructor – RC12A (20%) When the examinee starts the "A" RCP, insert a malfunction to cause the upper oil reservoir level to lower.**

Comments:

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STEP **4** _X_ Performance Steps: Place the "RCP-A LIFT PPS" to "AUTO"

GRADE ___ _X_ Standards: *When annunciator C-04 AA-4 is not lit, examinee places the 'A' RCP Lift Pp. switch on C-03 to AUTO.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S3 TITLE: **Start 4th RCP**

STEP **5** _X_ Performance Steps: Observe annunciator BA19 on C-02/3, RCP A UPPER OIL RSVR LEVEL LO.

GRADE ___ _X_ Standards:
- *Examinee observes annunciator BA19 on C-02/3, RCP A UPPER OIL RSVR LEVEL LO, and informs the US.*
- *Examinee refers to ARP 2590B-083 or recommends that the associated ARP be referenced.*

Cue: **Acknowledge the recommendation and direct the examinee to implement the recommended ARP.**

Comments:

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STEP **6** _X_ Performance Steps: Check 'A' RCP upper reservoir oil level indication and determine rate of level decrease.

GRADE ___ _X_ Standards:

Examinee
- *displays the "RCP A Motor Data" display on the PPC*
- *monitors "L156" (Upper Reservoir Level).*
- *calculates the rate of level decrease*

or
- *monitors "L156" on C-04R*
- *calculates the rate of level decrease*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S3 TITLE: **Start 4th RCP**

STEP **7** ___ Performance Steps: Monitor "A" RCP bearing temperatures and oil levels (C-04R or PPC)

GRADE ___ ___ Standards: *The examinee monitors "A" RCP bearing temperatures and oil level by:*
- *displaying the "RCP A Motor Data" display on the PPC*
or
- *monitoring parameters on C-04R*

Cue:

Comments:

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STEP **8** _X_ Performance Steps: If oil level is rapidly lowering,
- trip the Rx and Turbine
- stop the "A" RCP
- refer to EOP 2525, Standard Post Trip Actions

GRADE ___ _X_ Standards: *Examinee secures the "A" RCP.*
Examinee reports that tripping the Reactor and Turbine is NOT applicable in this condition.

Cue:
- **If required, ask the examinee for a recommendation. Acknowledge the recommendation and direct the examinee to perform the required actions.**
- **If the examinee recommends turning off the "A" Lift Pump, inform the examinee that it will be turned off after the RCP coasts down.**

Comments: Turning off the "A" Lift Pump is NOT a required action, but may be recommended to limit the loss of oil in the upper reservoir.

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S3 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No _____

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-S3

Initiating Cues: The US has directed you to start the 'A' RCP in accordance with OP 2301C, Reactor Coolant Pumps, section 4.1.

Initial Conditions: A plant heat-up is in progress following an outage for unplanned maintenance.

- The RCS is at normal pressure and Tc is > 500°F.
- Three RCPs are running.
- All parameters for the 'A' RCP are normal for this condition.
- OP-2301C, section 4.1 is complete up to step 4.1.10.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Perform TDAFP Operability Test**

ID Number: JPM-S4 Revision: 0

Provide all handouts at the start of the JPM

II. Initiated:

Daniel A. Pantalone
Developer

01/24/05
Date

III. Reviewed:

R. J. Ashey
Technical Reviewer

1/26/05
Date

IV. Approved:

N/A
User Department Supervisor

Date

Nuclear Training Supervisor

1/27/05
Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
01/13/2005 (DAP)	Developed new JPM	0
02/24/2005 (DAP)	Verified that the TDAFP minimum speed on the simulator is > 1500 rpm. Changed some of the steps in the JPM from critical to not critical per NRC feedback. Deleted steps 19 and 20 from the JPM per NRC feedback.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S4 Rev. 0

Task Title: **Align TDAFP for Service**

System: Aux Feedwater

Time Critical Task: Yes ____ No X

Validated Time (minutes): 20

Task No.(s): NUTIMS #061-01-076

Applicable To: SRO X RO X PEO ____

K/A No.: 061 A2.04 K/A Rating: 3.4/3.8

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards:	Examinee completes the assigned section of SP 2610B, determines that the TDAFP is not operable, and shuts down the pump.
Required Materials (procedures, equipment):	SP-2610BO, Rev 000-00, TDAFP Tests, Operating SP 2610BO-002, Rev. 000-00, "TDAFP and Recirculation Check Valve IST" OP 2322, Rev 025-02, Auxiliary Feedwater System SP 2610BO-002, Rev. 000-00, "TDAFP and Recirculation Check Valve IST"
General References:	SP 2610BO Rev 000-00, TDAFP Tests, Operating

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S4 Rev. 0

Initiating Cues:

The US has directed you to complete SP 2610BO, "TDAFP AND RECIRCULATION CHECK VALVE IST," for a retest after minor maintenance.

- You are to start at step 4.2.10 of SP 2610BO, Rev. 000-00.
- The completed steps of the procedure are marked.

Initial Conditions:

- The TDAFP Trip Test does NOT need to be performed.
- Vibration Data does NOT need to be taken.
- The Terry Turbine Minimum Flow Recirc Discharge Check, 2-FW-33, does NOT need to be verified full open.
- A PEO is stationed at the TDAFP
- The US entered LCO 3.7.1.2 per step 4.1.3 and TRMAS 7.1.15, Item B, per step 4.2.5.
- Turbine AFP Discharge Isolation, 2-FW-9C, is closed.
- No S/G Tube leaks exist.
- Aux Feed Pump Suction Header X-Tie, 2-CN-28, is open.
- Aux Feed Pump Suction Header Stop, 2-CN-27A, is open.
- The TDAFP is ready to start. OP 2322, section 4.2 "Aligning TDAFW for Service," is complete.
- The examiner will act as the US, PEO, and any other support person.

Simulator Requirements:

IC-24 or any mode IC with AFW secured and steam supply pressure >800 psig.
FW30C @ 48%, Degraded TDAFP

- Check that you can find a computer point like F201 on the PPC Trend Search Screen.
- If not, close the MMI Viewers and restart the Viewers.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

START TIME: _____

STEP **1** _X_ Performance Steps: Refer To OP 2322, Auxiliary Feedwater System," and START TDAFP from Control Room.

GRADE ___ _X_ Standards: *Examinee obtains OP 2322, Auxiliary Feedwater, section 4.3.*

Cue:

Comments:

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STEP **2** ___ Performance Steps: - Refer To Section 4.2, and ENSURE TDAFP and stem leakoff drains are aligned for service.

GRADE ___ ___ Standards: *Examinee states that Section 4.2 is complete.*

Cue:

Comments: Per the Initial Conditions, Section 4.2 has been performed.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **3** ___ Performance Steps: If SG tube leaks are known to exist and it is necessary to operate TDAFP, as necessary, Record pump operating times in SM Log Book.

GRADE ___ ___ Standards: *Examinee states that NO tube leaks exist.*

Cue:

Comments: Per Initial Conditions, NO tube leakage exists.

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STEP **4** ___ Performance Steps: Ensure one or both of the following are open (C-05):
- No. 1 TDAFP Sply Vlv, MS-201
- No. 2 TDAFP Slpy Vlv, MS-202

GRADE ___ ___ Standards: *Examinee verifies that the following valves have red open lights lit. (C-05):*
- *No. 1 TDAFP SPLY VLV, MS-201*
- *No. 2 TDAFP SPLY VLV, MS-202*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **5** ___ Performance Steps: If at any time, No. 1 TDAFP Sply Vlv, MS-201, or No. 2 TDAFP Slpy Vlv, MS-202, are to remain closed for greater than 8 hours, Refer To Section 4.18 and Initiate necessary actions.

GRADE ___ ___ Standards: *Examinee states that No. 1 TDAFP Sply Vlv, MS-201, or No. 2 TDAFP Slpy Vlv, MS-202, will NOT be closed for greater than 8 hours*

Cue: **If asked, as the US state that the steam supply valves will NOT be closed for greater than 8 hours.**

Comments:

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STEP **6** ___ Performance Steps: Ensure the TDAFP is NOT rotating. (Local)

GRADE ___ ___ Standards: *Examinee determines the TDAFP is NOT rotating by asking the PEO to check for rotation.*

Cue: **When asked, report as the PEO that the TDAFP is NOT rotating.**

Comments:

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STEP **7** _X_ Performance Steps: Using TDAFP Stm Vlv Sel Sw, SV-4188, slowly Open terry turbine auxiliary feed pump steam supply, 2-MS-464 (SV-4199) (C-05).

GRADE ___ _X_ Standards: *Examinee places SV-4188 in the open position and observes:*

- *Both green lights go out.*
- *TDAFP Speed on C-05 increases to approximately 1500 rpm.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **8** _X_ Performance Steps: To warm turbine and lubricate bearings, OPERATE TDAFP at a minimum speed of 1,500 rpm for at least 2 minutes.

GRADE ___ _X_ Standards: *Examinee waits for 2 minutes.*

Cue: **When appropriate, inform the examinee that 2 minutes has past. The TDAFP is warm.**

Comments:

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STEP **9** _X_ Performance Steps: When at least 2 minutes has elapsed, adjust the "SPD CNTL" switch to maintain the following:
- Turbine speed between 1500 to 4200 rpm.
- Discharge pressure ≥ 1080 psig.

GRADE ___ _X_ Standards: *When 2 minutes has elapsed, the examinee adjusts the SPD "CNTL to maintain the following as monitored on C-05 or the PPC:*
- *Turbine speed between 1,500 and 4,200 rpm*
- *Pump discharge pressure greater than or equal to 1,080 psig*

Cue:

Comments:

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STEP **10** ___ Performance Steps: If mechanical seal leakage of TDAFP is greater than 1 quart per minute, Notify system engineer.

GRADE ___ ___ Standards: *Examinee asks PEO to determine magnitude of mechanical seal leakage.*

Cue: **When asked as the PEO, report that mechanical seal leakage is normal (less than 1 quart per minute).**

Comments: The examinee should now return to SP 2610BO.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **11** ___ Performance Steps: Operate TDAFP at 1,500 to 1,600 for greater than two minutes.

GRADE ___ ___ Standards: *Examinee states that the TDAFP has already been run at 1500 rpm for 2 minutes in OP 2322.*

Cue:

Comments:

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STEP **12** _X_ Performance Steps: When TDAFP has operated for greater than two minutes, adjust TDAFP "SPD CNTL" switch (C-05) and establish 4,200 rpm (4,150 to 4,250 rpm).

GRADE ___ _X_ Standards: *Examinee adjusts the SPD "CNTL to establish 4,200 rpm as read on C-05.*

Cue:

Comments:

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STEP **13** ___ Performance Steps: IF mechanical seal leakage of TDAFP is greater than one quart per minute, NOTIFY System Engineer.

GRADE ___ ___ Standards: *The examinee states that mechanical seal leakage has already been verified at less than one quart per minute.*

Cue: **If requested, as PEO, report that mechanical seal leakoff is still less than one quart per minute.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **14** ___ Performance Steps: If any TDAFP parameter is NOT normal, Notify SM or US.

GRADE ___ ___ Standards: *The examinee states that all TDAFP parameters appear normal.*

Cue: **If requested, as PEO, report that all local conditions are normal.**

Comments:

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STEP **15** _X_ Performance Steps: WHEN system conditions have been as stable as the system permits for at least two minutes, VERIFY TDAFP speed is 4,150 to 4,250 rpm from hand held tachometer (local).

GRADE ___ _X_ Standards: *Examinee requests TDAFP speed from the PEO using the hand held tachometer.*

Cue: **As the PEO, report the TDAFP speed in 4190 rpm.**

Comments:

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STEP **16** ___ Performance Steps: WHEN TDAFP has operated at 4,150 to 4,250 rpm with stable system conditions for at least two minutes, REQUEST qualified vibration monitoring personnel MEASURE TDAFP vibration level at points specified in SP 2610BO-002.

GRADE ___ ___ Standards: *Examinee should indicate vibration monitoring is NOT required per the initial conditions of this JPM.*

Cue: **If necessary, remind the examinee that vibration monitoring is NOT necessary.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **17** Performance Steps: Refer To SP 2610BO-002 and PERFORM the following:

X	a. RECORD TDAFP speed from hand held tachometer and DOCUMENT results.
X	b. RECORD TDAFP recirculation flow from portable flowmeter at FP-9863 and DOCUMENT results.
X	c. RECORD TDAFP discharge pressure (PPC P5284).
X	d. RECORD TDAFP suction pressure (PI-5401, local).
X	e. CALCULATE ΔP corrected to rated speed.
X	f. RECORD TDAFP ΔP corrected to rated speed and DOCUMENT results.

GRADE Standards: *Examinee requests the required information from the PEO and records the following in SP 2610BO-002:*

___	X	- *4190 rpm in 4.2.18.a, "Hand held Tach"*
___	X	- *60 gpm in 4.2.18.b, "Recirc Flow"*
___	X	- *1116 psig in 4.2.18.c, "Discharge Press"*
___	X	- *16 psig in 4.2.18.d, "Suction Press"*
___	___	- *Marks UNSAT on SP 2610BO-002 for "Acceptable" and "Normal"*

Cue: **Report as PEO that TDAFP speed is still 4190 rpm.**
Report as PEO that TDAFP Recirc flow is 60 gpm.
Report as PEO that TDAFP suction pressure is 16 psig.

Comments: The following is a guideline for determining TDAFP corrected discharge pressure. The actual data may be slightly different.

TDAFP discharge pressure, (PPC point P5284) = 1110 psig
TDAFP suction pressure, (PI_5401) = 16 psig
TDAFP Speed Handheld tachometer = 4190 rpm

1. 4200 ÷ 4190 (Recorded Speed) = 1.00238 (Speed Correction Ratio)
2. 1.00238 (Speed Correction Ratio) (squared) = 1.0048 (Speed Correction Factor)
3. 1110 (TDAFP Disch Press) - 16 (TDAFW Suct Press) = 1094 (Uncorrected D/P)
4. 1094 (Uncorrected D/P) x 1.0048 (Speed Correction Factor) = **1099** (D/P Corrected to Rated Pump Speed (Note 3))

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S4 TITLE: **Perform TDAFP Operability Test**

STEP **18**	X	Performance Steps:	IF any Data Section data NOT within "Acceptable" limits, Refer To Attachment 1 and PERFORM applicable actions.
GRADE		Standards:	*The examinee:*
___	X		- *Determines that the data is NOT within "Acceptable" limits and refers to Attachment 1.*
___	X		- *Notifies the US that the pump failed the surveillance.*
___	___		- *Advises the US to carry out the steps in Attachment 1.*

Cue: **As the US, acknowledge the need to perform the steps of Attachment 1.**

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

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STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S4 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No _____

Validated Time (minutes): 20

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM Number: JPM-S4 Rev. 0

Initiating Cues:

The US has directed you to complete SP 2610BO, "TDAFP AND RECIRCULATION CHECK VALVE IST," for a retest after minor maintenance.

- You are to start at step 4.2.10 of SP 2610BO, Rev. 000-00.
- The completed steps of the procedure are marked.

Initial Conditions:

- The TDAFP Trip Test does NOT need to be performed.
- Vibration Data does NOT need to be taken.
- The operation of the Terry Turbine Minimum Flow Recirc Discharge Check, 2-FW-33, does NOT need to be verified.
- A PEO is stationed at the TDAFP
- The US entered LCO 3.7.1.2 per step 4.1.3 and TRMAS 7.1.15, Item B, per step 4.2.5.
- Turbine AFP Discharge Isolation, 2-FW-9C, is closed.
- No S/G Tube leaks exist.
- Aux Feed Pump Suction Header X-Tie, 2-CN-28, is open.
- Aux Feed Pump Suction Header Stop, 2-CN-27A, is open.
- The TDAFP is ready to start. OP 2322, section 4.2 "Aligning TDAFW for Service," is complete.
- The examiner will act as the US, PEO, and any other support person.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **"A" DG Operability Test (Alternate Path)**

ID Number: JPM-S5 Revision: 0

Provide all handouts at the start of the JPM.

II. Initiated:

D. A. Pantalone — 1/18/05
Developer — Date

III. Reviewed:

D. Ashey — 1/27/05
Technical Reviewer — Date

IV. Approved:

N/A
User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05 Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
01/18/2005 (DAP)	Modified JPM 223 Rev1 by using a different malfunction to develop this JPM.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S5 Rev. 0

Task Title: **Conduct a Facility 1 or 2 D/G operability test.**

System: Diesel Generator

Time Critical Task: Yes ____ No X

Validated Time (minutes): 20 min

Task No.(s): NUTIMS # 064-02-015

Applicable To: SRO X RO X PEO ____

K/A No.: 064 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:	Examinee performs the Facility 1 Diesel Generator Operability Test, SP 2613A, on the 'A' D/G, recognizes the "D/G 12U Trouble" annunciator. Upon requesting information from the PEO in the diesel room, the examinee recommends, or trips, the 'A' D/G.
Required Materials (procedures, equipment):	Stop watch Authorized OPS Form 2613A-001, Rev. 020-01 SP 2613A, Diesel Generator Operability Tests, Facility 1, Rev. 021-04, completed through step 4.1.20.
General References:	SP 2613A, Diesel Generator Operability Tests, Facility 1, Rev. 021-04

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S5 Rev. 0

Initiating Cues:

- The US has directed you to perform the Periodic 'A' D/G Operability Test (Fast Start, Loaded Run) per SP 2613A, beginning at step 4.1.21
- Review step 4.1.2 and 4.1.4 prior to commencing the surveillance.
- I will act as the US, PEO, etc.

Initial Conditions:

- All plant conditions are normal.
- NO other surveillances are being performed that interfere with 2613A.
- SP 2613A-001 has been authorized for release.
- There are NO Ozone alerts in affect.
- Valve Alignment Check, OPS Form 2613A-002 was performed two weeks ago
- NO maintenance has been performed on the "A" DG in the last two weeks.
- The 'A' D/G pre-start check list, 2346A-002, has been completed.
- Steps 4.1.1 through 4.1.18 were performed by another operator who had to leave due to a family emergency.
- A PEO has been briefed and is standing by at the 'A' D/G gage board. He will complete the D/G Data Sheet, 2346A-004.
- The applicable portions of SP 2619G, AC Electrical Sources Inoperability, were completed 5 minutes ago.
- A chart recorder is installed for auto triggering at the 'A' D/G.
- "B" D/G is OPERABLE.

Simulator Requirements:

- Initialize at a normal 100% power IC or a Low Power IC.
- Ensure the 'B' D/G is operable with its breaker open.
- Ensure 24C is powered from the NSST or RSST.
- Ensure Z1 SW total flow is $\geq$ 2000 GPM.
- Ensure no surveillances will interfere with 2613A.
- I/O A-36, panel CO-8 'ON' for BT37

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

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. This JPM may be performed in conjunction with JPM-220 and JPM 221.

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

START TIME: _____

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STEP **1** ___ Performance Steps: If D/G prelube time exceeds 12 minutes and D/G is *not* started, then perform applicable steps to rotate the D/G with air.

GRADE ___ ___ Standards: *Examinee states that the prelube time should NOT exceed 12 minutes.*

Cue:

Comments:

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STEP **2** _X_ Performance Steps: Place Prelube Pump switch in START and start prelube timing.

GRADE ___ _X_ Standards:
- *Examinee places Prelube Pump switch in the START position and starts the stop watch.*
- *Examinee stops the stop watch when 9.5 to 12 minutes has elapsed.*

Cue: **At the discretion of the examiner, inform the examinee that 9 minutes has elapsed.**
(Booth Operator - EGR16 'Norm' [This resets the "12U DG Trouble" alarm on CO-8])
When asked the operator may request the PEO to reset the alarm on the EDG alarm panel.

Comments: The 9 minute mark allows the examinee time to review the next set of steps.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **3** _X_ Performance Steps: When 9½ to 12 minutes has elapsed, perform the following:
- Start the chart recorder
- Simultaneously place the "A" DG Manual Start-Stop switch in START and start the stop watch.

GRADE ___ _X_ Standards:
- *When 9½ to 12 minutes has elapsed, examinee informs the PEO to start the chart recorder*
- *Examinee simultaneously places the "A" DG Manual Start-Stop switch in START and starts the stop watch.*

Cue: **Inform examinee that the chart recorder is running.**

Comments:

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STEP **4** _X_ Performance Steps: When diesel Ready To Load alarm is lit, stop the stop watch.

GRADE ___ _X_ Standards: *After approximately 8 seconds, the examinee observes the "Ready To Load" annunciator (A-34, C-08) and stops the stop watch.*

Cue:

Comments: The Ready to Load alarm will be annunciated in less than 15 seconds.

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STEP **5** ___ Performance Steps: ENSURE "PRESSS DELAY CIRCUIT ENERGIZED" light is lit after 25 seconds.

GRADE ___ ___ Standards: *The examinee asks the PEO at the 'A' D/G to report when the "PRESS DELAY CIRCUIT ENERGIZED" light is lit and monitors clock.*

Cue: Wait approximately 25 seconds and report the "PRESS DELAY CIRCUIT ENERGIZED" light is lit.

Comments:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

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STEP **6** _X_ Performance Steps: Place Prelube Pump switch in STOP.

GRADE ___ _X_ Standards: *Examinee places the Prelube Pump switch in STOP.*

Cue:

Comments:

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STEP **7** ___ Performance Steps: Record stop watch diesel start time on OPS Form 2346A-004, "A" DG Data Sheet.

GRADE ___ ___ Standards: *Examinee directs the PEO to enter the time from the stop watch on OPS Form 2346A-004, "A" DG Data Sheet.*

Cue: **The time has been entered on the form.**

Comments: The start time must be less than or equal to 15 seconds.

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STEP **8** ___ Performance Steps: Record the appropriate information on SP 2613A-001.

GRADE ___ ___ Standards: *Examinee records the following on SP 2613A-001*
- *Stopwatch diesel start time, if < 15 sec. Initial the form.*
- *'A' D/G voltage, if between 3740 to 4580 volts, initial the form.*
- *'A' D/G frequency, if between 58.8 and 61.2 Hz, initial the form.*
- *Initial for adequate pre-lube time.*

Cue:

Comments: The start time must be less than 15 sec.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **9** ___ Performance Steps: Adjust "A" DG Load Cntl Governor Cntl switch to obtain at least 60 Hz.

GRADE ___ ___ Standards: *The examinee adjusts "A" DG Load Cntl Governor Cntl switch to obtain at least 60 Hz.*

Cue:

Comments:

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STEP **10** _X_ Performance Steps: Place Syn Switch, 15G-12U-2, to ON.

GRADE ___ _X_ Standards: *The examinee obtains the hand switch, places it in the hole for Syn Switch, 15G-12U-2, and turns the switch to the ON position.*

Cue:

Comments: After approximately 1 minute, the SYNC SWITCH ON alarm will annunciate. This is an expected alarm.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **11** _X_ Performance Steps: Adjust "A" DG Voltage Cntl Reg Auto Cntl switch to match generator voltage with bus voltage.

GRADE ___ _X_ Standards: *The examinee will place the "A" DG Voltage Cntl Reg Auto Cntl switch in either RAISE or LOWER to match the Incoming voltage with the Running voltage.*

Cue:

Comments:

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STEP **12** _X_ Performance Steps: Turn "A" DG Volt Cntl Trans Sw to MAN.

GRADE ___ _X_ Standards: *The examinee places the "A" DG Volt Cntl Trans Sw in MAN.*

Cue:

Comments:

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STEP **13** _X_ Performance Steps: Adjust "A" DG Voltage Cntl Reg Man Cntl switch to match generator voltage with bus voltage.

GRADE ___ _X_ Standards: *The examinee place the "A" DG Voltage Cntl Reg Man Cntl switch in either RAISE or LOWER to match the Incoming voltage with the Running voltage.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **14** _X_ Performance Steps: Turn "A" DG Volt Cntl Trans Sw to AUTO.

GRADE ___ _X_ Standards: *The examinee places the "A" DG Volt Cntl Trans Sw in AUTO.*

Cue:

Comments:

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STEP **15** _X_ Performance Steps: Turn Unit Parallel Sel Sw/12U to UNIT PARALLEL and observe Unit Parallel white light lit.

GRADE ___ _X_ Standards: *The examinee will place the Unit Parallel Sel Sw/12U to the UNIT PARALLEL position and observe Unit Parallel white light is lit.*

Cue:

Comments:

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STEP **16** ___ Performance Steps: To ensure slow rotation (0.5 to 1 rpm) of sychroscope in fast direction, adjust "A" SG Load Cntl Governor Cntl switch to raise or lower engine speed.

GRADE ___ ___ Standards: *The examinee will place the "A" SG Load Cntl Governor Cntl switch in the RAISE or LOWER position to ensure the syncroscope is rotating at approximately 0.5 to 1 rpm in the fast direction.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **17** _X_ Performance Steps: When synchroscope needle passes "11 o'clock" position, simultaneously close DG A Fdr Bkr, 15G-12U-2 (A312)

GRADE ___ _X_ Standards: When synchroscope needle passes "11 o'clock" position, The examinee will simultaneously close the "A" DG Output Breaker, 15G-12U-2 (A312).

Cue:

Comments: Due to the operating characteristics of the simulator, the "A" DG Output Breaker may NOT close or may trip. This does NOT constitute a failure of the JPM. The examinee may be given additional opportunities to reset and close the breaker.

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STEP **18** _X_ Performance Steps:
- Adjust "A" DG Load CNTL Governor Cntl switch to load the "A" DG to between 1,350 and 1,450 kW at a rate of 250 to 300 kW per minute.
- While raising "A" DG load, Adjust "A" DG Voltage Cntl Reg Auto Cntl to maintain a kvar loading at approximately 50% of the kW loading.

GRADE ___ _X_ Standards:
- *The examinee will use the "A" DG Load Cntl Governor Cntl switch to load the "A" DG to between 1,350 and 1,450 kW at a rate of 250 to 300 kW per minute.*
- *While raising "A" DG load, the examinee will adjust "A" DG Voltage Cntl Reg Auto Cntl to maintain a kvar loading at approximately 50% of the kW loading.*

Cue:

Comments: Annunciator (A-36, C-08) "DIESEL GENERATOR 12U TROUBLE", will be annunciated when load is raised to approximately 500 kW. The examinee may NOT notice the annunciator until load is raised to the directed range.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **19** _X_ Performance Steps: Observe Annunciator (A-36, C-08) "DIESEL GENERATOR 12U TROUBLE"

GRADE ___ _X_ Standards: *The examinee will observe and annunciator (A-36, C-08) "DIESEL GENERATOR 12U TROUBLE".*

Cue:

Comments:

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STEP **20** _X_ Performance Steps: Send an operator to the 'A' D/G panel C-38 to determine cause of the annunciator.

GRADE ___ _X_ Standards: *The examinee directs the PEO in the 'A' D/G room to report the cause of the annunciator.*

Cue: **As the PEO, report that annunciator (B-1, C-38) "LUBE OIL PRESSURE LOW" is lit.**

If the examinee requests a report of lube oil pressure, report 'A' D/G Lube Oil pressure = 19 psig and decreasing slowly.

If requested the PEO reports that the ARP for alarm B-1 on C-38 is missing.

Comments: Due to the seriousness of the annunciator, the examinee may NOT wait for a report on lube oil pressure or for referring to the ARP for (B1, C-38) "Low Lube Oil Pressure" before (recommend) tripping the "A" DG. (See next step)

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

STEP **21** _X_ Performance Steps: Refer to ARP 2591A (B-1, C-38) "LUBE OIL PRESSURE LOW".
- Setpoint = 20 psig decreasing
- Auto Function, diesel trips.

GRADE ___ _X_ Standards: *The examinee refers to ARP 2591A "Lube Oil Pressure Low", and directs the PEO in the 'A' D/G Room to report lube oil pressure.*

Upon receiving a report of 19 psig and slowly dropping, the examinee will either:
- *Recommend tripping the 'A' D/G or will immediately trip the 'A' D/G by one, or a combination of, the following.*
  - *Simultaneously push both emergency trip buttons.*
  - *Place the "A" DG Man Start-Stop switch in the STOP position.*
  - *Trip the "A" DG Output breaker, then place the "A" DG Man Start-Stop switch in the STOP position.*

Cue: **As the PEO in the 'A' D/G Room report lube oil pressure = 19 psig and dropping slowly.**

Comments: While ARP 2591A (B-1) does not direct the D/G be tripped, it clearly stated the D/G should have tripped. The examinee should recommend or trip the 'A' D/G.

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STEP **22** _X_ Performance Steps: Trip the "A" EDG by pushing both Emergency Trip push buttons (CO-8 vertical section), and observing the breaker tripping open and the EDG frequency lowering.

GRADE ___ _X_ Standards: *The examinee trips the "A" EDG by simultaneously pushing the Emergency Trip pushbuttons. The examinee observes the EDG breaker trip open and the frequency lowering.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S5 TITLE: **"A" DG Operability Test**

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S5 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 20 minutes

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

IC-93 Low Power JPMs

	A	B	C	D
ASI Upper	4.73	4.69	4.70	4.70
ASI Lower	4.73	4.70	4.72	4.69
Nuclear Power	~~6~~ 4.99	4.87	4.89	4.87
ΔT Power	3.90	4.09	~~3.93~~ 4.40	4.06
Tcold Cal.	4.80	4.61	4.90	4.90

EXAMINEE HANDOUT

JPM ID Number: JPM-S5

Initiating Cues:

- The US has directed you to perform the Periodic 'A' D/G Operability Test (Fast Start, Loaded Run) per SP 2613A, beginning at step 4.1.21
- Review step 4.1.2 and 4.1.4 prior to commencing the surveillance.
- I will act as the US, PEO, etc.

Initial Conditions:

- All plant conditions are normal.
- NO other surveillances are being performed that interfere with 2613A.
- SP 2613A-001 has been authorized for release.
- There are NO Ozone alerts in affect.
- Valve Alignment Check, OPS Form 2613A-002 was performed two weeks ago
- NO maintenance has been performed on the "A" DG in the last two weeks.
- The 'A' D/G pre-start check list, 2346A-002, has been completed.
- Steps 4.1.1 through 4.1.18 were performed by another operator who had to leave due to a family emergency.
- A PEO has been briefed and is standing by at the 'A' D/G gage board. He will complete the D/G Data Sheet, 2346A-004.
- The applicable portions of SP 2619G, AC Electrical Sources Inoperability, were completed 5 minutes ago.
- A chart recorder is installed for auto triggering at the 'A' D/G.
- "B" D/G is OPERABLE.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Power Range Safety Channel and Delta T Power Channel Calibration**

ID Number: JPM-S6 Revision: 0

Provide all handouts at the start of the JPM

II. Initiated:

Richard J. Ashley

R. J. Ashley — 1/10/05

Developer — Date

III. Reviewed:

David A. Watford — 1/26/05

Technical Reviewer — Date

IV. Approved:

N/A

User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05 Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S6 Rev. 0

Task Title: **Power Range Safety Channel and Delta T Power Channel Calibration**

System: Instrumentation

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10 minutes

Task No.(s): NUTIMS # 015-02-002

Applicable To: SRO X RO X PEO ____

K/A No.: 012 A2.04 K/A Rating: 3.1/3.2

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards:	During the performance of SP 2601D, Power Range Safety Channel and Delta T Power Channel Calibration, the examinee determines that the –10 Volt power Supply voltage is not in the acceptable range and bypasses the channel.
Required Materials (procedures,equipment):	• SP 2601D, Power Range Safety Channel and Delta T Power Channel Calibration • Authorized copy of surveillance form SP 2601D-001, Power Range Safety Channel and Delta T Power Channel Calibration • Calculator
General References:	SP 2601D, Power Range Safety Channel and Delta T Power Channel Calibration

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S6 Rev. 0

Initiating Cues:

- You are the PPO
- An I&C Technician has just completed the incore/excore detector calibration on RPS Channel "C".
- The US has directed you to perform surveillance SP 2601D, Power Range Safety Channel and Delta T Power Channel Calibration, for RPS Channel "C" only.

Initial Conditions:

- The plant is at 100% power
- All systems are in a normal alignment
- SP 2601D-001 has been authorized

Simulator Requirements: Any 100% power, stable IC. (e.g., IC-24)

Insert malfunction RP30C at 4% to cause the –10 Volt power supply on Channel "C" to read –9.996 Volts.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S6 TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

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START TIME: _____

STEP **1** _X_ Performance Steps: Place Meter Input switch to "METER INPUT."

GRADE ___ _X_ Standards: *Examinee places RPS Channel "C" Meter Input switch to "METER INPUT" position.*

Cue:

Comments:

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STEP **2** _X_ Performance Steps: Press and hold the "ZERO" test button.

GRADE ___ _X_ Standards: *Examinee presses and holds the "ZERO" test button on RPS Channel "C".*

Cue:

Comments:

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STEP **3** _X_ Performance Steps: When voltage is observed, release test button and record respective voltage on applicable form.

GRADE ___ _X_ Standards: *Examinee observes a voltage of 0.000±0.003 volts, releases the test button, and records this value on SP 2601D-001, page 2, step 4.1.1c for Channel "C"*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S6 TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

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STEP **4** _X_ Performance Steps: Press and hold the "+10V" test button.

GRADE ___ _X_ Standards: *Examinee presses and holds the "+10V" test button on RPS Channel "C".*

Cue:

Comments:

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STEP **5** _X_ Performance Steps: When voltage is observed, release test button and record respective voltage on applicable form.

GRADE ___ _X_ Standards: *Examinee observes a voltage of +10.000±0.003 volts, releases the test button, and records this value on SP 2601D-001, page 2, step 4.1.1c for Channel "C"*

Cue:

Comments:

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STEP **6** _X_ Performance Steps: Press and hold the "-10V" test button.

GRADE ___ _X_ Standards: *Examinee presses and holds the "-10V" test button on RPS Channel "C".*

Cue:

Comments:

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STEP **7** _X_ Performance Steps: When voltage is observed, release test button and record respective voltage on applicable form.

GRADE ___ _X_ Standards: *Examinee observes a voltage of –9.996 volts, releases the test button, and records this value on SP 2601D-001, page 2, step 4.1.1c.for Channel "C"*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S6 TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

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STEP **8** _X_ Performance Steps: Compare each channel's voltage values within "Acceptance Criteria" range on applicable form.

GRADE ___ _X_ Standards: *Examinee determines that the voltage reading of –9.996 volts exceeds the acceptance criteria of –9.997 to –10.003 volts on SP 2601D-001, page 2, step 4.1.1c for Channel "C"*
Examinee checks "UNSAT" on SP 2601D-001, page 2, step 4.1.2, for Channel "C"

Cue:

Comments:

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STEP **9** _X_ Performance Steps: If any values are outside of acceptance criteria, perform the following:
- Refer to Technical Specification LCO 3.3.1.1 and perform applicable actions to declare applicable RPS channel inoperable.
- Perform applicable actions to place the RPS channel's trips in a bypassed condition.
- Submit Priority 1 Trouble Report to I&C Department to repair or calibrate voltmeter.

GRADE ___ _X_ Standards: *Examinee determines that RPS Channel "C" is inoperable and performs the following:*
- *Informs the US that RPS Channel "C" is inoperable and recommends logging into the action statement for Tech Spec LCO 3.3.1.1.*
- *Places the bypass key lock switches for all trip units on Channel "C" in the "trip" position.*
- *Recommends submitting a Priority 1 Trouble Report to the I&C Department for repair or calibrate the RPS Channel "C" –10 volt power supply.*
- *States that the remainder of the calibration cannot be accomplished until the –10 volt power supply is restored.*

Cue: **If the examinee does NOT make the recommendations listed, ask him/her what recommendations he/she would make.**

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

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STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S6 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes ____ No **X**

Validated Time (minutes): 10 minutes

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-S6

Initiating Cues:

- You are the PPO
- An I&C Technician has just completed the incore/excore detector calibration on RPS Channel "C".
- The US has directed you to perform surveillance SP 2601D, Power Range Safety Channel and Delta T Power Channel Calibration, for RPS Channel "C" only.

Initial Conditions:

- The plant is at 100% power
- All systems are in a normal alignment
- SP 2601D-001 has been authorized

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger**

ID Number: JPM-S7 Revision: 0

Provide all handouts at the start of the JPM

II. Initiated:

Richard J. Ashley

R. J. Ashey — 1/18/05

Developer — Date

III. Reviewed:

Daniel A. Pantalone — 1/24/05

Technical Reviewer — Date

IV. Approved:

N/A

User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05

Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S7 Rev. 0

Task Title: **Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger**

System: Plant Service – Reactor Building Closed Cooling Water

Time Critical Task: Yes ____ No X

Validated Time (minutes): 30 minutes

Task No.(s): NUTIMS # 076-01-043

Applicable To: SRO X RO X PEO ____

K/A No.: 008 A4.01 K/A Rating: 3.3/3.1

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards: The examinee places "B" RBCCW Pump and Heat Exchanger in service in place of "A" RBCCW Pump and Heat Exchanger.

Required Materials (procedures,equipment): OP 2330A, RBCCW System, Sections 4.1, 4.2 and 4.16.
OP 2326A, Service Water System, Sections 4.9 and 4.11

General References:

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S7 Rev. 0

Initiating Cues:

- You are the SPO.
- Preventive Maintenance is scheduled on the "A" RBCCW Heat Exchanger and Pump.
- The US directs you to place the "B" RBCCW pump and "B" RBCCW HX in service and to remove the "A" RBCCW pump and "A" RBCCW HX from service per OP 2330A, sections 4.2 (Pump first) and OP 2326A section 4.9.
- I will act as the US/PEO as needed

Initial Conditions:

- "A" & "C" RBCCW Pumps and Heat Exchangers are in service
- Bus 24E is aligned to Bus 24C.
- "B RBCCW Pump breaker (A504) racked up.
- The SIAS/LNP Actuation Signal HS 6119D (A504) is in the BLOCK position.
- The "B" RBCCW HX is presently being used for minimum flow for "A" Service Water header.
- Injection temperature is 44°F.
- All other plant conditions are normal.

Simulator Requirements:

Initialize to any IC with:

- A normal RBCCW lineup ("A" & "C" pumps and heat exchangers in service; "B RBCCW Heat Exchanger used for minimum flow for "A" Service Water header)
- Bus 24E aligned to Bus 24C.
- SIAS/LNP Actuation Signal HS 6119D (A504) in the BLOCK position.

Insert a malfunction to cause fouling of the "B RBCW Heat Exchanger after it is placed in service. (SW03B @ 100% on BT-47 , ramp in at 10 sec.)

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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START TIME: _____

STEP **1** ___ Performance Steps:

Verify the following:

- "B" RBCCW Pump switch is in Pull-To-Lock. (C-06)
- "RBCCW PP B HDR B SUCT, RB-211D," is closed and "RBCCW PP B HDR A SUCT, RB-211C," is open (C-06)
- "HDR B HX-B OUT, RB-4.1D," is closed (C-06)

GRADE ___ ___ Standards:

Examinee observes:

- The "B" RBCCW pump handswitch is in the Pull-To-Lock position.
- The green light for "RBCCW PP B HDR B SUCT, RB-211D," is lit.
- The red light for "RBCCW PP B HDR A SUCT, RB-211C," is lit.
- The green light for "HDR B HX-B OUT, RB-4.1D," is lit.

Cue:

Comments: The examinee may dispatch a PEO to locally monitor the pump swap.

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STEP **2** _X_ Performance Steps: Verify open PP DIS HDR A/B X-TIE, RB-251A. (C-06).

GRADE ___ _X_ Standards: *Examinee places the handswitch for PP DIS HDR A/B X-TIE, RB-251A, in the open position and observes the red light lit.*

Cue:

Comments: PP DIS HDR A/B X-TIE, RB-251A, may be open or closed initially. If the valve is initially open, the examinee will only observe the red light lit.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **3** ___ Performance Steps: Log into TS 3.7.3.1

GRADE ___ ___ Standards: *Examinee informs the US of the need to log into TSAS 3.7.3.1.*

Cue: **US acknowledges the need to enter TSAS 3.7.3.1**

Comments:

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STEP **4** _X_ Performance Steps: Start "RBCCW PP B." (C-06)

GRADE ___ _X_ Standards: *Examinee momentarily places the "B" RBCCW Pump handswitch in the Start position and observes the red light for the "B" RBCCW Pump is lit.*

Cue: **If asked, report as the PEO that the pump is running normally.**

Comments:

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STEP **5** ___ Performance Steps: Check alarm RBCCW PUMP B SIAS/LNP START MANUALLY BLOCKED" (AA-20, C-06/07) lit.

GRADE ___ ___ Standards: *Examinee observes alarm RBCCW PUMP B SIAS/LNP START MANUALLY BLOCKED" (AA-20, C-06/07) is lit.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **6** ___ Performance Steps: Check the following for the "B" RBCCW Pump:
- Normal running amps (36 to 44 amps)
- Pump discharge pressure (105 to135 psig)

GRADE ___ ___ Standards: *Examinee observes the following indications on C-06 for the "B" RBCCW Pump:*
- *Normal running amps of 36 to 44 amps*
- *Pump discharge pressure of105 to 135 psig*

Cue: **If the examinee reports low amperage or high discharge pressure, inform him/her that this is normal for two pumps running together.**

Comments:

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STEP **7** ___ Performance Steps: Close "A" RBCCW Pump Discharge Stop, 2-RB-3A

GRADE ___ ___ Standards: *Examinee directs a PEO to close "A" RBCCW Pump Discharge Stop, 2-RB-3A.*

Cue: **Booth Operator – Set CCR06 to 0%. When directed as the PEO, report that "A" RBCCW Pump Discharge Stop, 2-RB-3A is closed.**

Comments: It would normally take 1-2 minutes to close "A" RBCCW Pump Discharge Stop, 2-RB-3A.

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STEP **8** _X_ Performance Steps: Stop "A" RBCCW PP A" and place switch in Pull-To-Lock. (C06)

GRADE ___ _X_ Standards: *Examinee places the "A" RBCCW Pump handswitch in the Pull-To-Lock position and observes pump amps lower to "0" and the green light is lit.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **9** _X_ Performance Steps: Place "SIAS/LNP Actuation Signal HS 6119D" (A504) is in the NORMAL position.

GRADE ___ _X_ Standards: *Examinee directs a PEO to place SIAS/LNP Actuation Signal HS 6119D (A504) is in the NORMAL position and observes the following:*

- *"RBCCW PUMP B SIAS/LNP START MANUALLY BLOCKED" annunciator clears.*
- *RBCCW HDR A FLOW HI annunciator is NOT lit.*

Cue: **Booth Operator – CCR40 set to Normal. When directed, as the PEO, report that the "SIAS/LNP Actuation Signal HS 6119D" (A504) is in the NORMAL position.**

Comments:

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STEP **10** ___ Performance Steps: Exit Tech Spec 3.7.3.1

GRADE ___ ___ Standards: *Examinee informs the US of the need to exit TSAS 3.7.3.1.*

Cue: **US acknowledges the need to exit TSAS 3.7.3.1**

Comments:

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STEP **11** ___ Performance Steps: Open "A" RBCCW Pump Discharge Stop, 2-RB-3A.

GRADE ___ ___ Standards: *Examinee directs a PEO to open "A" RBCCW Pump Discharge Stop, 2-RB-3A.*

Cue: **Booth Operator – Set CCR06 to 100%. When directed, as the PEO, report that "A" RBCCW Pump Discharge Stop, 2-RB-3A is open.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **12** ___ Performance Steps: Verify "A" RBCCW header flow on FI-6035 greater than or equal to 6,000 gpm and less than 8,000 gpm.

GRADE ___ ___ Standards: *Examinee observes FI-6035 and determines that "A" RBCCW header flow is greater than or equal to 6,000 gpm and less than 8,000 gpm. (Approximately 6300 gpm)*

Cue:

Comments: Closing PP DIS HDR A/B X-TIE, RB-251A, is NOT required. The "B" RBCCW Heat Exchanger is NOT in service.

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STEP **13** ___ Performance Steps: Perform the following to ensure correct flow through RM-6038:

- Throttle "B" RBCCW Pump RE Flow Stop, 2-RB-41, as required to set flow indicated on FI-6313 to greater than or equal to one gpm.
- Throttle "C" RBCCW Pump RE Flow Stop, 2-RB-39, as required to set flow indicated on FI-6314 to greater than or equal to one gpm.
- Verify flow indicated on FI-6038 is between 2.0 and 4.5 gpm.

GRADE ___ ___ Standards: *Examinee directs a PEO to:*

- *Throttle "B" RBCCW Pump RE Flow Stop, 2-RB-41, as required to set flow indicated on FI-6313 to greater than or equal to one gpm.*
- *Throttle "C" RBCCW Pump RE Flow Stop, 2-RB-39, as required to set flow indicated on FI-6314 to greater than or equal to one gpm.*
- *Verify flow indicated on FI-6038 is between 2.0 and 4.5 gpm.*

Cue: **When directed, as the PEO report that radiation monitor flows have been set as requested.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **14** ___ Performance Steps: Refer to OP 2326A, "Service water System", and establish Service water flow through the "B" RBCCW Heat Exchanger.

GRADE ___ ___ Standards: *Examinee obtains OP 2326A, "Service water System", and selects section 4.9, Placing "B" RBCCW Heat Exchanger in Service and Removing "A RBCCW Heat Exchanger From Service".*

Cue: **Provide OP 2326A, Service Water, when requested.**

Comments:

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STEP **15** ___ Performance Steps: Ensure the following are closed:

- "B" Service Water Header to "B" RBCCW Heat Exchanger, 2-SW-7A
- "B" RBCCW Heat Exchanger to "B" Discharge Header, 2-SW-10A.

GRADE ___ ___ Standards: *Direct a PEO to verify the following valves are closed:*

- *"B" Service Water Header to "B" RBCCW Heat Exchanger, 2-SW-7A*
- *"B" RBCCW Heat Exchanger to "B" RBCCW Discharge Header, 2-SW-10A.*

Cue: **As the PEO, report that 2-SW-7A and 2-SW-10A are closed.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **16** ___ Performance Steps: Open the following:
- "A" Service Water Header to "B" RBCCW Heat Exchanger, 2-SW-7B
- "B" RBCCW Heat Exchanger to "A" Discharge Header, 2-SW-10B.

GRADE ___ ___ Standards: *Direct a PEO to verify the following valves are open:*
- *"A" Service Water Header to "B" RBCCW Heat Exchanger, 2-SW-7B*
- *"B" RBCCW Heat Exchanger to "A" RBCCW Discharge Header, 2-SW-10B.*

Cue: **As the PEO, report that 2-SW-7B and 2-SW-10B are open.**

Comments:

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STEP **17** ___ Performance Steps: At "B" RBCCW Heat Exchanger temperature controller, TIC-6307, ensure the following:
- Mode switch in "A" (inside controller)
- Temperature control knob set greater than 200°F.

GRADE ___ ___ Standards: *Direct a PEO to perform the following:*
- *Ensure the mode switch is in "A" (inside controller)*
- *Set the temperature control knob to greater than 200°F.*

Cue: **Booth Instructor – Set CCR03 to 95. As the PEO, inform the examinee that the temperature controller is in automatic and set to 200°F.**

Comments:

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STEP **18** ___ Performance Steps: Ensure "B" RBCCW Heat Exchanger temperature control valve is in either "Summer Valve, 2-SW-8.1B" or "Winter Valve, 2-SW-246".

GRADE ___ ___ Standards: *Examinee directs the PEO to ensure the "B" RBCCW temperature control valve is in the "Winter" mode.*

Cue: **Booth Operator – Ensure SWR09 is set to Winter. Report that the temperature control valve is in the Winter Mode.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **19** ___ Performance Steps: Log into TS Action Statement 3.7.4.1

GRADE ___ ___ Standards: *Examinee informs the US of the need to enter TSAS 3.7.4.1.*

Cue: **Acknowledge the need to enter TSAS 3.7.4.1.**

Comments:

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STEP **20** _X_ Performance Steps: Open "B" RBCCW Heat Exchanger SW Outlet, 2-SW-9B.

GRADE ___ _X_ Standards: *Examinee directs the PEO to open "B" RBCCW Heat Exchanger SW Outlet, 2-SW-9B.*

Cue: **Booth Operator – SWR24 set to 100%. When directed, as the PEO, report that "B" RBCCW Heat Exchanger SW Outlet, 2-SW-9B is open.**

Comments:

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STEP **21** _X_ Performance Steps: Slowly lower "B" RBCCW Heat Exchanger temperature control knob to setting specified by the Control Room.

GRADE ___ _X_ Standards: *Examinee directs the PEO to slowly lower the "B" RBCCW Heat Exchanger TCV to 75°F.*

Cue: **Booth Instructor – Set CCR03 to 75. As the PEO, inform the examinee that the temperature controller has been set to 75°F.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **22** ___ Performance Steps: Refer to OP 2330A, Reactor Building Closed Cooling Water System," and shift RBCCW loads from "A" RBCCW Heat Exchanger to "B" RBCCW Heat Exchanger.

GRADE ___ ___ Standards: *Examinee obtains OP 2330A, Reactor Building Closed Cooling Water System," and refers to Section 4.16*

Cue:

Comments:

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STEP **23** ___ Performance Steps: If "A" RBCCW Pump is operating, perform the following:
- Verify HDR BHX-B OUT, RB-4.1D is closed.
- Open PP DIS HDR A/B X-TIE, RB-251A.

GRADE ___ ___ Standards: • *Examinee states that "A" RBCCW Pump is NOT in operation; therefore, this step is NOT applicable.*

Cue:

Comments: This step is not applicable. "A" RBCCW Pump is NOT in operation.

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STEP **24** _X_ Performance Steps: Open HDR A HX-B OUT, RB-4.1C

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-B OUT, RB-4.1C, and observes the associated red light is lit.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **25** ___ Performance Steps: Monitor header "A" flow on FI-6035 to ensure it remains stable.

GRADE ___ ___ Standards: *Examinee monitors flow on FI-6035 and observes stable flow at approximately 6300 gpm.*

Cue:

Comments:

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STEP **26** _X_ Performance Steps: Close HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee closes HDR A HX-A OUT, RB-4.1A and observes the associated green light is lit.*

Cue:

Comments: When RB-4.1A is closed, the malfunction to foul the "B" RBCCW Heat Exchanger will be inserted.

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STEP **27** ___ Performance Steps: If required, Refer to OP 2326A, Service Water System, and isolate service water flow to "A" RBCCW Heat Exchanger.

GRADE ___ ___ Standards: *Examinee determines that the "A" RBCCW Heat Exchanger should NOT be isolated at this time.*

Cue: **If the examinee asks the US whether to isolate the "A" RBCCW Heat Exchanger at this time, inform him/her that the heat exchanger will be isolated later by the work control group.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **28** _X_ Performance Steps: When rising temperature on "A" header RBCCW or lowering Service Water flow through "B" RBCCW Heat Exchanger is observed, inform the US.

GRADE ___ _X_ Standards:
- *Examinee observes rising "A" RBCCW header temperature and/or lowering Service Water flow through the "B" RBCCW Heat Exchanger and informs the US.*
- *Examinee will recommend swapping back to the "A" RBCCW Heat Exchanger.*

Cue:
- **If asked, as the PEO, report 60 psid across the "A" RBCCW Heat Exchanger.**
- **When examinee reports a rising temperature in "A" RBCCW header or lowering Service Water flow through the "B" RBCCW Heat Exchanger, ask for a recommendation, if NOT already provided.**
- **When examinee provides the recommendation to swap back to the "A" RBCCW Heat Exchanger, direct the examinee to proceed.**

Comments: The examinee may NOT notice the malfunction until the RBCCW HX TEMP HI annunciator alarms. This does NOT constitute a failure.

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STEP **29** _X_ Performance Steps: Open HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-A OUT, RB-4.1A, and observes the associated red light is lit.*

Cue:

Comments:

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STEP **30** _X_ Performance Steps: Open HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-A OUT, RB-4.1A, and observes the associated red light is lit.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **31** _X_ Performance Steps: Open HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-A OUT, RB-4.1A, and observes the associated red light is lit.*

Cue:

Comments:

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STEP **32** _X_ Performance Steps: Open HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-A OUT, RB-4.1A, and observes the associated red light is lit.*

Cue:

Comments:

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STEP **33** _X_ Performance Steps: Open HDR A HX-A OUT, RB-4.1A.

GRADE ___ _X_ Standards: *Examinee opens HDR A HX-A OUT, RB-4.1A, and observes the associated red light is lit.*

Cue:

Comments:

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STEP **34** ___ Performance Steps: Monitor header "A" flow on FI-6035 to ensure it remains stable.

GRADE ___ ___ Standards: *Examinee monitors flow on FI-6035 and observes stable flow at approximately 6300 gpm.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S7 TITLE: Placing "B" RBCCW Pump and Heat Exchanger in Service and Removing "A" RBCCW Pump and Heat Exchanger

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STEP **35** _X_ Performance Steps: Close HDR A HX-B OUT, RB-4.1C

GRADE ___ _X_ Standards: *Examinee closes HDR A HX-B OUT, RB-4.1C, and observes the associated red light is lit.*

Cue:

Comments:

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

STOP TIME: _____
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VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S7 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes ____ No **X**

Validated Time (minutes): 30

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-S7

Initiating Cues:

- You are the SPO.
- Preventive Maintenance is scheduled on the "A" RBCCW Pump and Heat Exchanger.
- The US directs you to place the "B" RBCCW pump and "B" RBCCW HX in service and to remove the "A" RBCCW pump and "A" RBCCW HX from service per OP 2330A, sections 4.2 (Pump first) and OP 2326A section 4.9.
- I will act as the US/PEO as needed

Initial Conditions:

- "A" & "C" RBCCW Pumps and Heat Exchangers are in service
- Bus 24E is aligned to Bus 24C.
- "B RBCCW Pump breaker (A504) racked up.
- The SIAS/LNP Actuation Signal HS 6119D (A504) is in the BLOCK position.
- The "B" RBCCW HX is presently being used for minimum flow for "A" Service Water header.
- All other plant conditions are normal.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Change the Alarm Setpoint of the SJAE RM 5099**

ID Number: JPM-S8 Revision: 0

Provide all handouts at the start of the JPM

II. Initiated:

Daniel A. Pantalone — 01/24/05

Developer — Date

III. Reviewed:

Duffy Ashey — 1/26/05

Technical Reviewer — Date

IV. Approved:

N/A

User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05 Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
01/19/2005 (DAP)	Developed new JPM.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-S8 Rev. 0

Task Title: **Operate the SJAE RM. (RM-5099)**

System: Radmonitor

Time Critical Task: Yes ____ No X

Validated Time (minutes): 20

Task No.(s): NUTIMS # 073-01-050

Applicable To: SRO X RO X PEO ____

K/A No.: 071 A4.25 K/A Rating: 3.2/3.2

Method of Testing:

Simulated Performance: ____ Actual Performance: X

Location:

Classroom: ____ Simulator: X In-Plant: ____

Task Standards: The examinee will adjust the setpoint of the Steam Jet Air Ejector Radmonitor as specified on the attached SP2833-007.

Required Materials (procedures, equipment):

- SP2833-007 "SJAE Radmonitor MR 5099 & PPC Alarm Setpoint Change Request.
- OP2383C Rev.012-02 "Radiation Monitor Alarm Setpoint Control.

General References:

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-S8 Rev. 0

Initiating Cues: The US has assigned you to change the setpoint of the SJAE Radmonitor (RM5099) in accordance with OP 2383C, "Radiation Monitor Alarm Setpoint Control", section 4.1.

Initial Conditions: The latest RCS samples have indicated a rise in RCS gaseous isotopic results. Due to this rise in fission product gasses, chemistry has requested a change to the SJAE RM (RM 5099) setpoint.

- Chemistry has provided an approved "SJAE Radmonitor Setpoint Change Request, SP-2833-007.
- The Radiation Monitor System Engineer has referenced EN-21235 and verified that the new setpoint does not exceed the maximum setpoint.
- The S/G Blowdown Radmonitor (RM-4262) is in service.

Simulator Requirements:

- Any IC in Mode 1 or 2 with the Steam Jet Air Ejector System in service.
- Ensure the S/G Blowdown Radmonitor is in service.
- Insert Remote Function, RMR37A (RI5099)to allow changing the alarm setpoint of RM-5099 from RC-14.

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S8 TITLE: **Change the Setpoint of the SJAE RM 5099**

START TIME: _____

STEP **1** _X_ Performance Steps: OBTAIN keys for the following (Operations key locker):
- RI-5099 "NORM/SUPV." switch on RC-14D.
- RADMONITOR BYPASS, HS 5099E" switch on RC-14A.

GRADE ___ _X_ Standards: *The examinee retrieves the two keys from the key locker by C-21 and takes them around to RC-14.*

Cue:

Comments:

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STEP **2** _X_ Performance Steps: As appropriate, PLACE "RADMONITOR BYPASS, HS 5099E" switch to "RM 5099 OUT" or "BOTH OUT."

GRADE ___ _X_ Standards: *The examinee inserts the key into HS5099E, and places HS5099E switch on RC-14A to "RM 5099 OUT" position.*

Cue:

Comments:

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STEP **3** ___ Performance Steps: IF "RADMONITOR BYPASS, HS 5099E" switch is in "BOTH OUT," Refer To REMODCM IV.C.1 and DETERMINE applicability.

GRADE ___ ___ Standards: *HS 5099E is not in "BOTH OUT" per the previous step. The REMODCM IV.C.1 does not have to be referenced.*

Cue:

Comments: This step is not applicable.

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STEP **4** _X_ Performance Steps: PLACE RI-5099 "NORM/SUPV." switch to "SUPV."

GRADE ___ _X_ Standards: *The examinee inserts the key into the "NORM/SUPV." switch, selects "SUPV", and observes the red SUPV MODE light is lit.*

Cue:

Comments:
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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S8 TITLE: **Change the Setpoint of the SJAE RM 5099**

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STEP **5** X Performance Steps: Using SP 2833-007, "SJAE Radiation Monitor RM 5099 & PPC Alarm Setpoint Change Request," ENTER new alarm setpoint.

a. PRESS "CH 1."
b. PRESS "0," "0," "9."
c. PRESS "ITEM."
d. Enter new value using scientific notation.
e. PRESS "ENTER"
f. PRESS "CH.1."

GRADE ___ X Standards: *At RC-14D, the examinee performs the following steps on the RM-5099 insert.*

___ X - *PRESS "CH 1."*
___ X - *PRESS 099 and observes 009 on the display.*
___ X - *PRESS the "ITEM." Button and observe the button is lit when pressed and light goes out when button is released.*
___ X - *Press 412+02 and observes 4.12 E2 on the display.*
___ X - *PRESS "ENTER" and observe 4.12 E+2*
___ X - *PRESS "CH1 and observe present radiation monitor reading of 9.80 E+1.*

Cue: - Provide the examinee with SP 2833-07, "SJAE Radiation Monitor RM 5099 & PPC Alarm Setpoint Change Request."

Comments: If an error is made while entering information into the RM-5099 Insert, the CLEAR button may be used to start over.

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STEP **6** X Performance Steps: PRESS C/S" button and VERIFY button is lit.

GRADE Standards: *The examinee:*

___ X - *presses the C/S button*
___ ___ - *verifies the button lights.*

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S8 TITLE: **Change the Setpoint of the SJAE RM 5099**

STEP **7** _X_ Performance Steps: WHEN 1 minute has elapsed, VERIFY the following:
- C/S" light is not lit
- LED channel activity resumes
- CH 1" light is lit

IF "CH 1" light is not lit and "ERROR" light is lit, NOTIFY I&C Department.

GRADE ___ _X_ Standards:
- *Examinee waits one minute and observes the C/S light go out.*

___ ___
- *Examinee observes normal operation of the RM-5099 Insert.*

___ ___
- *Examinee verifies the CH 1 light is lit.*

Cue:

Comments:

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STEP **8** _X_ Performance Steps: IF desired to display alarm setpoint, PERFORM the following:
a. PRESS CH 1."
b. ENTER item number 0," 0," 9."
c. PRESS ITEM."
d. PRESS CH. 1."

GRADE ___ Standards: *At RC-14D, the examinee performs the following steps on the RM-5099 insert.*

___ _X_
- *Press CH 1 and observes no change.*

___ _X_
- *Press 009 and observe 009 on the display.*

___ _X_
- *Press the ITEM button and observe the button is lit when pressed and light goes out when button is released.*

___ _X_
  - o *Observe display change to current alarm setpoint of 4.12 E+2.*

___ _X_
- *Press CH1 and observe current radiation monitor reading of 9.80 E+1.*

Cue: It is desired.

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S8 TITLE: **Change the Setpoint of the SJAE RM 5099**

STEP **9** _X_ Performance Steps: PLACE RI-5099 NORM/SUPV." switch to NORM."

GRADE ___ _X_ Standards: *The examinee places RI-5099 Normal/Supv. Key switch in the NORMAL position and observes the red SUPV MODE light go out.*

Cue:

Comments:

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STEP **10** _X_ Performance Steps: As appropriate, PLACE RADMONITOR BYPASS, HS 5099E" switch to RM 4262 OUT" or NORMAL."

GRADE ___ _X_ Standards: *The examinee locates HS 5099E key switch, and places it in the NORMAL position.*

Cue:

Comments:

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STEP **11** ___ Performance Steps: RETURN keys (Operations key locker).

GRADE ___ ___ Standards: *The examinee returns the two keys to the Ops Key Locker.*

Cue:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-S8 TITLE: **Change the Setpoint of the SJAE RM 5099**

STEP 12 X Performance Steps: Using SP 2833-007, "SJAE Radiation Monitor RM 5099 & PPC Alarm Setpoint Change Request," ENTER new values into PPC as follows:

a. OPEN PPC screen N16 - CHEM.
b. ENTER value for steam jet air ejector instrument background.
c. ENTER value for SJAE DP.
d. ENTER value for RCS total gas activity.
e. ENTER value for RM 5099 response factor.
f. EXIT application.

GRADE ___ X Standards: *Using SP 2833-007, "SJAE Radiation Monitor RM 5099 & PPC Alarm Setpoint Change Request," the examinee performs the following.*

___ X *a. Opens PPC screen N16-CHEM on any available PPC Console.*
___ X *b. Enters the instrument background value of 124 cpm.*
___ X *c. Enters SJAE DP value of 0.35 Inches of Water.*
___ X *d. Enters the Total Gaseous Activity value of 1.113 uCi/CC.*
___ X *e. Enters the RM-5099 Response Factor value of 7.450E-7 cpm/uCi/cc.*
___ X *f. Exits the application by pressing the ENTER key and closing the present PPC page.*

Cue:

Comments: When the appropriate data has been entered into the PPC, the JPM is complete. Exiting the application is NOT a requirement for completion of this JPM.

~~~~~~

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

STOP TIME: _____
~~~~~~

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-S8 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No _____

Validated Time (minutes): _____

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM Number: JPM-S8 Rev. 0

Initiating Cues: The US has assigned you to change the setpoint of the SJAE Radmonitor (RM5099) in accordance with OP 2383C, "Radiation Monitor Alarm Setpoint Control", section 4.1.

Initial Conditions: The latest RCS samples have indicated a rise in RCS gaseous isotopic results. Due to this rise in fission product gasses, chemistry has requested a change to the SJAE RM (RM 5099) setpoint.

- Chemistry has provided an approved "SJAE Radmonitor Setpoint Change Request, SP-2833-007.
- The Radiation Monitor System Engineer has referenced EN-21235 and verified that the new setpoint does not exceed the maximum setpoint.
- The S/G Blowdown Radmonitor (RM-4262) is in service.

3/14/05

PLANT

JPMS.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Removing Section 201B-2, of Battery Charger 201B , From Service**

ID Number: JPM-P1 Revision: 0

II. Initiated:

Daniel A. Pantalone — 03-03-05
Developer — Date

III. Reviewed:

R. J. Ashey — 3/7/05
Technical Reviewer — Date

IV. Approved:

N/A — N/A
User Department Supervisor — Date

3/9/05
Nuclear Training Supervisor — Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
10/15/2004 (DAP)	Developed new JPM.	0
03/03/2005 (DAP)	Changed to use Charger 201B-1 instead of 201A-1. 201A-1 has too many obstructions in the plant. 201B-1 has no physical obstructions.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM- P-1 Rev. 0

Task Title: **Removing Section 201B-2, of Battery Charger 201B , From Service**

System: 125 Volt Vital DC

Time Critical Task: Yes ____ No X

Validated Time (minutes): 12

Task No.(s): NUTIMS # 063-01-093 (MP2 063-11-01-04)

Applicable To: SRO X RO X PEO X

K/A No.: 063 K1.03 K/A Rating: 2.9/3.5

Method of Testing:

Simulated Performance: X Actual Performance: ____

Location:

Classroom: ____ Simulator: ____ In-Plant: X

Task Standards:	At the completion of this JPM, battery charger section 201B-2 will be removed from service in accordance with 2345C section 4.14
Required Materials (procedures,equipment):	OP-2345C section 4.14
General References:	OP-2345C

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM- P-1 Rev. 0

Initiating Cues: The US has directed you to remove battery charger section 201B-2 from service, in preparation for preventive maintenance.

Initial Conditions: Battery Charger 201B is operating with both sections in service.

Simulator Requirements: N/A

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM- P-1 TITLE: **Removing Section 201B-2, of Battery Charger 201B, From Service**

START TIME: _____

STEP **1** ___ Performance Steps: ENSURE total charger "DC OUTPUT" current less than 400 amps.

GRADE ___ ___ Standards: *Examinee observes "DC OUTPUT" ammeter on the Termination Cabinet.*

Cue: **Amperage is < 400 amps.**

Comments:

~~~~~~

STEP **2** ___ Performance Steps: PLACE "MODE SEL." Switch in "DIS. B"

GRADE ___ ___ Standards:
- *Examinee indicates the following on the "Termination Cabinet":*
  - *the "MODE SEL." switch is being turned to the "DIS B." position.*
  - *the "BATTERY CHARGER 201B-2 ALARMS DISABLED" red light lights*
  - *the "CURRENT SHARING DISABLED" red light lights.*

Cue:
- "MODE SEL." Switch is in the "DIS B." position
- *"BATTERY CHARGER 201B-2 ALARMS DISABLED" red light is lit.*
- *"CURRENT SHARING DISABLED" red light is lit..*

Comments:
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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM- P-1 TITLE: **Removing Section 201B-2, of Battery Charger 201B, From Service**

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STEP **3** _X_ Performance Steps: PLACE breaker "201B AC INPUT TO BATTERY CHARGER 201B-2" in OFF.

GRADE ___ _X_ Standards: *Examinee locates the correct breaker on the Termination Cabinet and simulates pulling down on the breaker.*

Cue: Breaker is in "OFF"

Comments:

~~~~~~

STEP **4** _X_ Performance Steps: PLACE breaker "201B-2 DC OUTPUT TO BATTERY BUS BREAKER D0202" in OFF.

GRADE ___ _X_ Standards: *Examinee locates the correct breaker on the Termination Cabinet and simulates pulling down on the breaker.*

Cue: Breaker is in "OFF"

Comments:

~~~~~~

STEP **5** _X_ Performance Steps: PLACE breaker "BATTERY CHARGER 201B-2 AC INPUT" in OFF.

GRADE ___ _X_ Standards: *Examinee locates the correct breaker on the "Battery Charger 201B-2" cabinet and simulates pulling down on the breaker.*

Cue: Breaker is in "OFF"

Comments:
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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM- P-1 TITLE: **Removing Section 201B-2, of Battery Charger 201B, From Service**

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STEP **6** _X_ Performance Steps: PLACE breaker "BATTERY CHARGER 201B-2 DC OUTPUT" in OFF.

GRADE ___ _X_ Standards: *Examinee locates the correct breaker on the "Battery Charger 201B-2" cabinet and indicates pulling down on the breaker.*

Cue: Breaker is in the OFF Position

Comments:

~~~~~~

STEP **7** ___ Performance Steps: ENSURE total charger "DC OUTPUT" current less than 400 amps.

GRADE ___ ___ Standards: *Examinee locates the "D.C. OUTPUT – DC AMPERES" meter on either the 201B-2 panel or the Termination Cabinet.*

Cue: DC Amps is < 120

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-P-1 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 12

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: JPM-P1

Initiating Cues: The US has directed you to remove battery charger section 201B-2 from service, in preparation for preventive maintenance.

Initial Conditions: Battery Charger 201B is operating with both sections in service.

SPARE

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Loss of SDC / Vent the 'A' LPSI Pp.**

ID Number: JPM-P2 Revision: 0

II. Initiated:

Daniel A. Pantalone — Developer — 01/25/05 Date

III. Reviewed:

Duffy Ashey — Technical Reviewer — 1/26/05 Date

IV. Approved:

N/A — User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05 Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
01/18/2005 (DAP)	Developed new JPM	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM- P2 Rev. 0

Task Title: **Loss of SDC / Vent the 'A' LPSI Pp.**

System: ECCS

Time Critical Task: Yes ____ No X

Validated Time (minutes): 13

Task No.(s): NUTIMS # 000-14-021 (000-016-04-04)

Applicable To: SRO X RO X PEO X

K/A No.: 005 A2.03 K/A Rating: 2.9/3.1

Method of Testing:

Simulated Performance: X Actual Performance: ____

Location:

Classroom: ____ Simulator: ____ In-Plant: X

Task Standards:	At the completion of this JPM, the examinee will have simulated venting the "A" LPSI Pp. per AOP 2572, "Loss of SDC".
Required Materials (procedures, equipment):	AOP 2572 "Loss of SDC", step 4.15
General References:	AOP 2572

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-P2 Rev. 0

Initiating Cues: The US has directed you to vent the 'A' LPSI Pump per AOP 2572 "Loss of Shutdown Cooling", step 4.15.

Initial Conditions: The plant is at the center line of the hot leg to replace an RCP seal. The 'A' LPSI Pp started to show indications of air binding.

- The 'A' LPSI Pp is secured.
- RCS level has been raised and the SDC suction piping evacuated.
- The pump is placed in a safe condition and is ready to vent.
- RCS temperature is approximately 85°F.

Simulator Requirements: N/A

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-P2 TITLE: **Loss of SDC / Vent the 'A' LPSI Pp.**

START TIME: _____

STEP **1** _X_ Performance Steps: CONNECT vent hose to SI-21A, ("A" LPSI Pp. vent).

GRADE ___ Standards: *Examinee does the following:*

_X_	1.	*Locates SI-21A on the "A" LPSI Pp. casing*
___	2.	*Verifies SI-21A is closed.*
_X_	3.	*Locates the "vent pipe fitting" in the vent rig box, located at the base of the LPSI Pp.*
_X_	4.	*Locates the "pipe wrench" in the vent rig box, located at the base of the LPSI Pp.*
_X_	5.	*Simulates removing the "pipe cap" at the end of the extension pipe of SI-21A.*
_X_	6.	*Simulates installing the "female Camlock vent pipe fitting" on the extension pipe of SI-21A*
_X_	7.	*Simulate connecting the Tygon Hose to the "vent pipe fitting".*
___	8.	*Simulate running and securing the Tygon Hose to a floor drain.*

Cue:
3. **see comments below**
5. **pipe cap is removed**
6. **vent fitting is installed**
7. **see comments below**
8. **Tygon hose is secured**

If the fitting will NOT couple to the Tygon tube when the examinee simulates connecting the Tygon tube to the vent fitting, tell the examinee that it doesn't couple correctly.

Comments: There may be several vent fittings in the box at the base of the LPSI Pump. Visually determine that the fitting selected by the examinee will couple up to the fitting on the end of the Tygon tube.

The examinee should then find the correct fitting.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-P2 TITLE: **Loss of SDC / Vent the 'A' LPSI Pp.**

STEP **2** _X_ Performance Steps: Slowly open SI-21A ("A" LPSI Pp vent)

GRADE ___ _X_ Standards: *Examinee simulates cracking open SI-21A.*

Cue: **Inform the examinee that large air bubbles are visible in the water.**

Comments:
- The examinee should indicate that s/he would continue to vent until air free water is observed.
- The note in the procedure defines air-free as bubbles the size of bubbles in carbonated water or soda.

~~~~~~

STEP **3** _X_ Performance Steps: Close SI-21A when air-free water is observed.

GRADE ___ _X_ Standards: *The examinee simulates closing SI-21A when soda water like bubbles are observed.*

Cue: **Soda water like bubbles are observed.**

Comments: Ensure the examinee understands the information given in the note. This may be done when the examinee asks if the bubbles are like those in soda water. If the examinee gives no indication, ask the examinee to describe the conditions that would indicate the pump is properly vented.

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM- P2 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 13

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM Number: JPM-P2 Rev. 0

Initiating Cues: The US has directed you to vent the 'A' LPSI Pump per AOP 2572 "Loss of Shutdown Cooling", step 4.15.

Initial Conditions: The plant is at the center line of the hot leg to replace an RCP seal. The 'A' LPSI Pp started to show indications of air binding.

- The 'A' LPSI Pp is secured.
- RCS level has been raised and the SDC suction piping evacuated.
- The pump is placed in a safe condition and is ready to vent.
- RCS temperature is approximately 85°F.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Cross-Tie Station Air With Unit 3 to Supply Unit 2 Instrument Air**

ID Number: JPM-P3 Revision: 0

II. Initiated:

R. J. Ashey — Developer — 10/25/04 Date

III. Reviewed:

Technical Reviewer — 1/26/05 Date

IV. Approved:

User Department Supervisor — Date

Nuclear Training Supervisor — 1/26/05 Date

SUMMARY OF CHANGES

A/I & Date	DESCRIPTION	REV/CHANGE
10/25/2004	Developed new JPM.	0

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-P3 Rev. 0

Task Title: **Cross-Tie Station Air With Unit 3 to Supply Unit 2 Instrument Air**

System: Instrument Air

Time Critical Task: Yes ____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS # 079-01-030

Applicable To: SRO X RO X PEO X

K/A No.: 079 A2.01 K/A Rating: 2.9/3.2

Method of Testing:

Simulated Performance: X Actual Performance: ____

Location:

Classroom: ____ Simulator: ____ In-Plant: X

Task Standards:	The examinee has successfully performed the alignment to allow Unit 3 to supply Unit 2 with Station Air and to permit Station Air to supply Instrument Air.
Required Materials (procedures,equipment):	EOP 2525, Standard Post Trip Actions, Rev. 20, Contingency Action 19.1
General References:	EOP 2525, Standard Post Trip Actions, Rev. 20, Contingency Action 19.1

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

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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Number: JPM-P3 Rev. 0

Initiating Cues: The Unit Supervisor has directed you to cross-tie Station Air from Unit 3 to allow Station Air to supply Instrument Air in accordance with EOP 2525, Contingency Action step 19.1.

Initial Conditions:

- Unit has tripped from 100% power.
- The RSST failed resulting in a loss of off site power.
- Both Emergency Diesels have energized their respective buses.
- Instrument Air header pressure is reading 85 psig and lowering.
- Unit 3 has informed the Unit Supervisor that they are able to supply Station Air to Unit 2.
- SA-10.1, Station Air to Instrument Air Cross-Tie, is open.

Simulator Requirements: N/A

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-P3 TITLE: Cross-Tie Station Air With Unit 3 to Supply Unit 2 Instrument Air

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START TIME: _____

STEP **1** ___ Performance Steps: Ensure SA-26, SA-11.1 Outlet Bypass, is open.

GRADE ___ ___ Standards: *Examinee checks SA-26, SA-11.1 Outlet Bypass, open attempting to rotate the valve handwheel in the counter clockwise direction.*

Cue: **SA-26 is open.**

Comments: SA-26 is located on the 14'6' elevation of the Turbine Building near the Instrument Air Dryer.

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STEP **2** _X_ Performance Steps: Open SA-12, SA-11.1 Inlet Bypass.

GRADE ___ _X_ Standards: *Examinee opens SA-12, SA-11.1 Inlet Bypass, by rotating the valve handwheel in the counter clockwise direction.*

Cue: **SA-12 is open when the examinee simulates opening the valve.**

Comments: SA-12 is located on the 14'6' elevation of the Turbine Building near the Instrument Air Dryer.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-P3 TITLE: Cross-Tie Station Air With Unit 3 to Supply Unit 2 Instrument Air

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STEP **3** _X_ Performance Steps: Open SAS-379, Bypass Valve for SAS-EFV-20

GRADE ___ _X_ Standards: *Examinee opens SAS-379, Bypass Valve for SAS-EFV-20, by rotating the valve handwheel in the counter clockwise direction.*

Cue: **SAS-379 is open when the examinee simulates opening the valve.**

Comments: SAS-379 is located on the 14'6" elevation of the Turbine Building, on the stairway by the "C" Instrument Air Compressor.

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

STEP **4** _X_ Performance Steps: Open SAS-6, Station Air Cross-Tie to Unit 3.

GRADE ___ _X_ Standards: *Examinee opens SAS-6, Station Air Cross-Tie to Unit 3, by rotating the valve handwheel in the counter clockwise direction.*

Cue: **SAS-6 is open when the examinee simulates opening the valve.**

Comments: SAS-6 is located in the CFP Building Truck Bay.

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-P3 TITLE: Cross-Tie Station Air With Unit 3 to Supply Unit 2 Instrument Air

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STEP **5** _X_ Performance Steps: Request Unit 3 Operations to slowly open 3-SAS-V900, Service air Cross-Tie to Unit 2.

GRADE ___ _X_ Standards: *Examinee will either simulate contacting the Unit 3 Control Room or have the Unit 2 Control Room contact the Unit 3 Control Room, to have 3-SAS-V900 opened by a Unit 3 operator.*

Cue: **Unit 3 reports that an operator is on his way to open 3-SAS-V900.**

Comments: The JPM is complete when the examinee requests 3-SAS-V900 to be opened by a Unit 3 operator.

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-P3 Rev. 0

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: **Local Manual Operation of the "A" Atmospheric Dump Valve**

ID Number: JPM-093 Revision: 9

II. Initiated:

R. J. Ashey — Developer — 1/18/05 Date

III. Reviewed:

Technical Reviewer — 1/26/05 Date

IV. Approved:

N/A
User Department Supervisor — Date

Nuclear Training Supervisor — 1/27/05 Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-093 Rev. 9

Task Title: **Local Manual Operation of the "A" Atmospheric Dump Valve**

System: Main Steam

Time Critical Task: Yes ____ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS# 035-01-029

Applicable To: SRO X RO X PEO X

K/A No. 041 A2.03 K/A Rating 2.8/3.1

Method of Testing:

Simulated Performance: X Actual Performance: ____

Location:

Classroom: ____ Simulator: ____ In-Plant: X

Task Standards:	Examinee has taken local manual control of the "A" ADV and placed in to 25% open per EOP 2541, Appendix 36, ADV Local Operation.
Required Materials (procedures, equipment):	EOP 2541, Appendix 36, ADV Local Operation
General References:	EOP 2541, Appendix 36, ADV Local Operation

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

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

JOB PERFORMANCE MEASURE WORKSHEET

Initiating Cues:

- The US directs you to take local manual control of the "A" Atmospheric Dump Valve and open the valve to 25% in accordance with EOP 2541 Appendix 36.

Initial Conditions:

- A loss of I.A. has occurred in the plant.
- The plant has tripped and the decision has been made to use the "A" Atmospheric Dump Valve to remove decay heat.

Simulator Requirements: N/A

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

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

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-093 TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

START TIME: _____

STEP 1 ___ Performance Steps: Check local ambient air temperatures less than 120°F.

GRADE ___ ___ Standards: *Examinee observes local thermometer (TI-8130C) in the East 38'6" penetration room to determine ambient air temperature is less than 120°F.*

TI- 8130C is located just inside the inner door to the right.

Cue: **If asked, as Health Physics, state that radiological conditions are normal.**
Room temperature is as indicated.

Comments:

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STEP 2 ___ Performance Steps: If local operation of the ADV is desired, refer to Attachment 36-A, Establishing Local ADV Control.

GRADE ___ ___ Standards: *Examinee obtains Attachment 36-A, Establishing Local ADV Control.*

Cue: **If requested, provide a copy of Attachment 36-A Establishing Local ADV Control.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-093 TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 3 ___ Performance Steps: Establish communications with the Control Room.

GRADE ___ ___ Standards: *Examinee states that he would obtain a headset and extension, goes to the blowdown room (East 38'6";AB), plugs into maintenance jack on the stanchion next to the blowdown H.X. and gets in contact with the control room.*

Cue: **Communications are established.**

Comments:

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STEP 4 ___ Performance Steps: Ensure ADV Manual isolation valve, MS-3A is open.

GRADE ___ ___ Standards: *Examinee climbs to the ADV platform and observes ADV isolation valves, MS-3A,is fully open by stem indication and/or by stating he/she would attempt to turn the handwheel in the counter clockwise direction.*

Cue: **MS-3A is full open.**

Comments:

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STEP 5 X Performance Steps: Remove the "Vent Valve" assembly from the instrument rack located below the ADV.

GRADE ___ X Standards: *Examinee obtains the 'Vent Valve" assembly by operating the quick disconnect fitting.*

"Vent Valve" assembly is located below the valve on a gauge board and is labeled "Vent Valve".

Cue:

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-093 TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 6 ___ Performance Steps: Ensure the "Vent Valve" assembly is closed.

GRADE ___ ___ Standards: *Examinee verifies the vent valve is in the closed position by turning the handwheel in the clockwise direction until it stops.*

Cue:

Comments:

~~~~~~

STEP 7 X Performance Steps: Close the instrument air isolation valve to the ADV.

GRADE ___ X Standards: *Examinee locates the I.A. isolation for 2-MS-190A (located on the Ctmt wall behind the ADV) and states that he/she would close it position by turning the handwheel in the clockwise direction until it stops.*

Cue:
- **Ask examinee how s/he would reach the air supply to MS-190A. The examinee should use the ladder that is chained to the cat walk.**
- **I.A. isolation to 2-MS-190A is closed.**

Comments:

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STEP 8 X Performance Steps: Remove the vent cap from the quick disconnect at the top of the ADV operator diaphragm.

GRADE ___ X Standards: *Examinee states that he/she would remove the cap from the quick disconnect at the top of the valve operator diaphragm.*

Cue: **The vent cap is removed.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-093 TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 9 X Performance Steps: Insert the "Vent Valve" assembly into the quick disconnect.

GRADE ___ X Standards: *Examinee inserts the "Vent Valve" assembly into the quick disconnect on top of the ADV operator diaphragm.*

Cue: **The vent valve is inserted.**

Comments:

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STEP 10 X Performance Steps: Open the vent valve assembly to ensure air has been vented off the ADV operator.

GRADE ___ X Standards: *To vent off the air from the ADV operator, the examinee opens the vent valve on the Vent Valve assembly by turning the handwheel in the clockwise direction until it stops.*

Cue: **The air from the operator has been vented off.**

Comments:

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STEP 11 ___ Performance Steps: Ensure that the ADV is closed.

GRADE ___ ___ Standards: *Examinee observes ADV position indicator and determines that the ADV is closed.*

Cue: **The ADV is closed.**

Comments:

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PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-093 TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 12 X Performance Steps: Remove the handwheel restraining device.

GRADE ___ X Standards: *Examinee states that he would remove the restraining device*

Cue: **Restraining device is removed.**

Comments:

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STEP 13 X Performance Steps: Position the ADV as directed by the Control Room.

GRADE ___ X Standards: *Examinee states that he/she would rotate the handwheel in the **clockwise** direction to position the valve to 25% open by the local stem position indication.*

Cue: **The ADV is 25% open.**

Comments:

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Comments: When it has been simulated that manual control has been taken and the valve is 25% open, then this JPM is complete.

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM -093 Rev. 9

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No **X**

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: 093

Initiating Cues:

- The US directs you to take local manual control of the "A" Atmospheric Dump Valve and open the valve to 25% in accordance with EOP 2541 Appendix 36.

Initial Conditions:

- A loss of I.A. has occurred in the plant.
- The plant has tripped and the decision has been made to use the "A" Atmospheric Dump Valve to remove decay heat.