


JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Emergency Boration (Alternative - Using HPSI header and RWST)

ID Number: JPM-200

Revision: 1

II. Initiated:



F. Nygard
Developer

07/14/00

Date

III. Reviewed:



Technical Reviewer


7/16/00

Date

IV. Approved:

User Department Supervisor

Date



Nuclear Training Supervisor

7/16/00

Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-200 Rev. 1

Task Title: Emergency Boration (Alternative - Using HPSI header and RWST)

System: CVCS

Time Critical Task: Yes _____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS 000-04-099

Applicable To: SRO X RO X PEO _____

K/A No.:	004-A4.18	K/A Rating:	4.3./4.1
	024-Aa1.17		3.9./3.9
	024-AA1.22		3.2./3.2

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 Emergency Borated using the Charging pumps, HPSI header and the RWST as specified in EOP 2540-RC2

Required Materials EOP 2540-RC2
(procedures,equipment):

General References: EOP 2540-RC2

****** 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-200

Rev. 1

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to Emergency Borate in accordance with EOP 2540 Success Path RC-2

Initial Conditions:

- The plant experienced a spurious trip with 5 stuck rods.
- The US has completed EOP 2525 and is now in EOP 2540
- The US has directed you to Emergency borate per Success Path RC-2

Simulator Requirements:

Initialize at a normal post-trip IC and perform the following:

- Initialize in IC-24 (100% power)
- Override BAST level meters to indicate a low level
 - I/O override (CV) LI-206 @8%
 - I/O override (CV) LI-208 @6%
- Enter Malfunction RD0203 RD0215, RD0227, RD0243, RD0260 to cause 5 Rods to Stick out on a subsequent trip.
- Trip the plant and stabilize parameters.
- Stop all 3 charging pumps at C02/3
- Close CH-429 and override (CV) HS-2524 OPN OFF
- Snap shot as necessary for additional exams


***** 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-200

TITLE: **Emergency Boration (Alternative - Using HPSI header and RWST)**

START TIME: 

STEP 1 _ Performance Steps: ENSURE that the normal charging discharge path is aligned:

- a. ENSURE that CH-429 charging header isolation valve is open
- b. ENSURE that at least one of the following is open:
 - CH-518, charging header isolation valve
 - CH-519, charging header isolation valve

GRADE ____ Standards: *Examinee attempts to open CH-429 and determines that will not open. He then notifies the US (OP2260 step 1.21.4) and proceeds to the Contingency Actions step 2.1*

Cue: When notified that CH-429 will not open, and examinee does not offer going to contingency action 2.1, then ask for recommendation. If examinee does not recommend going to contingency action 2.1, then terminate the JPM.

Comments:

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## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-200

TITLE: Emergency Boration (Alternative - Using HPSI header and RWST)

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STEP 2         Performance Steps: Align charging pumps to HPSI header "A" as follows:

X

- a.     Open charging pump discharges to HPSI header, CH-340 and 2-CH-440 (local)
- b.     Close CH-429, charging header isolation valve
- c.     Ensure that at least one of the following HPSI loop injection valves is open:
  - SI-617
  - SI-627
  - SI-637
  - SI-647

GRADE         X Standards:     *Examinee directs the PEO to open CH-340 and CH-440, determines that CH-429 is still closed and observes that the 4 HPSI loop injection valves are open*

Cue:     When CH-340 and 440 have been opened, report as the PEO that they are open.

Comments:     Use simulator remote CVR01 to open CH-340 and 440

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-200

TITLE: Emergency Boration (Alternative - Using HPSI header and RWST)

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STEP **3**      ☐ Performance Steps: Refers to EOP 2541 Appendix 3

GRADE ☐      ☐ Standards:      *Obtains Appendix 3*

Cue:

Comments:

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STEP **4** ☐ Performance Steps: Refers to Appendix 3, Attachment 3-A

GRADE ☐ ☐ Standards: *Obtains Appendix 3, Attachment 3-A*

Cue:

Comments:

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STEP **5**      X Performance Steps: Determines the boric acid tanks are depleted and goes to step 2.

GRADE ☐      X Standards:      *Proceeds to step 2*

Cue:

Comments:      *Should notifies US that BASTs are not available*

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-200

TITLE: Emergency Boration (Alternative - Using HPSI header and RWST)

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- STEP 6           Performance Steps: If boric acid storage tanks are not available, initiate emergency boration from the RWST as follows:
- |             |    |                                                                                                       |
|-------------|----|-------------------------------------------------------------------------------------------------------|
| <u>X</u>    | a. | Open RWST isolation, 2-CH-192                                                                         |
| <u>    </u> | b. | Ensure RWST to charging suction, 2-CH-504, open                                                       |
| <u>    </u> | c. | Ensure VCT makeup bypass, 2-CH-196, closed                                                            |
| <u>X</u>    | d. | Close VCT outlet isolation, 2-CH-501                                                                  |
| <u>    </u> | e. | If CH-500, letdown divert handswitch is in the 'VCT' position, Place the valve to the 'RWS' position. |
| <u>X</u>    | f. | Ensure at least one charging pumps is operating                                                       |
| <u>    </u> | g. | Check charging flow is greater than 40 GPM                                                            |

- GRADE           X Standards:
- |             |    |                                                        |
|-------------|----|--------------------------------------------------------|
| <u>    </u> | a. | Open RWST isolation, 2-CH-192                          |
| <u>    </u> | b. | Observes that RWST to charging suction, 2-CH-504, open |
| <u>    </u> | c. | Observes that VCT makeup bypass, 2-CH-196, closed      |
| <u>    </u> | d. | Close VCT outlet isolation, 2-CH-501                   |
| <u>    </u> | e. | If in auto, no action required                         |
| <u>X</u>    | f. | Starts at least one charging pumps.                    |
| <u>    </u> | g. | Check charging flow is greater than 40 GPM             |

Cue:

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

STOP TIME:

### VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-200

Rev. 1

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

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

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

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

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

Validated Time (minutes): 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: 200

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to Emergency Borate in accordance with EOP 2540 Success Path RC-2

Initial Conditions:

- The plant experienced a spurious trip with 5 stuck rods.
- The US has completed EOP 2525 and is now in EOP 2540
- The US has directed you to Emergency borate per Success Path RC-2

## JOB PERFORMANCE MEASURE APPROVAL SHEET {PRIVATE}

JPM Title: **LPSI Pump Operability Test - Alternate Path**

ID Number:

~~Fred Hygard~~ <sup>5h</sup>  
JPM-209

Revision: 1

II. Initiated:

Fred Nygard  
F. Nygard

F. Nygard

Developer

7/14/00

Date \_\_\_\_\_

III. Reviewed:

Robert R. Cunningham

Technical Reviewer


7/16/20

Date \_\_\_\_\_

IV. Approved:

User Department Supervisor

Date \_\_\_\_\_

  
Nuclear Training Supervisor

Nuclear Training Supervisor

7/16/00

Date \_\_\_\_\_

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-209                      Rev. 1

Task Title: **LPSI Pump Operability Test**

System: LPSI

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

Validated Time (minutes): 15

Task No.(s): NUTIMS #006-02-026

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

K/A No. 006-000-A3.02            K/A Rating 4.1/4.1

### Method of Testing:

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

### Location:

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

Task Standards:            At the completion of this JPM, the examinee has successfully completed Facility I LPSI pump surveillance on "A" LPSI pump.

Required Materials            SP 2604C  
(procedures,            calculator  
equipment):            OPS Form 2604C-1

General References:            SP 2604C, Section 4.1 (Rev. 9, Ch. 3)  
                                         DC 4 Rev 5 section 1.1

\*\*\*\* 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-209 Rev. 1

- Initiating Cues:
- You are the PPO.
  - The Unit Supervisor has directed you to perform surveillance SP 2604C on the "A" LPSI pump.
  - An IST is not required.
  - The examiner will act as the Unit Supervisor and/or PEO.

- Initial Conditions:
- The plant is at 100% power, NOT/NOP.
  - No equipment is out of service.
  - OPS Form 2604C-1 has been authorized for release.

- Simulator Requirements:
- Initialize at a normal 100% power IC.
  - On OPS Form 2604C-1, authorize and date form.

\*\*\*\* **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 must not be performed in conjunction with JPM-101 or 102.



## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

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

STEP 1           Performance Steps: If SDC is not in operation, ensure all "LPSI INJ VLVS" closed:

- "LOOP 1A, SI-615"
- "LOOP 1B, SI-625"
- "LOOP 2A, SI-635"
- "LOOP 2B, SI-645"

GRADE           Standards: *Examinee determines that SDC is not in operation and checks closed the listed LPSI injection valves by observing their green lights only are lit on C-01.*

Cue:

Comments:

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STEP 2 Performance Steps: Ensure "A" LPSI pump suction is aligned to RWST as follows:

- a. Suction from SDC, 2-SI-441 is locked closed.
- b. Suction from RWST, 2-SI-444 is locked open

GRADE Standards: *Examinee states they would have PEO locally check valve positions in "A" Safeguards Room.*

Cue: **When asked as PEO, state valves are in their desired positions.**

Comments: Examinee may also check position indication of 2-SI-441 on C-01.

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## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

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STEP 3           Performance Steps: Ensure the following are open:

- "PP MINFLOW STOP, SI-659"
- "PP MINFLOW STOP, SI-660"
- "A" LPSI pump min. flow recirc. stop, 2-SI-449

GRADE                Standards:      *Examinee performs the following:*

- *Observes SI-659 & SI-660 are open by their red lights only lit on C-01.*
- *Directs/requests PEO to locally check open 2-SI-449.*

Cue: Report that 2-SI-449 is locked open.

Comments:

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STEP 4 Performance Steps: Ensure an operator stationed in the "A" Safeguards Room to monitor initial pump start.

GRADE Standards: *Examinee directs/requests a PEO to go to "A" Safeguards Room and prepare for "A" LPSI pump start.*

Cue: I am in the "A" Safeguards Room. Oil levels are good and I am standing by for pump start.

Comments:

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## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

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STEP 5      \_\_\_ Performance Steps: During pump operation, observe the following:

- No abnormal noise or vibration (local)
- Normal bearing oil levels (local)
- Normal motor amperage

GRADE \_\_\_      Standards: *Examinee directs the PEO to check for abnormal noise or vibration (local), and normal bearing oil levels (local). Examinee observes normal motor amperage.*

Cue: *If asked, report that oil levels are good and/or that you (as the PEO) are ready to monitor pump operation.*

Comments: The intent of this procedure step is to station a PEO.

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STEP 6 ___ Performance Steps: If in MODE 1, 2, or 3 with Prz pressure \geq 1850 PSIA, CHECK no "1/5" lights or bistable "TRIP" lights lit for SIAS, CIAS or EBFAS on Facility 1 and Facility 2 actuation and sensor channels

GRADE ___ Standards: *Observes no "1/5" lights or bistable "TRIP" lights lit for SIAS, CIAS, or EBFAS on ESF Actuation Cabinets 5 and 6 and all Sensor Cabinets.*

Cue:

Comments:

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**PERFORMANCE INFORMATION**

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

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STEP 7      X Performance Steps: Place "TEST PERMISSIVE SWITCH, S-501" in "TEST SIAS" on Actuation Cabinet 5.

GRADE \_\_\_\_      X Standards:      *Places TEST PERMISSIVE SWITCH, S-501 in "TEST SIAS" on Actuation Cabinet 5.*

Cue:

Comments:

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STEP 8 X Performance Steps: Place "TEST GROUP SWITCH, S-502" in "GROUP 4" on Actuation Cabinet 5.

GRADE ____ X Standards: *Places TEST GROUP SWITCH, S-502 in "GROUP 4" on Actuation Cabinet 5.*

Cue:

Comments:

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## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

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- STEP 9      X Performance Steps: If using sensor cabinet "A", perform the following:
- Place "TRIP TEST, S-102" switch in "CONT PRESS SIAS/CIAS/EBFAS/MSI" on Sensor Cabinet "A" ("C").
  - Press and hold bistable BA101 "TRIP TEST" button
  - Check actuation module, AM517 "1/5" light is lit (ESF actuation Cabinet 5).
  - To initiate start signal, Press actuation module AM517 "1/5" "TEST" button. lit (ESF actuation Cabinet 5).
  - Release " bistable BA101 "TRIP TEST"

- GRADE          X Standards:
- *Places TRIP TEST, S-102 switch in "CONT PRESS SIAS/CIAS/EBFAS/MSI" on Sensor Cabinet "A"*
  - *Presses and holds "TRIP TEST" button on bistable BA101 on Sensor Cabinet "A".*
  - *Checks actuation module, AM517 "1/5" light is lit on Actuation Cabinet 5.*
  - *Presses "1/5" "TEST" button on actuation module AM517.*
  - *Releases "TRIP TEST" button on bistable BA101 . on Sensor Cabinet "A".*

Cue:

Comments: These steps result in a pump start. The procedure has an option to perform a similar series of operations on cabinet C if two operators are available. Only one operator is available for this JPM, therefor cabinet A must be used. More than one attempt at pushing test buttons on module AM 517 is acceptable. All bullets are critical except for checking 1/5 light lit.

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PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

- STEP 10 Performance Steps: Compare "A" LPSI pump automatic start data to "Acceptance Criteria limits in DATA Section 1 and if the following are observed initial DATA Section 1 for satisfactory pump start:
- Actuation module AM517Red "TRIP" light
 - "A" LPSI pump

GRADE Standards: *Examinee observes the following and initials form:*
- *Red "TRIP" light is lit on actuation module AM517.*
- *"A" LPSI pump has started by its red light only lit and/or amperage indication on C-01.*

Cue:

Comments: Examinee may not have time to complete this step depending on the timing of cue in the nest JPM step..

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- STEP 10     X Performance Steps: Stop "A" LPSI pump.

GRADE          X Standards:     *Examinee stops LPSI pump by taking handswitch to start and then to the stop position and then verifies that pump is off by observing green light only and/or amps at 0. It is acceptable for the examinee to make more than one attempt at stopping the pump.*

Cue:     **To cause the performance step action, call as the PEO and say that the pump is making a loud grinding noise and has high vibration.**

Comments:     Examinee should report status to US. DC 4 section 1.1 "If ..unexpected results occur... stop the procedure, ensure equipment or system is placed in a stable and safe condition...."

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PERFORMANCE INFORMATION

PM ID NUMBER: JPM-209

TITLE: LPSI Pump Operability Test- Alternate Path

STEP 11 X Performance Steps: Return ESF panels as follows.

- 1) Press "ACTUATION RESET SIAS" button (ESF Actuation Cabinet 5)
- 2) Press bistable, BA101, red "TRIP" Light
- 3) Place "TRIP TEST, S-102" switch in "OPERATE".
- 4) Place TEST PERMISSIVE SWITCH, S-501 in "OPERATE" (ESF Actuation Cabinet 5).
- 5) Places TEST GROUP SWITCH, S-502 in "GROUP 1" (ESF Actuation Cabinet 5).
- 6) Resets "ATI FAULT" alarm by pressing ATI reset button (ESF Actuation Cabinet 5).

GRADE ____ X Standards: *Examinee performs the following:*

- 1) *Presses SIAS RESET button on Actuation Cabinet*
- 2) *Presses bistable, BA101, red Trip Light*
- 3) *Places TRIP TEST, S-102 switch in "OPERATE"*
- 4) *Places TEST PERMISSIVE SWITCH, S-501 in "OPERATE".*
- 5) *Places TEST GROUP SWITCH, S-502 in "GROUP 1".*
- 6) *Resets "ATI FAULT" alarm by pressing ATI reset button*

Cue: **As US, direct that ESF be restored per step 4.1.18.**

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-209

Rev. 1

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

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

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

For examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.

If task is Time Critical, it **MUST** be completed within the specified time to achieve a satisfactory grade.

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

Validated Time (minutes): 15

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

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

Areas for Improvement:



## EXAMINEE HANDOUT

JPM ID Number: 209

Initiating Cues:-You are the PPO.

- The Unit Supervisor has directed you to perform surveillance SP 2604C on the "A" LPSI pump.
- An IST is not required.
- The examiner will act as the Unit Supervisor and/or PEO.

Initial Conditions:-The plant is at 100% power, NOT/NOP.

- No equipment is out of service.
- OPS Form 2604C-1 has been authorized for release.

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Initiate Boron Precipitation Control (Alternate Method)**

ID Number: JPM-203

Revision: 1

II. Initiated:

F. Nygard  
Developer

7/14/2000  
Date

III. Reviewed:

Technical Reviewer

Date \_\_\_\_\_

IV. Approved:

User Department Supervisor

Date \_\_\_\_\_

Nuclear Training Supervisor

Date \_\_\_\_\_

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-203                      Rev. 1

Task Title: Initiate Boron Precipitation Control (Alternate Method)

System: ECCS

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

Validated Time (minutes): 15

Task No.(s): NUTIMS #000-05-222

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

K/A No.: 000-011-EA1.13        K/A Rating: 4.1/4.2

### 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 initiated boron precipitation control using a HPSI pump for hot leg injection via the charging and auxiliary spray piping.

### Required Materials (procedures,equipment):

- EOP 2541 Appendix 18

General References:        EOP 2541, Appendix 18

### **\*\*\*\* 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-203

Rev. 1

### Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to initiate boron precipitation control per EOP 2541 Appendix 18.
- The examiner will act as the PEO or US, as required.

### Initial Conditions:

- The plant experienced a large-break LOCA.
- EOP 2525 was completed and the crew transitioned to EOP 2532 approximately 9 hours ago.
- All RCPs are off.
- SRAS has initiated.

### Simulator Requirements:

Initialize simulator with the following conditions:

- Post-large break LOCA condition (RC03A at 100% or equivalent)
- 2-CS-13.1A/B closed
- RCPs off
- 2-SI-659/660 are in "OPER"
- CETs are < 345 degF
- Rx vessel level < 43%
- Pressurizer level < 20%

I/O open (prevent closing) SI-635 by RH HS 3635 CLS Off

I/O Annunciator C01-C8 Hi LPSI Amps OFF

Place simulator in "Freeze."

When examinee is ready, place simulator in "Run."

**Prepare to I/O 'A' LPSI pump Amps immediately after the LPSI pump is started at JPM step 8.**

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

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

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

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START TIME:  

STEP 1                      Performance Steps: Go To section 18-A

GRADE \_\_\_\_                      Standards:     *Examinee observes that both Facility 1 and 2 are available and that PPC CETs are < 345 degF . Interprets step 1 criteria for going to section 18-B is not met. Interprets criteria for going to section 18-A is met.*

Cue:

Comments:

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STEP 2 Performance Steps: Stop both LPSI pumps

GRADE ____ Standards: *Examinee observes that both LPSI pumps are off by green lights lit and amps at 0.*

Cue:

Comments: LPSI pumps tripped due to SRAS.

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STEP 3                      Performance Steps: Ensure that Facility 2 HPSI pump is operating.

GRADE \_\_\_\_                      Standards:     *Examinee observes "C" (or "B" if aligned) HPSI pump red light lit, amperage indicated and discharge pressure on C-01.*

Cue:

Comments:

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203 TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

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STEP 4 Performance Steps: Close SI-635 LPSI injection valve and based on it not closing, goes to section 18-B..

GRADE ___ Standards: *Examinee attempts to close SI-635 by taking the handswitch to the closed position and determines that it will not close based on red light only remaining lit.*

X *Takes the contingency action of going to section 18-B.*

—

Cue:

Comments: At this point the examinee should transition to *section 18-B*. If the wrong path, is chosen and initiated, the examinee has failed the JPM.

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STEP 5 Performance Steps: If Both Facility 1 and 2 are available and CET temperature is greater than 345°F, perform the following...

GRADE \_\_\_ Standards: *Examinee determines this step is not applicable and proceeds to step 1.b.*

Cue:

Comments:

~~~~~

STEP 6 — Performance Steps: Ensure Facility 1 HPSI pump operating.

GRADE ___ Standards: *Examinee observes "A" (or "B" if aligned) HPSI pump red light lit, amperage indicated and discharge pressure ~1250 psig on C-01.*

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control
(Alternate Method)

Cue:

Comments:

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STEP 7      X Performance Steps: Ensure two of the following valves are fully closed and two are fully open:

- 2-SI-615
- 2-SI-625
- 2-SI-635
- 2-SI-645

GRADE \_\_\_\_      X Standards:      *Determines that SI 635 is open and that one of the remaining 3 valves must be shut. Selects a valve and takes handswitch for either SI-615, SI-625 or SI-645 to "OPEN" (override SIAS), then to "CLOSE" and observes green lights only lit for these LPSI injection valves on C-01.*

Cue:

Comments:

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STEP 8 X Performance Steps: Ensure "A" LPSI pump operating and "B" LPSI pump is off.

GRADE ____ X Standards: *Examinee observes "A" and "B" LPSI pumps not operating by observing green lights lit and zero amperage on C-01. Examinee then places "A" LPSI pump switch to "STOP" (override SRAS), then to "START" and observes red light lit and amperage indicated, as well as pump discharge pressure rising for "A" LPSI pump.*

Cue:

Comments: LPSI pumps tripped due to SRAS. More than one start attempt is acceptable.
Simulator operator: After 'A' LPSI pump is started, I/O 'A' LPSI pump amps to 48 amps.

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control
(Alternate Method)

STEP 9 Performance Steps: Stop Facility 1 HPSI pump.

GRADE Standards: *Examinee places "A" (or "B" if aligned) HPSI pump switch to "START" (override SIAS), then to "TRIP" and observes green light lit and zero amperage indicated, as well as pump discharge pressure lowering for HPSI pump.*

Cue:

Comments: More than one stop attempt is acceptable.

~~~~~

STEP 10       X Performance Steps: Close Facility 1 HPSI injection valves 2-SI-617, 627, 637, 647.

GRADE           X Standards:     *Examinee takes handswitches for Facility 1 HPSI injections (2-SI-617, 627, 637, 647) to "OPEN" (override SIAS), then to "CLOSE" and observes green lights only lit on C-01.*

Cue:

Comments:

~~~~~

STEP 11 X Performance Steps: Unlock and Open charging pump discharge to HPSI header valves, 2-CH-340 and 2-CH-440.

GRADE X Standards: *Examinee directs PEO to open the mentioned valves and may also direct an HP Tech. to go with them due to potential High Radiation levels.*

Cue: When open, report back as PEO that both valves are open as requested.

Comments: To open both 2-CH-340 and 2-CH-440, use CVR01.

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control
(Alternate Method)

STEP 12 Performance Steps: Check open charging header isolation valve,
2-CH-429.

GRADE Standards: *Examinee observes red light lit for 2-CH-429 on C-02.*

Cue:

Comments:

~~~~~

STEP 13      X Performance Steps: Open pressurizer aux. spray isolation, 2-CH-517.

GRADE         X Standards:      *Examinee places switch for 2-CH-517 to "OPEN" and  
observes red light only lit on C-02.*

Cue:

Comments:

~~~~~

STEP 14 X Performance Steps: Close loop 1A and 2A charging isolations, 2-CH-518
and 2-CH-519.

GRADE X Standards: *Examinee obtains keys and places 2-CH-518 and 2-CH-
519 key-lock switches in "CLOSE" and observes green
lights only lit for both valves on C-02.*

Cue:

Comments:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203


TITLE: Initiate Boron Precipitation Control
(Alternate Method)

STEP 15 X Performance Steps: Start Facility 1 HPSI pump.

GRADE ___ X Standards: *Examinee places "A" (or "B" if aligned) HPSI pump switch to "START" and observes red light lit and amperage indicated, as well as pump discharge pressure rising for the respective pump.*

Cue:

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

STOP TIME: 

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-203

Rev. 1

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

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

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: 203

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to initiate boron precipitation control per EOP 2541 Appendix 18.
- The examiner will act as the PEO or US, as required.

Initial Conditions:

- The plant experienced a large-break LOCA.
- EOP 2525 was completed and the crew transitioned to EOP 2532 approximately 9 hours ago.
- All RCPs are off.
- SRAS has initiated.

JOB PERFORMANCE MEASURE APPROVAL SHEET {PRIVATE}

JPM Title: Energize Bus 24C From the RSST

ID Number: JPM-048

Revision: 6

II. Initiated:

Fredt. Nygaard

Fred Nygard

Developer

6/1/2000

Date _____

III. Reviewed:

Robert Cummings

Technical Reviewer

6/15/00

Date _____

IV. Approved:

User Department Supervisor

Date _____


Nuclear Training Supervisor

~~Nuclear Training Supervisor~~

6/20/06

Date _____

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

Examinee: _____

JPM Number: JPM-048

Rev. 6

Task Title: **Energize Bus 24C From the RSST**

System: 4,160 Volt AC

Time Critical Task: Yes No **X**

Validated Time (minutes): 15

Task No.(s): NUTIMS #062-01-330

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

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

Method of Testing:

Simulated Performance: Actual Performance: **X**

Location:

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

Task Standards: At the completion of this JPM, the examinee has energized Bus 24C from the RSST.

Required Materials OP 2343
(procedures,
equipment):

General References: OP 2343, Section 4.15 (Rev. 18, Ch. 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

PM Number: JPM-048

Rev. 6

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

- Initial Conditions:
- The plant has experienced a spurious trip.
 - Bus 24C did not transfer.
 - "A" DG is out for PM's.
 - There are no faults on the bus or the RSST.
 - The crew has completed EOP 2525 and 2526 and has transitioned out of the EOPs

- Simulator Requirements:
- Initialize at 100% power IC and enter the following:
- "A" DG OOS w/ air starts closed (EGR12) and output breaker racked out (EGR17).
 - ED17A and trip plant.
 - Perform EOP 2525 to stabilize plant.
 - Reset "A" DG trouble alarm (EGR16) and Freeze.

Place yellow tag on "A" DG breaker switch (A312) on C-08.

When examinee is ready, place simulator to Run.

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

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

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

START TIME: _____

STEP 1 ___ Performance Steps: Ensure RSST, 15G-22S, is energized from the 345 KV bus.

GRADE ___ Standards: *Examinee performs the following:*
- *Observes RSST is energized by observing voltmeter on C-08 for the RSST to 4160V.*

Cue:

Comments: If examinee does not state this, question as to what they are observing. Examinee may choose to take A304's handswitch to "TRIP" to clear the amber light. This is acceptable.

~~~~~

STEP 2    \_\_\_    Performance Steps:    Ensure the following breakers are open:  
•    24A/24C tie breaker 24C-1T-2 (A304)  
•    24C/24E tie breaker 24C-2T-2(A305)  
•    D/G output breaker 15G-12U-2 (A312)

GRADE    \_\_\_    Standards:    *Examinee performs the following:*  
-    *Verifies 24A/24C tie breaker (A304) is open by its green and amber lights lit on C-08.*  
-    *Opens 24C/24E tie breaker (A305) by taking its handswitch to "TRIP" and observing its green light only lit on C-08.*  
-    *Observes "A" D/G output breaker (A312) is open.*

Cue:

Comments:    If examinee does not state this, question as to what they are observing. Examinee may choose to take A304's handswitch to "TRIP" to clear the amber light. This is acceptable.

~~~~~


PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

STEP 3 ___ Performance Steps: If this section is not being performed to support an EOP, ENSURE A303, "22C/22E FDR BKR", is open.."

GRADE ___ Standards: *Examinee opens A303.*

Cue: If examinee asks if this procedure is being performed to support an EOP, reply as the US that it is not.

Comments:

~~~~~

STEP 4    \_\_\_    Performance Steps:    Ensure the following load breakers on bus 24C are open.

- A306, "Service Water Pump A"
- A307, "AFW Pump A"
- A308 "HPSI Pump A"
- A309 "LPSI Pump A"
- A310 "Containment Spray Pump A"
- A311 "RBCCW Pump A"

GRADE    \_\_\_    Standards:    *Examinee performs the following:*

- *Places "A" S.W. pump breaker in pull-to-lock.*
- *Verifies "A" AFW pump breaker is open by its green light only lit, with no auto aux feed signal present (C-04 alarm).*
- *Verifies "A" HPSI, "A" LPSI, and "A" CS pumps' breakers are open by their green lights only lit, with no auto start signal.*
- *Places "A" RBCCW pump breaker in pull-to-lock.*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

STEP 5 Performance Steps: Ensure "RSS FDR BKR 24C/24D, CS2/22S3-2-2 (A702)" is closed

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

Cue:

Comments:

~~~~~

STEP 6    X    Performance Steps:    Turn SYN SW, 22S3-24C-2 to "ON" and verify incoming voltage is normal.

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

Cue:

Comments:    If examinee does not state this, question as to what they are observing.

~~~~~

STEP 7 Performance Steps: Obtain bypass keys for ESAS bus 24C undervoltage from OPS key locker.

GRADE Standards: *Examinee obtains 4 keys for bypassing ESAS bus 24C from OPS key locker.*

Cue:

Comments:

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## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

---

STEP 8 X Performance Steps: Insert bypass keys into 4 ESAS undervoltage channels "UV BUS A3" and ROTATE to "INHIBIT" bypass position.

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

Cue:

Comments:

~~~~~

STEP 9 X Performance Steps: To reset bus 24C undervoltage actuation, press "UV" reset button on ESAS Actuation Cabinet 5.

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

Cue:

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

~~~~~

STEP 10     Performance Steps: IF no SIAS exists AND SIAS termination criteria is met, ENSURE SIAS is reset on ESAS Actuation Cabinet 5

GRADE         Standards: *Examinee verifies that SIAS is reset by observing no red lights on the SIAS actuation modules.*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

STEP 11 Performance Steps: If needed to override ESF actuated equipment,
OPERATE applicable handswitches to open breakers.

GRADE Standards: *Examinee informs US of this step.*

Cue:

Comments: No action is required for this step

~~~~~

STEP 12    X    Performance Steps:    Close "RSS SPLY BKR, 22S3-24C-2 (A302)"

GRADE         X    Standards:    *Examinee closes A302 by taking its handswitch to "CLOSE"  
and observing its red light only lit.*

Cue:

Comments:

~~~~~

STEP 13 Performance Steps: Check normal voltage on incoming voltmeter.

GRADE Standards: *Examinee checks voltage indication on Bus 24C voltmeter.*

Cue:

Comments:

~~~~~

### PERFORMANCE INFORMATION

PM ID NUMBER: JPM-048

TITLE: Energize Bus 24C From the RSST

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STEP 14    Performance Steps:    Turn "SYN SW, 22S3-24C-2" to "OFF".

GRADE    Standards:    *Examinee turns synchroscope switch 22S3-24C-2 to "OFF" on C-08.*

Cue:

Comments:    Annunciator for the synchroscope switch on C-08 will clear.

~~~~~

STEP 15 Performance Steps: Reset ESAS bus 24C undervoltage sensor trips on all 4 ESAS channels

GRADE Standards: *Examinee resets bus 24C undervoltage sensor trips on each channel by pressing the red light (pushbutton0 on the sensor module.*

Cue:

Comments:

~~~~~

STEP 16    Performance Steps:    If ESAS undervoltage sensor trips reset, ROTATE "UV BUS A#" bypass keys to "OPER" and REMOVE keys.

GRADE    Standards:    *Examinee takes the respective "UV Bus A3" bypass keys to "OPER" and removes them.*

Cue:

Comments:

~~~~~

Comments: Closing Bus 24C feeder breakers is not required.
After this step is completed, the JPM is considered complete.

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-048

Rev. 6

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: 048

Initiating Cues:

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

Initial Conditions:

- The plant has just experienced a spurious trip.
- Bus 24C did not transfer.
- "A" DG is out for PM's.
- There are no faults on the bus or the RSST.
- The crew has completed EOP 2525 and 2526 and has transitioned out of the EOPs

JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: Pumping the Containment Sump -Alternate Path

ID Number: JPM-211

Revision: 0

II. Initiated:


F. Nygard
Developer

6/14/2000
Date

III. Reviewed:


Randal E. Parquette
Technical Reviewer

6-14-00
Date

IV. Approved:

User Department Supervisor

Date


Nuclear Training Supervisor

6/20/00
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

Examinee: _____

JPM Number: JPM-211

Rev. 0

Task Title: **Pumping the Containment Sump**

System: Station Sumps and Drains

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

Validated Time (minutes): 5

Task No.(s): NUTIMS #092-01-021

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

K/A No. 000-009-EA1.02 K/A Rating 3.8/3.8

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 pumped the containment sump until receipt of the CTMT NORM SUMP DIS PRESS HI" annunciator and then stop the pump(s) and report the outboard isolation valve failed to close.

Required Materials

(procedures,
equipment):

OP 2336
ARP 2590E (BB-21)

General References:

OP 2336A, Section 4.4 (Rev. 15)
ARP 2590E (BB-21) Rev 007-01

******* 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

PM Number: JPM-211 Rev. 0

- Initiating Cues:
- The Unit Supervisor has directed you to pump the Containment sump.
 - The examiner will act as the Unit Supervisor.

- Initial Conditions:
- The containment sump level has slowly risen due to a known secondary system leak.
 - All other operating conditions are normal.

- Simulator Requirements: Initialize at any IC with:
- Containment sump at 75-80% (Set "CHMSUMP" to 2.2 E3 for ~ 79%)
 - Malfunction WD02B to fail SSP-16.2 open.
 - No SIAS or CIAS in progress
 - When directed after JPM step 2 Actions, I/O ANN C06/7 BB-21 "ON" and be prepared to delete the I/O. "(CTMT NORM SUMP DIS PRESS HI")

****** 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 must not be performed in conjunction with JPM-046.

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-211

TITLE: Pumping the Containment Sump -Alternate Path

START TIME: _____

STEP 1 X Performance Steps: Start "CTMT SUMP PP A (B)" by placing control switch to "START".

GRADE X Standards: *Examinee starts "A" and/or "B" containment sump pump(s) by taking the handswitch(es) to "START" position on C-06 and observing the red light(s) only lit.*

Cue:

Comments: Both pumps may be used.

~~~~~

STEP 2     Performance Steps: Ensure "CTMT SUMP ISOLATION INBOARD, SSP 16.1" and "CTMT SUMP ISOLATION OUTBOARD, SSP-16.2" open automatically.

GRADE         Standards: Examinee observes both SSP-16.1 and SSP-16.2 fully open by their red lights only lit on C-06.

Cue: In preparation for next step, wait until sump level has decreased to between 30 and 40% and then, I/O ANN C06/7 BB-21 "ON" (CTMT NORM SUMP DIS PRESS HI"). Be prepared to delete the I/O when the examinee takes action in the next step.

Comments: If examinee does not state this, question as to what they are monitoring.

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-211

TITLE: Pumping the Containment Sump -Alternate Path

STEP 3 X Performance Steps: Place "CTMT SUMP PP A (B)" control switch(es) to "STOP".

GRADE X Standards: *Examinee observes annunciator C06/7 BB-21 and takes action to stop the containment sump pump. The examinee may take immediate action to stop the pump and then refer to the ARP or may refer to the ARP and then stop the pump. Examinee observes the green light(s) only lit for pumps on C-06.*

Cue:

Comments: Stopping the containment sump pump(s) is the critical component of this step.

~~~~~

STEP 4     Performance Steps: Ensure "CTMT SUMP ISOLATION INBOARD, SSP 16.1" and "CTMT SUMP ISOLATION OUTBOARD, SSP-16.2" close automatically.

GRADE         Standards: *Examinee observes that SSP-16.1 fully closes by its green light only lit, but SSP-16.2 does not close by its red light only still lit on C-06.*

Cue:

Comments: After taking the first action of the ARP for BB-21, the examinee should return to OP2336A and complete step for ensuring the sump isolation valves close. If examinee does not state this, question as to what they are monitoring.

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-211

TITLE: Pumping the Containment Sump -Alternate Path

STEP 5 X Performance Steps: Report failure of Containment isolation valve to close.

GRADE X Standards: *Examinee reports the failure of SSP-16.2 to automatically close to the US.*

Cue: As US Acknowledge report and state that action will be taken for Technical Specification...

Comments: Examinee may also state that entry into TSAS for Containment integrity would be required. **After this step is completed, the JPM is considered complete.**

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-211

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): 5

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: 211

Initiating Cues:

- The Unit Supervisor has directed you to pump the Containment sump.
- The examiner will act as the Unit Supervisor.

Initial Conditions:

- The containment sump level has slowly risen due to a known secondary system leak.
- All other operating conditions are normal.

JOB PERFORMANCE MEASURE APPROVAL SHEET

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

ID Number: JPM-097

Revision: 4

II. Initiated:

Fred Nygard
Fred Nygard
Developer

6/1/2000
Date

III. Reviewed:

Richard Cunningham
Technical Reviewer

6/15/00
Date

IV. Approved:

User Department Supervisor

Date

MLB
Nuclear Training Supervisor

6/20/00
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-097 Rev. 4

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

System: Reactor Protection System

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

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

Applicable To: SRO X RO X PEO _____

K/A No.: 015 A1.01 K/A Rating: 3.5/3.8

Method of Testing:

Simulated Performance: _____ Actual Performance: X

Location:

Classroom: _____ Simulator: X In-Plant: _____

Task Standards:

At the completion of this JPM, The examinee performs power range safety channel and ΔT power channel calibration for RPS Channel 'A' per SP 2601D

Required Materials

(procedures,equipment):

- SP 2601D
- Authorized surveillance OPS Form 2601D-1, partially completed as described in simulator setup

General References:

SP 2601D, Section 4.1, 4.2, 4.3 (Rev.14 , Ch 3.)

***** 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-097

Rev. 4

Initiating Cues:

- The Unit Supervisor has directed you to perform surveillance SP 2601D on Channel 'A' of the RPS starting at step 4.2.

Initial Conditions:

- The plant is at 100% power.
- An I&C tech has just completed the incore/excore detector calibration on Channel 'A' RPS.
- All systems are in a normal lineup.
- SP 2601D-1 has been authorized for release and another operator has completed section 4.1.

Simulator Requirements:

After initializing in IC-24 perform the following:

- check Tcold for all 4 channels and then set Ch A Tmax to the maximum Tcold plus .3°F
- Determine % power and then set NI PWR to -.3% from the calorimetric.
- Determine % power and then set Δ PWR to -.3% from the calorimetric.
- Perform SP 2601D Section 4.1 and fill out applicable sections of OPS Form 2601D-1

***** 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-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

START TIME: 0800

STEP 1 — Performance Steps: PLACE all OPERABLE RPS channel "METER INPUT" switches to "TCOLD."

GRADE ____ Standards: *Selects Tcold on meter input switch*

Cue: _____

Comments:

~~~~~

**STEP 2**           Performance Steps: OBSERVE all channel's "TCOLD" indication (DVM) and RECORD on applicable OPS Form:

- OPS Form 2601D-1
- OPS Form 2601D-2

GRADE \_\_\_\_\_ Standards: *Records Tcold on OPS Form 2601D-1*

Cue: \_\_\_\_\_

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power
Channel Calibration

- STEP 3 X Performance Steps: PERFORM the following for *each* OPERABLE RPS channel:
- a. PLACE "METER INPUT" switch to "TCOLD CAL" and OBSERVE indication (DVM).
 - b. IF "TCOLD CAL" indication is *not* within 0.2°F (plus or minus), of the *maximum* value obtained in step 4.2.2, Go To step 4.2.4.
 - c. IF "TCOLD CAL" indication is within 0.2°F (plus or minus), of the *maximum* value obtained in step 4.2.2, Go To step 4.2.5.

GRADE X Standards: *Places meter input switch to Tcold cal and determines that indication is not within .2°F and goes to step 4.2.4 (JPM step 9)*

Cue: 

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 4           Performance Steps:

### CAUTION

1. *No more than one* RPS channel must be tested at any one time.
2. If a TMLP pre-trip is present, to prevent a reactor trip, "TCOLD CALIBRATE" potentiometer must *not* be adjusted (changes the value of TMLP trip and pre-trip setpoints).

IF calibration of "TCOLD CAL" on any channel is required, PERFORM the following for respective channel:

- a. ENSURE *no* TMLP pre-trips are present.
- b. DISENGAGE locking device on "TCOLD CALIBRATE" potentiometer.

### NOTE

1. *Clockwise* rotation raises DVM reading.
2. *Counterclockwise* rotation lowers DVM reading.

X

- c. ADJUST "TCOLD CALIBRATE" potentiometer to obtain a "TCOLD CAL" indication (DVM), within 0.2°F (plus or minus), of the *maximum* value obtained in step 4.2.2.
- d. MONITOR "TCOLD CAL" indication (DVM) and ENGAGE locking device on "TCOLD CALIBRATE" potentiometer.
- e. IF "TCOLD CAL" indication changed while engaging locking device, REPEAT step

GRADE           X Standards:      *Adjusts Tcold cal to within .2°F of the maximum.*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 5 _ Performance Steps: RECORD "As Left" "Tcold CALIBRATE" potentiometer setting on applicable OPS Form:

- OPS Form 2601D-1
- OPS Form 2601D-2

GRADE _ Standards: *Records setting on OPS Form 2601D*

Cue: [REDACTED]

Comments:

~~~~~

STEP 6      \_      Performance Steps: POSITION OPERABLE RPS channel "METER INPUT" switches as desired.

GRADE    \_      Standards:      *No action required.*

Cue: [REDACTED]

Comments:      Examinee may reposition meter input switch

~~~~~

STEP 7 _ Performance Steps: PERFORM applicable action:

- IF all 4 RPS channels are OPERABLE, Go To Section 4.3.
- IF any 1 RPS channel is *not* OPERABLE, Go To Section 4.4

GRADE _ Standards: *Goes To section 4.3 (JPM step 13)*

Cue: [REDACTED]

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power  
Channel Calibration

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STEP 8      \_      Performance Steps: OBSERVE and RECORD the following "As Found" potentiometer settings for *all* OPERABLE RPS channels on OPS Form 2601D-1:

- "NUCLEAR PWR CALIBRATE"
- "ΔT PWR CALIBRATE"

GRADE \_\_\_\_      \_      Standards:      *Observes and records potentiometer settings on OPS Form 2601D-1*

Cue: 

Comments:

~~~~~

STEP 9 _ Performance Steps:


NOTE

Individual channels of RPS are INOPERABLE only during the time that they are bypassed for calibration. Entry into LCO 3.3.1.1 prior to calibrating the first channel and exiting the LCO following the completion of the last channel alleviates administrative burden on the Unit Supervisor.
At no time is more than one channel INOPERABLE as a result of this calibration.

Shift Manager or Unit Supervisor, PERFORM the following:

- LOG entry into Technical Specifications LCO, 3.3.1.1, ACTION 2 in Shift Manager's Log.
- RECORD date and time ACTION Statements entered on OPS Form 2601D-1 cover sheet.

GRADE ____ _ Standards: *Reads note and ensures SM or US makes entry in the SM Log*

Cue: 

Comments:

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 10      \_      Performance Steps:

**CAUTION**

*No more than one RPS channel must be tested at any one time.*

**NOTE**

1. Actions specified in the remainder of this section apply only to one channel of RPS.
2. If steady state equilibrium power level conditions change (greater than 1% of RATED THERMAL POWER) during the performance of this section, prior to performing the remaining channel adjustments, a new calorimetric value must be obtained.

OBSERVE PPC point, "CV4CAL" and CALCULATE calorimetric power (in percent) as follows: *Calorimetric power (%) = "CV4CAL" / 2,700 MWTH x 100*

GRADE \_\_\_\_      Standards:      *Reads caution and note and determines % power.*


Cue: 

Comments:

~~~~~

STEP 11 _ Performance Steps: RECORD calorimetric power (in percent) on OPS Form 2601D-1.

GRADE ____ Standards: *Records power on OPS Form 2601D*

Cue: 

Comments:

~~~~~



### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 12    X Performance Steps: OBTAIN necessary keys and PERFORM applicable actions to bypass the following:

- High Power Trip ("1")
- TMLP Trip ("7")
- Turbine Trip ("8")
- Local Power Density Trip ("11")

GRADE        X Standards:    *Inserts key and rotates it to bypass on TU 1, 7, 8, 11*

Cue: 

Comments:

~~~~~

STEP 13 Performance Steps: PLACE "METER INPUT" switch in "NUCLEAR PWR" position and RECORD "As Found" "Percent Nuclear Power" (DVM reading) on OPS Form 2601D-1.

GRADE Standards: *Records Percent Nuclear Power*

Cue: 

Comments:

~~~~~

STEP 14        Performance Steps: IF "As Found" "Percent Nuclear Power" DVM reading is within plus or minus 0.1% of plant calorimetric recorded in step 4.3.4, Go To step 4.3.9.

GRADE            Standards:    *Determines that Percent Nuclear Power is outside of plus or minus .1% and does not go to 4.3.9*

Cue: 

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 15 Performance Steps: DVM reading is *not* within plus or minus 0.1% of plant calorimetric recorded in step 4.3.4, PERFORM the following:

NOTE

- 1. *Clockwise* rotation lowers DVM reading.
- 2. *Counterclockwise* rotation raises DVM reading.

- a. MONITOR DVM reading and DISENGAGE locking device on "NUCLEAR PWR CALIBRATE" potentiometer.
- X b. Slowly ADJUST "NUCLEAR PWR CALIBRATE" potentiometer to obtain a DVM reading equal to the plant calorimetric recorded in step 4.3.4.

- c. MONITOR DVM reading and ENGAGE locking device on "NUCLEAR PWR CALIBRATE" potentiometer.

- d. IF DVM indication changed while engaging locking device, REPEAT step 4.3.8.

GRADE X Standards: *Adjusts nuclear power calibrate potentiometer to obtain a reading within plus or minus .1%*

Cue: 

Comments:

~~~~~

STEP 16         Performance Steps: OBSERVE and RECORD the following on OPS Form 2601D-1:

- "As Left" "NUCLEAR PWR CALIBRATE" potentiometer setting
- "As Left" "Percent Nuclear Power" indication (DVM reading)

GRADE              Standards:    *Records potentiometer and percent nuclear power on OPS Form 2601D-1*

Cue: 

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power
Channel Calibration

STEP 17 _ Performance Steps: CHECK "As Left" "NUCLEAR PWR" DVM reading
(step 4.3.9) within acceptance criteria range of plus or
minus 0.1% of plant calorimetric recorded in step 4.3.4
and INITIAL OPS Form 2601D-1.

GRADE ____ _ Standards: *Checks as left nuclear power DVM reading within plus or
minus .1% and initials form*

Cue: [REDACTED]

Comments:

~~~~~

STEP 18      \_      Performance Steps: PLACE "METER INPUT" switch to "ΔT PWR."

GRADE \_\_\_\_      \_      Standards:      *Places meter input switch to ΔT PWR.s*

Cue: [REDACTED]

Comments:

~~~~~

STEP 19 _ Performance Steps: OBSERVE the following and RECORD on OPS Form
2601D-1:

- *As Found "ΔT PWR" (DVM)*
- *"NUCLEAR PWR - ΔT PWR (%)"*

GRADE ____ _ Standards: *Records ΔT PWR and Nuclear PWR -ΔT PWR on OPS
Form 2601D*

Cue: [REDACTED]

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

STEP 20      \_    Performance Steps: "*As Found*  $\Delta T$  PWR" (DVM) recorded in step 4.3.12 is within plus or minus 0.1% of calorimetric recorded in step 4.3.4 *and* "NUCLEAR PWR -  $\Delta T$  PWR (%)" average indication is -0.5% to +0.5% (0.0%) Go To step 4.3.15.

GRADE \_\_\_\_ Standards: *If as found  $\Delta T$  PWR reading is within plus or minus 0.1%, goes to step 4.3.15*

Cue:

Comments:

**STEP 21**

- Performance Steps: IF "As Found  $\Delta T$  PWR" (DVM) recorded in step 4.3.12 is *not* within plus or minus 0.1% of calorimetric recorded in step 4.3.4 [JPM step 15] or "NUCLEAR PWR -  $\Delta T$  PWR (%)" average indication is *not* -0.5% to +0.5% (0.0%), PERFORM the following:
  - a. MONITOR " $\Delta T$  PWR" indication (DVM) and  
DISENGAGE locking device on " $\Delta T$  PWR CALIBRATE" potentiometer.
- **NOTE**
  1. Clockwise rotation raises DVM reading.
  2. Counterclockwise rotation lowers DVM reading.
- X b. Slowly ADJUST " $\Delta T$  PWR CALIBRATE"  
potentiometer to obtain " $\Delta T$  PWR" indication (DVM)  
within plus or minus 0.1% of calorimetric recorded  
in step 4.3.4.
- c. ENSURE average deviation on "NUCLEAR PWR -  
 $\Delta T$  PWR (%)" is -0.5% to +0.5% (0.0%).
- d. MONITOR " $\Delta T$  PWR" indication (DVM) and  
ENGAGE locking device on " $\Delta T$  PWR  
CALIBRATE" potentiometer.
- e. IF DVM indication changed while engaging locking  
device, REPEAT step 4.3.14.

GRADE X Standards: *Adjusts as necessary.*

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-097

TITLE: Power Range Safety Channel and Delta T Power Channel Calibration

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Cue: [REDACTED]

Comments:

~~~~~

STEP 22 _ Performance Steps: OBSERVE and RECORD "As Left" "ΔT PWR CALIBRATE" potentiometer setting on OPS Form 2601D-1

GRADE _ Standards: *Observes and records potentiometer setting*

Cue: [REDACTED]

Comments:

~~~~~

STEP 23      \_      Performance Steps: PERFORM applicable actions to restore the following to normal:

- High Power Trip ("1")
- TMLP Trip ("7")
- Turbine Trip ("8")
- Local Ppower Density Trip ("11")

GRADE    \_      Standards:      *restores trip units*

Cue: [REDACTED]

Comments:

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

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

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-097

Rev. 4

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: 097

### Initiating Cues:

- The Unit Supervisor has directed you to perform surveillance SP 2601D on Channel 'A' of the RPS starting at step 4.2.

### Initial Conditions:

- The plant is at 100% power.
- An I&C tech has just completed the incore/excore detector calibration on Channel 'A' RPS.
- All systems are in a normal lineup.
- SP 2601D-1 has been authorized for release and another operator has completed section 4.1.

## JOB PERFORMANCE MEASURE APPROVAL SHEET

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

ID Number: JPM-210

Revision: 1

II. Initiated:

  
Fred Nygard  
Developer

7/14/2000  
Date

III. Reviewed:

  
Technical Reviewer

7/16/00  
Date

IV. Approved:

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

\_\_\_\_\_  
Date

  
Nuclear Training Supervisor

7/16/00  
Date



## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-210

Rev. 1

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

System: RBCCW

Time Critical Task: Yes        No X

Validated Time (minutes): 15

Task No.(s): 000 04 220

Applicable To: SRO X RO X PEO       

K/A No.: 008 A2.02 K/A Rating: 3.2/3.5  
008 A4.01 3.3/3.1

### Method of Testing:

Simulated Performance:        Actual Performance: X

### Location:

Classroom:        Simulator: X In-Plant:       

### Task Standards:

At the completion of this JPM, The "B" RBCCW HX has been placed in service and the "A" RBCCW HX has been removed from service, except for securing SW to the "A" RBCCW HX.

### Required Materials

(procedures,equipment):

- OP 2330A
- OP-2326A

### General References:

- OP 2330A Section 4.2 (Rev19. , Ch.3 )
- OP-2326A Section 4.9 (Rev 20)

### **\*\*\*\* 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-210

Rev. 1

### Initiating Cues:

- You are the SPO.
- The Unit Supervisor has directed you to place the "B" RBCCW HX in service per OP 2330A section 4.2.2 and to remove "A" RBCCW HX from service.
- I will act as the US/PEO as needed.

### Initial Conditions:

- Maintenance must replace the head gasket on the "A" RBCCW HX due to a RBCCW leak
- "A" & "C" RBCCW HX's and pumps are in service
- Bus 24E is aligned to Bus 24C
- The "B" RBCCW HX has not been isolated or drained and has NOT been in fresh water layup.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

### Simulator Requirements:

- A normal RBCCW lineup ("A" & "C" pumps and heat exchangers in service)
- Bus 24E aligned to Bus 24C
- "B" RBCCW HX TCV failed closed (CCR03 @ 95)
- "A" & "C" RBCCW HX TCV's set to 75°F (CCR02 & CCR04 @ 75)
- Ensure 2-RB-251A is open

---

### **\*\*\* 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-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

START TIME: 

STEP 1      \_      Performance Steps: Refer To OP 2326A, "Service Water System" and  
ESTABLISH service water flow to "B" RBCCW HX.

GRADE \_\_\_\_      \_      Standards:      *Examinee refers to OP 2326A to establish service water  
flow to the "B" RBCCW HX.*

Cue:

Comments:      It is acceptable for the examinee to complete JPM steps 12 and 13 (from OP  
2330A) while waiting for the PEO to complete local valve alignments in OP  
2330A)

~~~~~

STEP 2 Performance Steps: IF "B" RBCCW heat exchanger was placed in fresh
water layup, request Chemistry Department SAMPLE
"B" RBCCW heat exchanger for chlorine prior to
placing in service [Ref. 6.18].

GRADE ____ Standards: *No action required.*

Cue: As listed in the initial conditions, the "B" RBCCW is not in fresh water
layup

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 3           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:      *Examinee requests/directs the PEO to ensure "B" RBCCW HX inlet and outlet X-ties, 2-SW-7A & -10A are closed*

Cue: **Report as the PEO that 2-SW-7A & -10A are already closed**

Comments:      2-SW-7A & -10A are already closed in the simulator setup.

~~~~~

STEP 4 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: *Examinee requests/directs the PEO to ensure the "B" RBCCW HX inlet and outlet X-ties, 2-SW-7B & -10B are open*

Cue: **Report as the PEO that 2-SW-7B & -10B are already open**

Comments: 2-SW-7B & -10B are already open in the simulator setup.

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

- STEP 5      \_      Performance Steps: IF "B" RBCCW heat exchanger was isolated and drained for maintenance or fresh water layup, PERFORM the following:
- a. OPEN "B" RBCCW heat exchanger SW inlet, 2-SW-8B.
  - b. FILL and VENT "B" RBCCW heat exchanger.

GRADE \_\_\_\_      \_      Standards:      *No action required.*

Cue: As given in the initial conditions, the "B" RBCCW heat exchanger was not isolated, drained or in fresh water layup..

Comments:

~~~~~

- STEP 6 _ Performance Steps: At "B" RBCCW heat exchanger temperature controller, ENSURE the following (TIC-6307):
- Mode switch in "A" (inside controller)
 - Temperature control knob set greater than 200°F

GRADE ____ _ Standards: *Examinee requests/directs the PEO to Ensure "B" RBCCW HX temperature controller is in "AUTO" and set to > 200°F.*

Cue: Temp. controller is in "AUTO" and set for > 200°F (failed closed) in the summer mode

Comments: **Initial simulator conditions have set CCR03 to 200°F (failed closed)**

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 7         Performance Steps: ENSURE "B" RBCCW heat exchanger temperature control is in *either* "SUMMER VALVE, 2-SW-8.1B" or "WINTER VALVE, 2-SW-246", as direct by Control Room (Panel-6307).

GRADE            Standards:      *Examinee requests/directs the PEO to Ensure "B" RBCCW HX temperature control is in "SUMMER"*

Cue: *If asked whether to use "SUMMER VALVE" or "WINTER VALVE" direct the examinee to use "SUMMER VALVE". As the PEO, report the Temp. controller is in the summer mode.*

Comments:

~~~~~

STEP 8 Performance Steps: LOG entry into Technical Specifications ACTION Statement 3.7.4.1.

GRADE Standards: *Examinee informs US of need to log into action statement*

Cue: *As US, the action statement is logged into.*

Comments:

~~~~~

STEP 9      X Performance Steps: OPEN "B" RBCCW heat exchanger SW outlet, 2-SW-9B.

GRADE         X Standards:      *Examinee requests/directs the PEO to Open "B" RBCCW HX outlet, 2-SW-9B*

Cue: *(See comment) and report as PEO that 2-SW-9B is open*

Comments: Set SWR24 to 100% when directed

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

STEP 10 X Performance Steps:

NOTE

1. RBCCW heat exchanger temperature controller is normally set at 75°F. However, when injection temperature is above 70°F, a setpoint between 75 and 80°F is required. The maximum allowable RBCCW heat exchanger outlet temperature is 85°F.
2. As the next step occurs, flow noise from the heat exchanger should be heard.

Slowly LOWER "B" RBCCW heat exchanger temperature control knob to setting specified by Control Room (TIC-6307).

GRADE X Standards: Examinee requests/directs the PEO to lower the "B" RBCCW temperature control knob to 75°F.

Cue: If asked as US what temp. to set the TCV at, inform the examinee to have it set at 75°F.

Comments: The booth instructor will have to set the 75° using CCR03 @ 75.

~~~~~

STEP 11         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 refers or returns to OP 2330A step 4.2.2.*

Cue:  

Comments:

~~~~~


PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

- STEP 12 _ Performance Steps: IF "B" RBCCW HX has been drained, ENSURE the following:
- HX is filled and vented
 - Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

GRADE ____ Standards: *No action required.*

Cue: As given in the initial conditions:

- HX has not been drained or isolated.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

Comments: Depending on the examinees sequencing, this step may have already been completed.

~~~~~

- STEP 13      \_      Performance Steps: IF electrical bus 24E must be aligned to bus 24D, to prevent cross tying Facility 1 and Facility 2 RBCCW headers, PERFORM the following:
- 1) Red TAG "B" RBCCW pump switch in "PULL TO LOCK" (C-06).
  - 2) CLOSE and red TAG the following (C-06):
    - "PP DIS HDR B/C X-TIE, RB-251B"
    - "PP B HDR B SUCT, RB-211D"
    - "HDR B HX-B OUT, RB-4.1D"
  - 3) ENSURE "PP B HDR A SUCT, 2-RB-211C" is open.

GRADE \_\_\_\_      Standards:      *No action required*

Cue:

Comments: Depending on the examinees sequencing, this step may have already been completed.

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

STEP 14 Performance Steps: IF "A" RBCCW pump is operating ENSURE "HDR B
HX-B OUT, RB-4.1D" closed.

GRADE Standards: *Examinee ensures 2-RB-4.1D is closed by observing its
green light only is lit.*

Cue: 

Comments:

~~~~~

STEP 15     X Performance Steps: OPEN "HDR A HX-B OUT, RB-4.1C" (C-06).

GRADE        X Standards:     *Examinee opens 2-RB-4.1C by taking its handswitch to  
"OPEN" until its red light only is lit.*

Cue: 

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

STEP 16 Performance Steps: MONITOR header "A" flow on FI-6035 to ensure that it
remains stable (C-06).

GRADE Standards: *Examinee observes FI-6035 for stable flow.*

Cue: 

Comments:

~~~~~

STEP 17     X Performance Steps: CLOSE "HDR A HX-A OUT, RB-4.1A" (C-06).

GRADE        X Standards:     *Examinee closes 2-RB-4.1A by taking its handswitch to  
"CLOSE" until its green light only is lit and observes FI-  
6035 for stable flow.*

Cue: 

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

STOP TIME: 

### VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-210

Rev. 1

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

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

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

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

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

Validated Time (minutes): 15

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

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

Areas for Improvement:

## EXAMINEE HANDOUT

JPM ID Number: 210

### Initiating Cues:

- You are the SPO.
- The Unit Supervisor has directed you to place the "B" RBCCW HX in service per OP 2330A section 4.2.2 and to remove "A" RBCCW HX from service.
- I will act as the US/PEO as needed.

### Initial Conditions:

- Maintenance must replace the head gasket on the "A" RBCCW HX due to a RBCCW leak
- "A" & "C" RBCCW HX's and pumps are in service
- Bus 24E is aligned to Bus 24C
- The "B" RBCCW HX has not been isolated or drained and has NOT been in fresh water layup.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Supplying Emergency Backup Air to 2-CH-192

ID Number: JPM-045

Revision: 5

II. Initiated:

M. Cole  
Developer

7/6/99  
Date

III. Reviewed:

Technical Reviewer

7/6/99  
Date

IV. Approved:

User Department Supervisor

7/12/99  
Date

Nuclear Training Supervisor

7/12/99  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-045 Rev. 5

Task Title: Supplying Emergency Backup Air to 2-CH-192

System: Instrument Air

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

Validated Time (minutes): 10

Task No.(s): NUTIMS #078-01-056

Applicable To: SRO X RO X PEO X

K/A No.: 2.1-P-2.1.23 K/A Rating: 3.9/4.0

### Method of Testing:

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

### Location:

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

Task Standards: At the completion of this JPM, the examinee has demonstrated alignment of emergency backup air to 2-CH-192.

Required Materials  
(procedures, equipment): • OP 2332B

General References: OP 2332B, Section 4.21 (Rev. 18, Ch. 4)

### **\*\*\*\* 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-045

Rev. 5

Initiating Cues:

- The Unit Supervisor has directed you to supply emergency backup air to 2-CH-192.

Initial Conditions:

- The plant has suffered a loss of Instrument Air.

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-045

TITLE: Supplying Emergency Backup Air to 2-CH-192

---

START TIME:                     

STEP 1           Performance Steps: Adjust backup air PCV, 2-IA-594, to minimum (fully counterclockwise).

GRADE              Standards:     *Examinee locates air bottle and 2-IA-594 and explains they would turn valve fully counterclockwise.*

Cue: Regulator valve is fully counterclockwise.

Comments:

~~~~~

STEP 2 X Performance Steps: Slowly open master stop C-4A, 2-IA-602.

GRADE X Standards: *Examinee locates 2-IA-602 and explains they would slowly open it by turning it in the counterclockwise direction.*

Cue: Valve is open.

Comments:

~~~~~

STEP 3        X Performance Steps: Open master stop, 2-IA-593.

GRADE           X Standards:     *Examinee locates 2-IA-593 and explains they would open it by turning it in the counterclockwise direction.*

Cue: Valve is open.

Comments:

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-045

TITLE: Supplying Emergency Backup Air to 2-CH-192

---

STEP 4      X Performance Steps: Adjust backup air PCV, 2-IA-594, clockwise and  
Establish 100 psig outlet pressure.

GRADE \_\_\_\_ X Standards: *Examinee simulates turning 2-IA-594 in the clockwise  
direction, while observing the PCV outlet pressure gauge,  
until 100 psig is achieved.*

Cue: *Use pen to show pressure rise to 100 psig and then stabilizing when  
examinee stops turning valve.*

Comments:

~~~~~

STEP 5 X Performance Steps: Slowly open master stop, 2-IA-596.

GRADE ____ X Standards: *Examinee locates 2-IA-596 and explains they would open
it by turning it in the counterclockwise direction.*

Cue: *Valve is open
After this step is completed, the JPM is considered complete.*

Comments: Examinee may also state the monitoring requirements while supplying backup
air (daily or every 4 hours while in an EOP), but it is not required.

STOP TIME:

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-045

Rev. 5

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: 045

Initiating Cues:

- The Unit Supervisor has directed you to supply emergency backup air to 2-CH-192.

Initial Conditions:

- The plant has suffered a loss of Instrument Air.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I JPM Title: Display Inadequate Core Cooling System Parameters

ID Number: JPM-064

Revision: 5

II. Initiated:



Fred Nygard

Developer

07/15/2000

Date

III. Reviewed:



Technical Reviewer

7/16/00

Date

IV. Approved:

User Department Supervisor

Date



Nuclear Training Supervisor

7/16/00

Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

Examinee: _____

JPM Number: JPM-064

Rev. 5

Task Title: **Display Inadequate Core Cooling System Parameters**

System: ICC

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS # 017-01-011

Applicable To: SRO X RO X PEO _____

K/A No. 2.1.30 K/A Rating 3.9/3.4

Method of Testing:

Simulated Performance: _____ Actual Performance: X

Location:

Classroom: _____ Simulator: _____ In-Plant: X

Task Standards:

At the completion of this JPM, the examinee has recorded the following Inadequate Core Cooling System parameters in accordance with OP 2387G:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Required Materials
(procedures,
equipment):

None

General References:

OP 2387G, Section 4.1 (Rev.4)

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

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

JOB PERFORMANCE MEASURE WORKSHEET

Initiating Cues: The Unit Supervisor has directed you to determine the following data from the Inadequate Core Cooling Monitoring System:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Initial Conditions:

All prerequisites to perform this task have been met

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. Examinees may operate the touch screen to obtain the data. **NO** other operations may be performed during this JPM.

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-064

TITLE: Display ICC System Parameters

START TIME: 

STEP 1 X Performance Steps: IF "DISP DIR" selection box is available on the display screen (upper right), PRESS "DISP DIR" selection Box.

GRADE X Standards: Display Directory screen displayed.

Cue: 

Comments: This step is critical only if the Display Directory page is not displayed.

~~~~~

STEP 2 X Performance Steps: PRESS the "Core Summary" selection box.

GRADE     X Standards: Core Summary screen displayed.

Cue: 

Comments:

~~~~~


PERFORMANCE INFORMATION

PM ID NUMBER: JPM-064

TITLE: Display ICC System Parameters

- STEP 3 X Performance Steps: SELECT the desired parameter as follows:
- PRESS "Saturation Margin" on the display screen to display the "Saturation Margin" page.
 - PRESS "Reactor Level" on the display screen to display the "Reactor Level" page.
 - PRESS "Maximum CET Temp" on the display screen to display the "Maximum CET Temp" page.

- GRADE X Standards:
- "Saturation Margin" page displayed and data recorded.
 - "Reactor Level" page displayed and data recorded.
 - "Maximum CET Temp" page displayed and data recorded.

Cue: 

Comments: Method of recording data is not critical.
After this step is completed, the JPM is considered complete.

STOP TIME: 

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-064

Rev. 5

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: 064

Initiating Cues: The Unit Supervisor has directed you to determine the following data from the Inadequate Core Cooling Monitoring System:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Initial Conditions: All Prerequisites to perform this task have been met.

JOB PERFORMANCE MEASURE APPROVAL SHEET{PRIVATE }

I. JPM Title: **Local Manual Airstart of the "A" Diesel Generator**

ID Number: JPM-060

Revision: 6

II. Initiated:


Fred Nygard
Developer

7/15/2000
Date

III. Reviewed:


Technical Reviewer

7/16/00
Date


Instructional Reviewer

Date

IV. Approved:

Operations Supervisor

Date


Nuclear Training Supervisor

7/16/00
Date

JOB PERFORMANCE MEASURE WORKSHEET

FACILITY: MP-2

EXAMINEE: _____

JPM Tracking Number: JPM-060

Validated Time: 15 Minutes

Task Title: Local Manual Airstart of the "A" Diesel Generator

Time Critical Task: No

Task No. 064-210-01-01

Rev. 6

K/A No. 064-000-A4.06

K/A Rating: 3.9/3.9

Method of Testing:

Simulate Performance X

Actual Performance ____

Classroom ____

Simulator ____

Plant X

Task Standards:

A local manual airstart of the "A" D/G has been completed.

Required Materials:

EOP-2541 Appendix 23-C

General References:

EOP-2541 Appendix 23-C

* READ TO THE OPERATOR *

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 and log entries as if the evolution was actually being performed.

JOB PERFORMANCE MEASURE WORKSHEET (Continued)

Initiating Cues:

- The US directs you to perform a local manual air start of the "A" per the EOP Standard Appendices Attachment 23-C contingency step 8.1

Initial Conditions:

- The plant has tripped and the US is currently using EOP Standard Appendices Attachment 23-C to Energize 4.16 kV Bus 24C From DG A

JOB PERFORMANCE MEASURE WORKSHEET (Continued)

Simulator Requirements: N/A

NOTE TO EXAMINER:

Under NO circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM.

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

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

PERFORMANCE INFORMATION

FACILITY: MP-2

SYSTEM: Emergency Diesel Generators

JPM NUMBER: JPM-060

Task Title: Local Manual Airstart of the "A" Diesel Generator

START TIME: _____

STEP 1 Performance Steps: Ensure communications established between an operator at DG A and the Control Room.

GRADE Standards: Examinee states that he/she gets a set of headphones to use in the "A" D/G room and after arriving in the room, plugs them into the maintenance jack

Cue: Headphones are plugged into jack.

Comments:

~~~~~

STEP 2 X    Performance Steps: Press "ALARM RESET" pushbutton.

GRADE    Standards: Examinee locates the "ALARM RESET" button on the DG gageboard and states that he/she presses it.

Cue: Button has been pressed.

Comments:

~~~~~


PERFORMANCE INFORMATION (Continued)

JPM NUMBER: JPM-060

Task Title: Local Manual Airstart of the "A" Diesel Generator

STEP 3 Performance Steps: Ensure the shutdown relay is reset by observing blue pin in the center of the relay panel fully extended (northwest corner of the DG).

GRADE Standards: Examinee locates the shutdown relay "SDR" and verifies that it is reset by observing that the blue pin in the center of the relay is fully extended.

Cue: Blue pin is fully out.

Comments: The SDR is located in the middle of RELAY CABINET, TO40 at the northwest corner of the diesel.

~~~~~

STEP 4 X    Performance Steps: Unlock and close 2-DG-88A, D/G 12U Air Start Vent Header Isolation,.

GRADE    X    Standards: Examinee locates 2-DG-88A and states that he uses a "valve lock" key to unlock it, removes the chain and closes it by turning the handwheel in the clockwise direction until full inward stem travel.

Cue: Valve lock unlocked; Chain removed; Valve stem lowering; valve stem fully in.

Comments: 2-DG-88A may already be shut due to a caution tag. In this case, no action is required by the examinee and the step becomes not critical.

~~~~~

PERFORMANCE INFORMATION (Continued)

JPM NUMBER: JPM-060

Task Title: **Local Manual Airstart of the "A" Diesel Generator**

STEP 5 X Performance Steps, Start the DG by performing the following steps at the same time:

- 1) Turn the "A" DG "MAN START-STOP" switch to "START" C-08).
- 2) Locally press the lever on DG-94A "Control Air 2-DG-92A Supply".

GRADE X Standards: Examinee contacts the control room and coordinates with the control operator to turn the "A" D/G MAN START-STOP switch to "START" on C-08 while the examinee locates 2-DG-94A and states that he pulls back on and holds the lever at the same time as the control operator takes his switch to "START".

Cue: Acknowledge the request to turn the "A" D/G MAN START-STOP switch to "START"; report that the switch is in "START". Lever is back; Air is bleeding off; D/G is turning over.

~~~~~

**PERFORMANCE INFORMATION (Continued)**

JPM NUMBER: JPM-060

Task Title: **Local Manual Airstart of the "A" Diesel Generator**

STEP 6    Performance Steps: When the "A" DG has started, release the lever on 2-DG-94A.

GRADE    Standards: Examinee states that when the sound of the D/G indicates that it is started, he releases the bypass lever.

Cue: D/G is running; lever is back to its normal position.

Comments:

~~~~~

STEP 7 Performance Steps: Open and lock 2-DG-88A, Air Start Vent Header Isolation.

GRADE Standards: Examinee states that he opens 2-DG-88A by turning its handwheel in the counterclockwise direction until full outward stem travel, installs the chain on the valve, and locks it.

Cue: Valve stem rising; valve stem fully out; chain installed; chain locked.

Comments: 2-DG-88A may be shut due to a caution tag. In this case, no action is required by the examinee - the valve should not be opened. After this step is completed, the JPM is considered complete.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-060 Rev. 6

Date Performed: _____

Examinee: _____

Evaluator: _____

Validated Time (min): 15 Actual Time to Complete (min): ____

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

Result of oral questions: Number of questions _____

Number of Correct Responses _____

Score ____ %

Areas for Improvement:

EXAMINEE HANDOUT

JPM Number: JPM-060

Initiating Cues:

- The US directs you to perform a local manual air start of the "A" per the EOP Standard Appendices Attachment 23-C contingency step 8.1

Initial Conditions:

- The plant has tripped and the US is currently using EOP Standard Appendices Attachment 23-C to Energize 4.16 kV Bus 24C From DG A

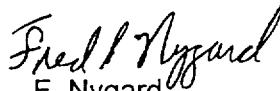
JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Dropped CEA Recovery - Alternate Path

ID Number: JPM-208

Revision: 0

II. Initiated:



F. Nygard

Developer

6/6/2000

Date

III. Reviewed:



Technical Reviewer

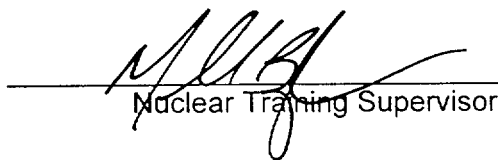
6/16/00

Date

IV. Approved:

User Department Supervisor

Date


Nuclear Training Supervisor

6/20/00
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-208 Rev. 5

Task Title: **Respond to Control Element Assembly Malfunction**

System: Control Rod Drive System

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS 000-04-097

Applicable To: SRO X RO X PEO _____

K/A No.: 000-003-AA1.02 K/A Rating: 3.6/3.4

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 withdrawn the dropped rod from the core 9 steps and is ready to proceed to the next withdrawal sequence.

Required Materials

(procedures,equipment):

- AOP 2556
- ARP 2590C C04 DB-18

General References:

AOP 2556

***** 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-208

Rev. 0

Initiating Cues:

- The plant was in the process of an up power with reactor power at ~ 50%.
- A dropped CEA recovery of rod #18 has commenced.
- You have been directed by the US to recover CEA #18 per AOP 2556, starting at step 4.3.17
- You are responsible for all operations on C04
- All other actions will be handled by others.
- I will act as the US.

Initial Conditions:

- The plant is at ~ 50% power and stable.
- CEA #18 dropped while performing a power increase.
- All steps of AOP 2556 up to, and including, step 4.3.16 have been completed.
- The "NSSS DATA SHEET" hardcopy and "INCORE DETECTOR OPERABILITY REPORT" have been printed and are being reviewed by Reactor Engineering
- I&C is in the East DC Switchgear room and will inform you if any problems are seen during the withdrawal.

Simulator Requirements:

- Initialize at an IC with power at ~ 50% and perform the following:
- Enter RD0118 to cause CEA #18 to drop, **then remove malfunction,**
- Stabilize reactor power and turbine load as necessary
- Display CVMWTH on C-04 PPC
- Place the simulator in freeze
- When the examinee is ready, place the simulator in run.
- **When examinee is near completion of JPM step 12, just after insertion of CEA as commenced, Annunciator Override C04 DB-18 "CEDS Logic or Relay power Failure " ON".**
- **Be prepared to remove the Annunciator Override during JPM step 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?").

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

START TIME:

STEP 1 Performance Steps: During CEA movement, MONITOR the following:

- "CEAPDS MONITOR"
- Backup scanner
- PPC CEA positions display, "CEA"
- Core mimic

GRADE Standards: *During CEA movement the examinee must observe the indications listed above.*

Cue: If asked, provide oversight and peer checks.

Comments: Reactivity oversight and peer checks are expected during operation with a full crew compliment. Due to the nature of the JPM, the examinee may not implement these good practices.

~~~~~

STEP 2           Performance Steps: Select the dropped CEA on the Backup Scanner

GRADE           Standards: *Examinee rotates the backup scanner CEA select thumbwheels to "1" & "8".*

Cue:

Comments:

~~~~~

STEP 3 Performance Steps: As desired, SELECT applicable CEA group "+/- 15 STEPS" or "FULL SCALE" ("CEAPDS MONITOR").

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

GRADE Standards: *Examinee should normally select the "+/- 15 STEPS" when initially withdrawing the CEA*

Cue:

Comments:

~~~~~

STEP 4      X Performance Steps: PRESS "MANUAL INDIVIDUAL, MI" button and CHECK light lit

GRADE      X Standards: *Examinee presses the "MANUAL INDIVIDUAL, MI" button and observes light lit*

Cue:

Comments:

~~~~~

STEP 5 X Performance Steps: PRESS applicable *group* "INHIBIT BYPASS" button and CHECK the following:

- Appropriate group red "INHIBIT BYPASS" button lit
- "CEA MOTION INHIBIT BYP" annunciator lit (BA-19, C-04) (depends on group selected)

GRADE X Standards: *Examinee presses the Group 2 "INHIBIT BYPASS" switch and observes it lit and that BA-19 on C-04 annunciates.*

Cue:

Comments:

~~~~~

STEP 6      X Performance Steps: PRESS applicable "GROUP SELECTION" button.

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-208 TITLE: Dropped CEA Recovery - Alternate Path

GRADE      X   Standards: *Examinee selects Group 2 by pressing button "2" and observing it light.*

Cue:

Comments:

STEP 7    Performance Steps: LOG entry into Technical Specifications LCO, 3.1.3.1, ACTION b in SM Log (CMI bypassed).

GRADE       Standards: *Examinee asks the US to log into the Technical Specifications*

Cue: Reply as the US that Technical Specifications have been logged.

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

STEP 8 Performance Steps:

NOTE

If recovering a Group 7 CEA, while a CMI condition exists, "CEA MOTION INHIBIT" annunciator (BA-18, C-04) clears when *system* "CEA MOTION INHIBIT BYPASS" button is depressed and returns when released, until the CMI condition has cleared. For all other groups the annunciator will remain lit until the CMI condition clears.

GRADE Standards: *Examinee reads note and does not become concerned when BA-18 does not clear when the CMI bypass button is pushed.*

Cue:

Comments:

~~~~~

STEP 9      X Performance Steps: PRESS and HOLD *system* "CEA MOTION INHIBIT BYPASS" button.

GRADE           X Standards:      *Examinee presses and holds the system "CEA MOTION INHIBIT BYPASS" button.*

Cue:

Comments:

~~~~~

STEP 10 X Performance Steps: PRESS "INDIVIDUAL CEA SELECTION" button for dropped CEA.

GRADE X Standards: *Examinee Selects the dropped CEA by pressing button "18" and observing it light.*

Cue:

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

STEP 11          Performance Steps: IF CEA is *lower* than all other CEAs in its group, PERFORM the following:

|              |    |                                                                       |
|--------------|----|-----------------------------------------------------------------------|
| <u>    </u>  | a. | OBSERVE starting CEA position.                                        |
| <u>  X  </u> | b. | PLACE and HOLD CEA control switch to "WITHDRAW."                      |
| <u>    </u>  | c. | WITHDRAW CEA 6 to 9 steps.                                            |
| <u>  X  </u> | d. | WHEN CEA has been withdrawn 6 to 9 steps, RELEASE CEA control switch. |
| <u>  X  </u> | e. | PLACE and HOLD CEA control switch to "INSERT."                        |
| <u>  X  </u> | f. | INSERT CEA 3 to 5 steps.                                              |
| <u>  X  </u> | g. | WHEN CEA has been inserted 3 to 5 steps, RELEASE CEA control switch.  |

GRADE               Standards:

|              |    |                                                                                       |
|--------------|----|---------------------------------------------------------------------------------------|
| <u>  X  </u> | a. | <i>Examinee notes starting CEA position.</i>                                          |
| <u>    </u>  | b. | <i>Examinee PLACE and HOLD CEA control switch to "WITHDRAW."</i>                      |
| <u>  X  </u> | c. | <i>Examinee WITHDRAW CEA 6 to 9 steps.</i>                                            |
| <u>  X  </u> | d. | <i>Examinee WHEN CEA has been withdrawn 6 to 9 steps, RELEASE CEA control switch.</i> |
| <u>  X  </u> | e. | <i>Examinee PLACE and HOLD CEA control switch to "INSERT."</i>                        |
| <u>  X  </u> | f. | <i>INSERT CEA 3 to 5 steps.</i>                                                       |
| <u>  X  </u> | g. | <i>Examinee WHEN CEA has been inserted 3 to 5 steps, RELEASE CEA control switch.</i>  |

Cue:

Comments: **When CEA has be inserted 3-5 steps (step g. Above), Override C04 DB-18 "CEDS Logic or Relay power Failure " ON. In preparation for next JPM step. Later, at JPM step 16, the examinee is expected to recommence rod movement at 4.3.26. h, after reselecting MI and bypassing CMI.**

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

STEP 12 X Performance Steps: If CEA motion is in progress, Stop all CEA movement.

GRADE	<u> X </u>	Standards:	<i>Examinee acknowledges and reports CEDS Logic or Relay power Failure alarm to US and stops CEA motion by returning the CEA control switch to neutral. May release the CEA Motion Inhibit Bypass button and select the Off button.</i>
-------	--------------	------------	---

Cue: As US direct the examinee to perform C04 DB-18 CEDS Logic or Relay power Failure annunciator response procedure. If examinee requests to release the CEA Motion Inhibit Bypass button, direct that the button be released.

Comments: If examinee releases the CEA Motion Inhibit Bypass button when motion is stopped, determine that he waited at least 3 seconds after the CEA control switch was released.

STEP 13 Performance Steps: Obtain ARP 2590C DB-18 and performs the following:

1. Stop all CEA Movement.
2. Send an operator to CEDS-LOGIC panel to determine how many power supplies have failed.
3. Observe DC alarm lights lit for both primary and secondary power supplies of the same voltage

GRADE ____ Standards:

1. Stop all CEA Movement.
2. Send an operator to CEDS-LOGIC panel to determine how many power supplies have failed and report on . DC alarm lights lit for both primary and secondary power supplies of the same voltage

Cue: As the PEO, report that the primary and secondary +15 volt power supply for Group 3 are the only power supplies with the red DC Alarm lights lit. Also report that I&C reports there is no other obvious problem and they recommend cycling of the AC power switch..

Comments:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

STEP 14 Performance Steps: If no obvious problem exists with power supply drawer, to reset alarm, Cycle "AC Power" switch for both primary and secondary power supplies for the common drawer.

GRADE Standards: *Direct the PEO to Cycle "AC Power" switch for both primary and secondary power supplies for the common drawer.*

Cue: Report as the PEO that secondary DC Alarm light reset but the primary DC Alarm light did not reset

Comments: **Remove the annunciator override just before reporting back as the PEO.**

~~~~~

STEP 15           Performance Steps: If only one power supply failed, Continue plant operation.

GRADE           Standards:      *Report the results to the US and recommend continued recovery of CEA 18. May request guidance for recommencing the procedure.*

Cue:      As US, direct that CEA 18 recovery recommence. If guidance is requested, ask the examinee what his recommendations are.

Comments:

~~~~~


PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

- STEP 16 Performance Steps:
- a. PRESS "MANUAL INDIVIDUAL, MI" button and CHECK light lit
 - b. PRESS and HOLD *system* "CEA MOTION INHIBIT BYPASS" button.
 - c. PLACE and HOLD CEA control switch to "WITHDRAW."
 - d. WITHDRAW CEA 3 to 5 steps, *not* to exceed 10 steps from starting CEA position.
 - e. WHEN CEA has been withdrawn 3 to 5 steps, RELEASE

NOTE

- 1. When CMI relay is bypassed for CEA movement, CMI should remain bypassed for at least 3 seconds after CEA motion is stopped (allows CPP operations to be completed).
- 2. If recovering a Group 7 CEA, while a CMI condition exists, "CEA MOTION INHIBIT" annunciator (BA-18, C-04) clears when *system* "CEA MOTION INHIBIT BYPASS" button is depressed and returns when released, until the CMI condition has cleared. For all other groups the annunciator will remain lit until the CMI condition clears.
- k. WHEN at least 3 seconds have elapsed since CEA control switch was released, RELEASE *system* "CEA MOTION INHIBIT BYPASS" button.
- m. Go To step 4.3.28.

- GRADE Standards:
- a. PRESS "MANUAL INDIVIDUAL, MI" button and CHECK light lit
 - b. PRESS and HOLD *system* "CEA MOTION INHIBIT BYPASS" button.
 - c. Examinee PLACE and HOLD CEA control switch to "WITHDRAW." i. WITHDRAW CEA 3 to 5 steps, *not* to exceed 10 steps from starting CEA position.
 - d. Examinee WHEN CEA has been withdrawn 3 to 5

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-208

TITLE: Dropped CEA Recovery - Alternate Path

steps, RELEASE

NOTE

1. *Examinee reads note and waits at least 3 seconds before releasing the CEA MOTION INHIBIT BYPASS button after CEA motion is stopped*
2. *Examinee reads note and does not become concerned when BA-18 does not clear when the CMI bypass button is pushed.*
- e. *Examinee waits at least 3 seconds and then releases the system "CEA MOTION INHIBIT BYPASS" button.*
- m. *Go To step 4.3.28.*

Cue:

Comments: This step recommences rod movement after the JPM alternate path at JPM step 12. These steps have not been designated as critical because of the potential US/SM input for continued rod recovery.

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

~~~~~

STOP TIME:

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-201

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): 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: 208

### Initiating Cues:

- The plant was in the process of an up power with reactor power at ~ 50%.
- A dropped CEA recovery of rod #18 has commenced.
- You have been directed by the US to recover CEA #18 per AOP 2556, starting at step 4.3.17
- You are responsible for all operations on C04
- All other actions will be handled by others.
- I will act as the US.

### Initial Conditions:

- The plant is at ~ 50% power and stable.
- CEA #18 dropped while performing a power increase.
- All steps of AOP 2556 up to, and including, step 4.3.16 have been completed.
- The "NSSS DATA SHEET" hardcopy and "INCORE DETECTOR OPERABILITY REPORT" have been printed and are being reviewed by Reactor Engineering
- I&C is in the East DC Switchgear room and will inform you if any problems are seen during the withdrawal.

JOB PERFORMANCE MEASURE APPROVAL SHEET {PRIVATE }

I JPM Title: Manual Makeup to the VCT

ID Number: JPM-022

Revision: 5

II. Initiated:

  
Fred Nygard  
Developer

6/5/2000  
Date

III. Reviewed:

  
Technical Reviewer

6/15/00  
Date

IV. Approved:

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

\_\_\_\_\_  
Date

  
Nuclear Training Supervisor

6/20/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-022

Rev. 5

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 (004-094-01-01)

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

K/A No. 004-020-A4.04 K/A Rating 3.3/2.9

### 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 recognized a malfunction with boric acid injection during attempted makeup to the VCT.

### Required Materials (procedures, equipment):

OP 2304C

### General References:

OP 2304C, Section 4.9 (Rev. 20, Ch. 2)

### **\*\*\*\* 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

PM Number: JPM-022

Rev. 5

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.
- When makeup is completed, return the system lineup to normal.
- The examiner will act as the US.

Initial Conditions:

- RCS boron concentration is 567 ppm
- In-service Boric Acid Storage Tank concentration is 5,944 ppm

Simulator Requirements:

- Initialize at any IC with charging, letdown, and makeup to the VCT available.
- Enter remote function CVR14 (CLOSE) to close 2-CH-172.

---

**\*\*\*\*\* 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

PM ID NUMBER: JPM-022

TITLE: Manual Makeup to the VCT

---

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

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 Performance Steps: Determine the required ratio of boric acid flow to PMW flow.

GRADE Standards: *Examinee uses either OP 2208 or PPC to determine that the ratio of boric acid to PMW flow is 1 gallon 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)

GRADE    Standards:    *Examinee observes indicating lights for CH-512 on C-04 and CH-196/192 on C-02 by their green lights only lit.*

Cue:

Comments:



## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-022

TITLE: Manual Makeup to the VCT

---

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/% that a total of 68 gallons is required.*

Cue:    If not stated, solicit information.

Comments:

~~~~~

STEP 5 Performance Steps: Reset PMW and boric acid controllers (FC-210X / FC-210Y), to zero.

GRADE Standards: *For each controller, examinee checks "L" indicated, presses and holds "SEL" button until "TOTAL RST" is displayed. Presses "R/L" button to shift controller to "R" (resets totalizer), then back to "L". Presses "SEL" to display controller number.*

Cue:

Comments:

~~~~~

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:

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-022

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 9.5 gal. PMW. Allow range of calculation to be based on 1 gal. BA to between 9 and 10 gallon of water.*

Cue:

Comments: Any ratio of approximately 1 gal. BA to 9.5 gal. PMW is acceptable (i.e. 6 gals. BA to 54-60 gals. PMW, 10 gals. BA to 90-100 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 from the "DILUTE" position to the "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) B.A. pump by placing its handswitch 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.

~~~~~

## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-022

TITLE: Manual Makeup to the VCT

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 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 setpoints. Examinee observes that there is no B.A. flow indicated.*

Cue:

Comments:

~~~~~

STEP 12 X Performance Steps: Terminate the on-going dilution to the VCT or recommend termination to the Unit Supervisor.

GRADE     X Standards: *Examinee closes CH-512 on C-04 by placing its switch in the "CLOSE" position until the green light only is lit, and secures the B.A. pump on C-02 by placing its handswitch in the "STOP" position and verifying the green light is lit. Examinee also ensures PMW flow has stopped as indicated on controller FC-210X.*

OR

*Examinee places the Makeup Mode Selector switch on C-04 in the "DILUTE" or "BORATE" position. Examinee also ensures PMW flow has stopped as indicated on controller FC-210X.*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-022

TITLE: Manual Makeup to the VCT

STEP 13 Performance Steps: Notify US that the dilution has been terminated.

GRADE Standards: *Examinee notifies US that the dilution has been terminated as indicated by no flow on FC-210X.*

Cue:

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-022

Rev. 5

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: 022

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.
- When makeup is completed, return the system lineup to normal.
- The examiner will act as the US.

Initial Conditions:

- RCS boron concentration is 567 ppm
- In-service Boric Acid Storage Tank concentration is 5,944 ppm

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Respond to PORV Key Lock Switch Failure While Performing Once Through Cooling

ID Number: JPM-118

Revision: 2

II. Initiated:



Fred Nygard
Developer

7/14/2000
Date

III. Reviewed:



Technical Reviewer

7/16/00
Date

IV. Approved:

User Department Supervisor

Date



Nuclear Training Supervisor

7/14/00
Date

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

Examinee: _____

JPM Number: 118

Rev. 2

Task Title: Carry Out Functional Recovery of Heat Removal

System: _____

Time Critical Task: Yes _____ No X

Validated Time (minutes): 5

Task No.(s): NUTIMS #000-05-230

Applicable To: SRO X RO X PEO X

K/A No.: E06 EA1.1
074 EA1.05

K/A Rating: 4.0/3.9
3.9/4.1

Method of Testing:

Simulated Performance: _____ Actual Performance: X

Location:

Classroom: _____ Simulator: X In-Plant: X

Task Standards:

At the completion of this JPM, Examinee performs opening of the PORVs by the contingency action of EOP 2540D.

Required Materials
(procedures,equipment):

- EOP-2540D, HR 3

General References:

EOP-2540D, HR 3 Step 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.

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

JOB PERFORMANCE MEASURE WORKSHEET (Continued)

Initiating Cues:

- The US directs you to open both PORVs to commence once through cooling.
- All other actions will be handled by others.
- I will act as the US; make all reports to me.

Initial Conditions:

- The shift is in EOP 2540 due to a Loss of all Feedwater and a Loss of Coolant Accident inside containment.
- Steps 1.a through 1.j of EOP 2540D -HR-3 have been completed.

Simulator Requirements:

Initialize at a normal 100% power IC and perform the following:

- Enter ED08A & ED08B @ BT1 (Failure of 6.9 KV Bus Xfer on trip)
- FW20A, FW20B, & FW20C (AFP trips)
- RC06A & RC06B @ 0% (PORV's failed closed)
- RP02 (Spurious Rx trip)
- Carry out all actions of EOP 2525
- Carry out Steps 1.a thru 1.j of EOP 2540D HR-3
- Place the simulator in freeze
- When the examinee is on station and has stated that he is ready, place the simulator in run

**** NOTES TO EXAMINER ****

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

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

START TIME: XXXXXXXXXX

STEP 1 Performance Steps: Open both PORVs using key lock switches.

GRADE Standards: *Examinee attempts to open both PORVs by taking their handswitches to "OPEN" and observes their failure to open by observing the indication on the acoustic valve monitors for these valves and/or observing the lack of alarms on C-02/3.*

Cue:

Comments: Alarms that would indicate the PORVs are open include: Pressurizer Relief Valves Discharge Temperature High(C-42); Various quench tank alarms (A-36, B-36, C-36); PORV RC-402 Open (C-11); and PORV RC-402 Open (C-11).

~~~~~

STEP   2   Performance Steps: Report the failure of the PORVs to open.

GRADE      Standards: *Examinee informs the SCO of the failure of both PORVs to open with their handswitches.*

Cue: Understand that the PORVs will not open with their handswitches; What are your required actions now?; Use Channel 'A' & 'B' high pressure trip modules

Comments: If the examinee does not state the contingency actions required, see "Cue".

~~~~~

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

STEP 3 X Performance Steps: Position the bypass key in one high pressure trip bistable and Select "Bypass" position on RPS.

GRADE X Standards: Examinee performs the following:

- *Obtains the high pressure trip module bypass key*
- *Places this key in one channel of high pressure trip module bypass key slot*
- *Turns the key to the right to bypass the trip module*

Cue: As US direct that RPS channels 'A' and 'B' are to be used.

Comments: RPS channels 'A' and 'B' need to be used at the simulator because of simulator program.

~~~~~

STEP 4 X Performance Steps: OPEN PORVs by pulling the high pressure trip bistable on the bypassed channel and on one other channel.

GRADE     X Standards: *Examinee states that he would pull the high pressure trip bistable on the bypassed channel and on one other channel.*

Cue: The Channel 'A' & 'B' high pressure trip modules are pulled.

Comments: If the examinee tries to remove the modules, stop him and question him as to what his actions would be. **The simulator instructor must enter RPR18 to disconnect Channel 'A' & 'B' high pressure trip modules. At this point the simulator instructor must also remove malfunctions RC06A and RC06B.**

~~~~~

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

STEP 5 X Performance Steps: Open both PORVs using the bypass key.

GRADE X Standards: *Examinee performs the following:*

- *Turns the bypass key that was inserted in Step #3 to the left to unbypass that module*
- *Observes that both PORVs open by their red lights only lit and/or by indication on the acoustic valve monitors for these valves.*

Cue:

Comments: When both PORVs have been opened by the contingency actions, then this JPM is complete.

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-118

Rev. 2

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): 5

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

JPM ID NUMBER: JPM-118

TITLE: Respond to PORV Key Lock Switch Failure
While Performing Once Through Cooling

EXAMINEE HANDOUT

JPM ID Number: 118

Initiating Cues:

- The US directs you to open both PORVs to commence once through cooling.
- All other actions will be handled by others.
- I will act as the US; make all reports to me.

Initial Conditions:

- The shift is in EOP 2540 due to a Loss of all Feedwater and a Loss of Coolant Accident inside containment.
- Steps 1.a through 1.j of EOP 2540D -HR-3 have been completed.

JOB PERFORMANCE MEASURE APPROVAL SHEET

1. JPM Title: **Initiate Boron Precipitation Control (Alternate Method)**

ID Number: JPM-203

Revision: 1

II. Initiated:

F. Nygard
Developer

7/14/2000
Date

III. Reviewed:

Technical Reviewer

Date _____

IV. Approved:

User Department Supervisor

Date _____

Nuclear Training Supervisor

Date _____

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

Examinee: _____

JPM Number: JPM-203

Rev. 1

Task Title: Initiate Boron Precipitation Control (Alternate Method)

System: ECCS

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS #000-05-222

Applicable To: SRO X RO X PEO _____

K/A No.: 000-011-EA1.13 K/A Rating: 4.1/4.2

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 initiated boron precipitation control using a HPSI pump for hot leg injection via the charging and auxiliary spray piping.

Required Materials (procedures,equipment):

- EOP 2541 Appendix 18

General References:

EOP 2541, Appendix 18

***** 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-203

Rev. 1

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to initiate boron precipitation control per EOP 2541 Appendix 18.
- The examiner will act as the PEO or US, as required.

Initial Conditions:

- The plant experienced a large-break LOCA.
- EOP 2525 was completed and the crew transitioned to EOP 2532 approximately 9 hours ago.
- All RCPs are off.
- SRAS has initiated.

Simulator Requirements:

Initialize simulator with the following conditions:

- Post-large break LOCA condition (RC03A at 100% or equivalent)
- 2-CS-13.1A/B closed
- RCPs off
- 2-SI-659/660 are in "OPER"
- CETs are < 345 degF
- Rx vessel level < 43%
- Pressurizer level < 20%

I/O open (prevent closing) SI-635 by RH HS 3635 CLS Off

I/O Annunciator C01-C8 Hi LPSI Amps OFF

Place simulator in "Freeze."

When examinee is ready, place simulator in "Run."

Prepare to I/O 'A' LPSI pump Amps immediately after the LPSI pump is started at JPM step 8.

**** 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-203

TITLE: Initiate Boron Precipitation Control
(Alternate Method)

START TIME: 

STEP 1 Performance Steps: Go To section 18-A

GRADE ____ Standards: *Examinee observes that both Facility 1 and 2 are available and that PPC CETs are < 345 degF . Interprets step 1 criteria for going to section 18-B is not met. Interprets criteria for going to section 18-A is met.*

Cue:

Comments:

~~~~~

STEP 2                      Performance Steps: Stop both LPSI pumps

GRADE \_\_\_\_              Standards:     *Examinee observes that both LPSI pumps are off by green lights lit and amps at 0.*

Cue:

Comments:     LPSI pumps tripped due to SRAS.

~~~~~

STEP 3 Performance Steps: Ensure that Facility 2 HPSI pump is operating.

GRADE ____ Standards: *Examinee observes "C" (or "B" if aligned) HPSI pump red light lit, amperage indicated and discharge pressure on C-01.*

Cue:

Comments:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203 TITLE: Initiate Boron Precipitation Control
(Alternate Method)

~~~~~

STEP 4                      Performance Steps: Close SI-635 LPSI injection valve and based on it not closing, goes to section 18-B..

GRADE              Standards:    *Examinee attempts to close SI-635 by taking the handswitch to the closed position and determines that it will not close based on red light only remaining lit.*

  X                        *Takes the contingency action of going to section 18-B.*

Cue:

Comments:    At this point the examinee should transition to section 18-B. If the wrong path, is chosen and initiated, the examinee has failed the JPM.

~~~~~

STEP 5 Performance Steps: If Both Facility 1 and 2 are available and CET temperature is greater than 345°F, perform the following...

GRADE Standards: *Examinee determines this step is not applicable and proceeds to step 1.b.*

Cue:

Comments:

~~~~~

STEP 6                           Performance Steps: Ensure Facility 1 HPSI pump operating.

GRADE              Standards:    *Examinee observes "A" (or "B" if aligned) HPSI pump red light lit, amperage indicated and discharge pressure ~1250 psig on C-01.*

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

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Cue:

Comments:

~~~~~

STEP 7 X Performance Steps: Ensure two of the following valves are fully closed and two are fully open:

- 2-SI-615
- 2-SI-625
- 2-SI-635
- 2-SI-645

GRADE ____ X Standards: *Determines that SI 635 is open and that one of the remaining 3 valves must be shut. Selects a valve and takes handswitch for either SI-615, SI-625 or SI-645 to "OPEN" (override SIAS), then to "CLOSE" and observes green lights only lit for these LPSI injection valves on C-01.*

Cue:

Comments:

~~~~~

STEP 8      X Performance Steps: Ensure "A" LPSI pump operating and "B" LPSI pump is off.

GRADE \_\_\_\_ X Standards: *Examinee observes "A" and "B" LPSI pumps not operating by observing green lights lit and zero amperage on C-01. Examinee then places "A" LPSI pump switch to "STOP" (override SRAS), then to "START" and observes red light lit and amperage indicated, as well as pump discharge pressure rising for "A" LPSI pump.*

Cue:

Comments: LPSI pumps tripped due to SRAS. More than one start attempt is acceptable.  
**Simulator operator: After 'A' LPSI pump is started, I/O 'A' LPSI pump amps to 48 amps.**

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

---

STEP 9           Performance Steps: Stop Facility 1 HPSI pump.

GRADE              Standards:     *Examinee places "A" (or "B" if aligned) HPSI pump switch to "START" (override SIAS), then to "TRIP" and observes green light lit and zero amperage indicated, as well as pump discharge pressure lowering for HPSI pump.*

Cue:

Comments:    More than one stop attempt is acceptable.

~~~~~

STEP 10 X Performance Steps: Close Facility 1 HPSI injection valves 2-SI-617, 627, 637, 647.

GRADE X Standards: *Examinee takes handswitches for Facility 1 HPSI injections (2-SI-617, 627, 637, 647) to "OPEN" (override SIAS), then to "CLOSE" and observes green lights only lit on C-01.*

Cue:

Comments:

~~~~~

STEP 11       X Performance Steps: Unlock and Open charging pump discharge to HPSI header valves, 2-CH-340 and 2-CH-440.

GRADE          X Standards:     *Examinee directs PEO to open the mentioned valves and may also direct an HP Tech. to go with them due to potential High Radiation levels.*

Cue:    **When open, report back as PEO that both valves are open as requested.**

Comments:    To open both 2-CH-340 and 2-CH-440, use CVR01.

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

---

STEP 12        Performance Steps: Check open charging header isolation valve,  
2-CH-429.

GRADE        Standards:     *Examinee observes red light lit for 2-CH-429 on C-02.*

Cue:

Comments:

~~~~~

STEP 13 X Performance Steps: Open pressurizer aux. spray isolation, 2-CH-517.

GRADE X Standards: *Examinee places switch for 2-CH-517 to "OPEN" and
observes red light only lit on C-02.*

Cue:

Comments:

~~~~~

STEP 14     X Performance Steps: Close loop 1A and 2A charging isolations, 2-CH-518  
and 2-CH-519.

GRADE        X Standards:     *Examinee obtains keys and places 2-CH-518 and 2-CH-  
519 key-lock switches in "CLOSE" and observes green  
lights only lit for both valves on C-02.*

Cue:

Comments:

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-203

TITLE: Initiate Boron Precipitation Control  
(Alternate Method)

---

STEP 15      ☒ Performance Steps: Start Facility 1 HPSI pump.

GRADE \_\_\_\_      ☒ Standards:      *Examinee places "A" (or "B" if aligned) HPSI pump switch to "START" and observes red light lit and amperage indicated, as well as pump discharge pressure rising for the respective pump.*

Cue:

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

STOP TIME: 

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-203

Rev. 1

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

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

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

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

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

Validated Time (minutes): 15

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

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

Areas for Improvement:



## EXAMINEE HANDOUT

JPM ID Number: 203

### Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to initiate boron precipitation control per EOP 2541 Appendix 18.
- The examiner will act as the PEO or US, as required.

### Initial Conditions:

- The plant experienced a large-break LOCA.
- EOP 2525 was completed and the crew transitioned to EOP 2532 approximately 9 hours ago.
- All RCPs are off.
- SRAS has initiated.

# JOB PERFORMANCE MEASURE APPROVAL SHEET {PRIVATE }

I JPM Title: **Manually Placing EBFS in Operation on the Enclosure Building Filtration Region**

ID Number: JPM-130

Revision: 4

II. Initiated:

  
Fred Nygard  
Developer

7/15/2000  
Date

III. Reviewed:

  
Technical Reviewer

7/16/00  
Date

IV. Approved:

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

\_\_\_\_\_  
Date

  
Nuclear Training Supervisor

7/16/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-130

Rev. 4

Task Title: Manually Placing EBFS in Operation on the Enclosure Building Filtration Region

System: EBFS

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

Validated Time (minutes): 15

Task No.(s): NUTIMS #088-01-366 (088-044-01-01)

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

K/A No. 013-000-Gen. 9 K/A Rating 3.9/3.8

### 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 placed EBFS in operation on the E.B. filtration region.

Required Materials OP 2314G  
(procedures,  
equipment):

General References: OP 2314G, Section 4.1 (Rev. 13 chg 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

PM Number: JPM-130

Rev. 4

Initiating Cues:

- The Unit Supervisor has directed you to manually place "A" EBFS in operation on the E.B. filtration region for 2 hours.

Initial Conditions:

- A sign is hanging on the door to 38'6" West Penetration stating: "IF DOOR DOES NOT CLOSE NOTIFY CONTROL ROOM AT X4352".
- Enclosure Building Purge has been ongoing for several hours
- All other plant conditions are normal

Simulator Requirements:

- Initialize in any IC with EBFS not in operation.
- If Enclosure Building Purge Using Main Exhaust System is in operation, use OP 2314B section 4.11 to restore from this operation.

---

**\*\*\*\* 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

PM ID NUMBER: JPM-130

TITLE: Manually Placing EBFS in Operation on the Enclosure  
Building Filtration Region

---

START TIME:                     

STEP 1            Performance Steps:     Review equipment run hours data from PPC and record the "A" EBFS filter fan run hours in SM log.

GRADE               Standards:     *Examinee obtains "A" EBFS fan, F-25A, run hours from the PPC program for pump and fan motor run times, and states that it needs to be recorded in the SM log.*

Cue: Run hours are recorded in SM Log

Comments:     Examinee may also state that SP 2609D does not need to be completed due to not exceeding 720 hours run time during this operation.

~~~~~

STEP 2 Performance Steps: Perform the following:

- Terminate use of chemicals in the E.B.
- Ensure signs posted at entrances to E.B. prohibiting chemical use.
- Inspect E.B. and ensure no chemical use in progress.

GRADE Standards: *Examinee announces or notifies US of need to announce change of chemical use status over page, notifies HP to update status board, ensures signs are posted and an inspection is completed.*

Cue: All necessary actions/notifications have been completed

Comments:

~~~~~

## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-130

TITLE: Manually Placing EBFS in Operation on the Enclosure Building Filtration Region

STEP 2    Performance Steps: Perform the applicable action

- If enclosure building Purge capabilities are available, Refer to OP 2324B, Containment and Enclosure Building Purge, and Perform the following : 1) Initiate and Enclosure Building Purge using the Main Exhaust System for greater than or equal to 1 hour. 2) When at least 1 hour has elapsed , Terminate Enclosure Building Purge using the Main Exhaust System
- If enclosure building Purge capabilities are not available, perform the following : 1) Ensure no chemical use has occurred in the Enclosure Building for at least 48 hours prior to aligning EBFS to the Enclosure Building filtration region. 2) Request Technical support Engineering or other support personnel to conduct chemical fume evaluation walk down.

GRADE    Standards: *No action is required. See Cue.*

Cue: **All necessary actions/notifications have been completed**

Comments: **When the examinee gets to the step to perform an E.B. purge with the Main Exhaust system for one hour, inform them that the purge has been performed for an hour and the lineup has been returned to normal.**

~~~~~

STEP 3 Performance Steps: Notify Unit 1 Control Room of intentions to start EBFS.

GRADE Standards: *Examinee states they would contact or ask US to contact Unit 1 to inform them that EBFS will be running aligned to Unit 1 stack.*

Cue: **Acknowledge as Unit 1.**

Comments:

~~~~~

STEP 4    X Performance Steps: Align Condenser Air Removal flowpath to Unit 2 Stack:

- Open "COND AIR RMVL #2 STACK, EB-57".
- Close "COND AIR RMVL #1 STACK, EB-56" and "COND AIR RMVL #1 STACK, EB-55".

GRADE    X Standards: *Examinee opens EB-57 on C-06 and observes red light only is lit and closes EB-56 and EB-55 on C-06 and observes each respective green light only is lit.*

**PERFORMANCE INFORMATION**

PM ID NUMBER: JPM-130

TITLE: Manually Placing EBFS in Operation on the Enclosure  
Building Filtration Region

---

Cue:

Comments:

~~~~~

STEP 5 X Performance Steps: Establish a suction flowpath from the EBFS:
- Open "EBFS SUCT DMPR, EB-50".
- Open "HDR A ISOL, EB-51".

GRADE X Standards: *Examinee opens EB-50 and EB-51 on C-01 and observes
each respective red light only is lit.*

Cue:

Comments:

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-130

TITLE: Manually Placing EBFS in Operation on the Enclosure
Building Filtration Region

STEP 6 X Performance Steps: Start "A" EBFS fan, F-25A, and check "FAN A DIS
DMPR, EB-52," opens.

GRADE X Standards: *Examinee starts F-25A by taking handswitch "EBFS FAN A,
F-25A" to "START" and observing its red light only lit and
checking EB-52 open by observing its red light only lit.*

Cue:

Comments:

~~~~~

STEP 7       Performance Steps:    Monitor the following during operation:  
- Associated filter train D/P  
- Associated charcoal filter bank temperatures  
- "EBDP, PDI-8060"  
- Activity levels indicated on Unit 2 stack  
radiation monitor

GRADE       Standards:    *Examinee monitors D/P and temperatures for the "A" EBFS  
train by observing PDI 8075 and T!-8076. Examinee also  
observes PDI 8060 for the EB D/P and U-2 stack RM on RC-  
14, C-06, or PPC.*

Cue:

Comments:    If examinee does demonstrate what he is monitoring, question as to what they are  
monitoring, and why. The maximum values, per the precautions, for the filters are 2.6"  
H<sub>2</sub>O and 200°F.

~~~~~


PERFORMANCE INFORMATION

PM ID NUMBER: JPM-130

TITLE: Manually Placing EBFS in Operation on the Enclosure Building Filtration Region

STEP 8 Performance Steps: Perform the following:

- a. Ensure sign on entrance to 38'6" West Penetration Room Area Stating: "If door does not close, notify control room at extension 4352".
- b. As necessary to limit negative D/P, open the following (C-01) SPLY FAN AC-1" EB PURGE SPLY DMPR, AC-3"
- c. IF Enclosure building D/P exceeds -0.6 inch H_2O , Notify Technical Support Engineering.

GRADE Standards:

Examinee calls the PEO or talks to the US to ensure a sign is posted.

Examinee observes EB DP, PDI-8060, and evaluates need to take action (For example, if the reading were -0.7" H_2O , the examinee would take action to that would result in notification of Technical Support Engineering. If the reading were -0.5" H_2O , the examinee would not need to take action).

- Cue:
- When directed to check sign, as PEO or US respond that the sign is posted.
 - If asked if action must be take to limit the negative pressure so that doors may be operated, reply as the US to not take action at this time.

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

STOP TIME: 

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-130

Rev. 4

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: 130

Initiating Cues:

- The Unit Supervisor has directed you to manually place "A" EBFS in operation on the E.B. filtration region for 2 hours.

Initial Conditions:

- A sign is hanging on the door to 38'6" West Penetration stating: "IF DOOR DOES NOT CLOSE NOTIFY CONTROL ROOM AT X4352".
- Enclosure Building Purge has been ongoing for several hours
- All other plant conditions are normal

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Unload and Shutdown the "A" Diesel Generator

ID Number: JPM-059

Revision: 6

II. Initiated:

Fred Nygard

Fred Nygard
Developer

7/14/2000
Date

III. Reviewed:

Robert Commey

Technical Reviewer

7/16/00
Date

IV. Approved:

User Department Supervisor

Date

M. A. G.

Nuclear Training Supervisor

7/16/00
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-059 Rev. 6

Task Title: Unload and Shutdown the "A" Diesel Generator

System: EDG

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

Task No.(s): NUTIMS #064 01 121

Applicable To: SRO X RO X PEO X

K/A No.: 064--A4.06 K/A Rating: 3.9/3.9

Method of Testing:

Simulated Performance: _____ Actual Performance: X

Location:

Classroom: _____ Simulator: X In-Plant: _____

Task Standards: At the completion of this JPM, The 'A' D/G has been unloaded and secured per OP-2346A.

Required Materials • OP-2346A.
(procedures,equipment):

General References: OP-2346A, Section (Rev 23. , Ch 0.)

****** 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-059

Rev. 6

Initiating Cues:

- The Unit Supervisor has directed you to unload and shutdown the 'A' D/G using OP 2346A.

Initial Conditions:

- The 'A' D/G has been operating for four hours.
- All required data has been recorded on OPS Form 2346A-4.
- 'A' D/G running with a loading of 2600 KW and 1950 KVAR.
- Service water temperature is 58°F.
- Valve 2-DG-9A was not closed.

Simulator Requirements:

- Initialize at any IC with:
- 'A' D/G in parallel with the NSST or RSST
- 'A' D/G loaded to 2600 KW & 1950 KVAR

****** 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-059

TITLE: Unload and Shutdown the "A" Diesel Generator

START TIME: XXXXXXXXXX

STEP 1 Performance Steps:

NOTE

1. The use of step 4.7.1 should be avoided since it causes abrupt changes in engine loading and power output to the line.
2. During isochronous mode of operation (i.e., *not* in unit parallel), generator load is decreased by stopping components powered from applicable buses.

IF absolutely necessary, to immediately stop "A" DG, PERFORM the following:

- a. Using trip push button, TRIP "A" DG fuel racks OR simultaneously PRESS *both* "EMERG STOP" buttons for "A" DG (C-08).
- b. ENSURE the following (C-08):
 - "DG A FDR BKR, 15G-12U-2 (A312)" opens
 - Field excitation indicates 0 volts
 - Diesel engine shuts down

GRADE Standards: *Examinee determines that it is not necessary to perform this step*

Cue:

Comments:

~~~~~

STEP 2           Performance Steps: ENSURE required data has been recorded on OPS Form 2346A-4, "A DG Data Sheet."

GRADE         Standards: *Examinee asks if required data has been recorded*

Cue: As the US report that all required data has be recorded.

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059

TITLE: Unload and Shutdown the "A" Diesel Generator

STEP 3 X Performance Steps: W H E N all data has been recorded, ADJUST "A" DG "LOAD CNTL GOVERNOR CNTL" switch to reduce "A" DG load to approximately 1,400 kW (C-08).

GRADE ____ X Standards: *Examinee locates the 'A' D/G governor switch on C-08 and turns it to "LOWER" until KW meter indicates 1300-1400 KW.*

Cue:

Comments: Examinee implements step 4.7.5 (JPM step 5) while lowering load

~~~~~

STEP 4      \_ Performance Steps: I F possible, ALLOW DG to operate at approximately 1,400 kW for at least 5 minutes.

GRADE \_\_\_\_ \_ Standards:      *Examinee reads step and begins timing*

Cue:

Comments:

~~~~~

STEP 5 _ Performance Steps: W H E N lowering DG load, MAINTAIN kvar loading value at 50% of kW value, using "A" DG "VOLTAGE CNTL REG AUTO CNTL" (C-08).

GRADE ____ _ Standards: *Examinee monitors and controls kvar loading at approximately 50% of kW value using the "A" DG "VOLTAGE CNTL REG AUTO CNTL" (C-08).*

Cue: Report that 5 minutes have passed

Comments:

~~~~~



## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059

TITLE: Unload and Shutdown the "A" Diesel Generator

---

STEP 6         Performance Steps:

### **NOTE**

If operating in isochronous mode (i.e., *not* in unit parallel), step 4.7.6 does *not* apply.

WHEN 5 minutes at approximately 1,400 kW has elapsed, using "A" DG "VOLTAGE CNTL REG AUTO CNTL," REDUCE reactive load to approximately 100 kvar (C-08).

GRADE            Standards:      *Examinee reduces reactive load to 100 kvar by using the "A" DG "VOLTAGE CNTL REG AUTO CNTL switch.*

Cue:

Comments:

~~~~~

STEP 7 X Performance Steps: ADJUST "A" DG "LOAD CNTL GOVERNOR CNTL" switch to reduce "A" DG load to approximately 100 kW (C-08).

GRADE X Standards: *Examinee locates the 'A' D/G governor switch on C-08 and turns it to "LOWER" until KW meter indicates 50-150 KW.*

Cue:

Comments: Examinee may occasionally lower KVAR's during this step to maintain ~ 100 KVAR loading.

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-059 TITLE: Unload and Shutdown the "A" Diesel Generator

---

STEP 7      X Performance Steps: OPEN "DG A FDR BKR, 15G-12U-2 (A312)" (C-08).

GRADE       X Standards:      Examinee opens A312 by taking its handswitch to "TRIP" and observing its green light only lit.

Cue:

Comments:

~~~~~

STEP 8 Performance Steps: IF Technical Specifications ACTION Statement was logged for "A" DG being paralleled to its bus, LOG out of Technical Specifications ACTION Statement in SM Log.

GRADE Standards: *Examinee informs the US of this step.*

Cue: US has been informed.

Comments:

~~~~~

STEP 9         Performance Steps: ALLOW DG to operate unloaded for 2 to 3 minutes.

GRADE          Standards:      *Examinee reads step and waits 2-3 minutes*

Cue: Inform examinee that 2 minutes has passed

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059 TITLE: Unload and Shutdown the "A" Diesel Generator

STEP 10 ___ Performance Steps: TURN "UNIT PARALLEL SEL SW/12U," to "OFF" and
OBSERVE unit parallel white light *not* lit (C-08).

GRADE ___ ___ Standards: *Examinee locates the unit paralalled switch, turns it to
"OFF" and allows it to return to "NORMAL".*

Cue:

Comments:

~~~~~

STEP 11     \_\_\_ Performance Steps: TURN "A" DG "VOLT CNTL TRANS SW" to "MAN" (C-08).

GRADE \_\_\_     \_\_\_ Standards:     *Examinee TURN "A" DG "VOLT CNTL TRANS SW" to  
"MAN" (C-08).*

Cue:

Comments:

~~~~~

STEP 12 ___ Performance Steps: As necessary, ADJUST "A" DG "VOLTAGE CNTL
REG MAN CNTL" to maintain 4,160 volts (C-08).

GRADE ___ ___ Standards: *Examinee turns the regulator manual control switch to
"RAISE" or "LOWER" as necessary until 4100-4200V is
indicated on the D/G KV meter.*

Cue:

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059

TITLE: Unload and Shutdown the "A" Diesel Generator

---

STEP 13      \_      Performance Steps: OBSERVE "DIESEL GEN 12U VOLT ADJ HI/LO," *not* lit (window C-30, C-08).

GRADE \_\_\_\_      Standards:      *Examinee observes that annunciator C-30 is not lit*

Cue:

Comments:      If annunciator C-30 does alarm, the examinee must adjust voltage to clear the alarm and get as close to 4160V as possible (see JPM step 14)

~~~~~

STEP 14 _ Performance Steps: IF "DIESEL GEN 12U VOLT ADJ HI/LO" is lit, ADJUST "A" DG "VOLTAGE CNTL REG MAN CNTL" to clear annunciator and MAINTAIN 4,160 volts (4,100 to 4,200 volts) (window C-30, C-08).

GRADE ____ Standards: *If annunciator C-30 does alarm, the examinee must adjust voltage to clear the alarm and get as close to 4160V as possible*

Cue:

Comments:

~~~~~

STEP 15      \_\_\_\_      Performance Steps: TURN "A" DG "VOLT CNTL TRANS SW" to "AUTO" (C-08).

GRADE \_\_\_\_      Standards:      *Examinee turns "A" DG "VOLT CNTL TRANS SW" to "AUTO" (C-08).*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059 TITLE: Unload and Shutdown the "A" Diesel Generator

STEP 16 ___ Performance Steps: As necessary, ADJUST "A" DG "VOLTAGE CNTL, REG AUTO CNTL" to maintain 4,160 volts

GRADE ___ ___ Standards: *I Examinee turns the regulator manual control switch to "RAISE" or "LOWER" as necessary until 4100-4200V is indicated on the D/G KV meter.*

Cue:

Comments:

~~~~~

STEP 17     \_\_\_ Performance Steps: OBSERVE "DIESEL GEN 12U VOLT ADJ HI/LO," *not* lit (window C-30, C-08).

GRADE \_\_\_     \_\_\_ Standards:     *Examinee observes that annunciator C-30 is not lit*

Cue:

Comments:     If annunciator C-30 does alarm, the examinee must adjust voltage to clear the alarm and get as close to 4160V as possible (see JPM step 14)

~~~~~

STEP 18 ___ Performance Steps: IF "DIESEL GEN 12U VOLT ADJ HI/LO" is lit, ADJUST "A" DG "VOLTAGE CNTL REG MAN CNTL" to clear annunciator and MAINTAIN 4,160 volts (4,100 to 4,200 volts) (window C-30, C-08).

GRADE ___ ___ Standards: *If annunciator C-30 does alarm, the examinee must adjust voltage to clear the alarm and get as close to 4160V as possible*

Cue:

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-059

TITLE: Unload and Shutdown the "A" Diesel Generator

---

STEP 19     X Performance Steps: PERFORM the following:

- a. ADJUST "A" DG "LOAD CNTL GOVERNOR CNTL" to maintain 60 Hz (C-08).
- b. WHEN at least 2 to 3 minutes of unloaded operation have elapsed, PLACE "A" DG "MAN START-STOP" to "STOP" (C-08).

GRADE         X Standards:     *Examinee locates the 'A' D/G governor switch and turns it to "LOWER" or "RAISE" as necessary until 59.9-60.1 Hz is indicated on the D/G frequency meter.  
Examinee locates the start-stop switch, turns it to "STOP" and allows it to return to "AUTO".*

Cue:     Report that 2 to 3 minutes has passed.

Comments:

~~~~~

STEP 20 Performance Steps: WHEN "A" DG "STANDBY" light is lit (C-08), CLOSE "DG A HX SERV WTR SPLY, SW-89A" (C-06).

GRADE Standards: *Examinee observes stanby light lit and then closes 2-SW-89A by taking its handswitch to "CLOSE" until its green light only is lit and observes 2-SW-231A is open by its red light only lit.*

Cue:

Comments: After the D/G is secured, 2-SW-231A will open automatically after a time delay. During this time, 2-SW-89A cannot be closed.

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

STOP TIME:

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-059

Rev. 6

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: 059

Initiating Cues:

- The Unit Supervisor has directed you to unload and shutdown the 'A' D/G using OP 2346A.

Initial Conditions:

- The 'A' D/G has been operating for four hours.
- All required data has been recorded on OPS Form 2346A-4.
- 'A' D/G running with a loading of 2600 KW and 1950 KVAR.
- Service water temperature is 58°F.
- Valve 2-DG-9A was not closed.

JOB PERFORMANCE MEASURE APPROVAL SHEET

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

ID Number: JPM-210

Revision: 1

II. Initiated:



Fred Nygard
Developer

7/14/2000

Date

III. Reviewed:



Technical Reviewer


7/16/00

Date

IV. Approved:

User Department Supervisor

Date



Nuclear Training Supervisor

7/16/00

Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-210 Rev. 1

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

System: RBCCW

Time Critical Task: Yes _____ No X

Validated Time (minutes): 15

Task No.(s): 000 04 220

Applicable To: SRO X RO X PEO _____

K/A No.: 008 A2.02 K/A Rating: 3.2/3.5
 008 A4.01 3.3/3.1

Method of Testing:

Simulated Performance: _____ Actual Performance: X

Location:

Classroom: _____ Simulator: X In-Plant: _____

Task Standards:

At the completion of this JPM, The "B" RBCCW HX has been placed in service and the "A" RBCCW HX has been removed from service, except for securing SW to the "A" RBCCW HX.

Required Materials

(procedures,equipment):

- OP 2330A
- OP-2326A

General References:

- OP 2330A Section 4.2 (Rev19. , Ch.3)
- OP-2326A Section 4.9 (Rev 20)

***** 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-210

Rev. 1

Initiating Cues:

- You are the SPO.
- The Unit Supervisor has directed you to place the "B" RBCCW HX in service per OP 2330A section 4.2.2 and to remove "A" RBCCW HX from service.
- I will act as the US/PEO as needed.

Initial Conditions:

- Maintenance must replace the head gasket on the "A" RBCCW HX due to a RBCCW leak
- "A" & "C" RBCCW HX's and pumps are in service
- Bus 24E is aligned to Bus 24C
- The "B" RBCCW HX has not been isolated or drained and has NOT been in fresh water layup.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1

Simulator Requirements:

- A normal RBCCW lineup ("A" & "C" pumps and heat exchangers in service)
- Bus 24E aligned to Bus 24C
- "B" RBCCW HX TCV failed closed (CCR03 @ 95)
- "A" & "C" RBCCW HX TCV's set to 75°F (CCR02 & CCR04 @ 75)
- Ensure 2-RB-251A is open

***** 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-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

START TIME:

STEP 1 _ Performance Steps: Refer To OP 2326A, "Service Water System" and
ESTABLISH service water flow to "B" RBCCW HX.

GRADE ____ _ Standards: *Examinee refers to OP 2326A to establish service water
flow to the "B" RBCCW HX.*

Cue:

Comments: It is acceptable for the examinee to complete JPM steps 12 and 13 (from OP
2330A) while waiting for the PEO to complete local valve alignments in OP
2330A)

~~~~~

STEP 2               Performance Steps: IF "B" RBCCW heat exchanger was placed in fresh  
water layup, request Chemistry Department SAMPLE  
"B" RBCCW heat exchanger for chlorine prior to  
placing in service [Ref. 6.18].

GRADE \_\_\_\_        Standards:    *No action required.*

Cue:    As listed in the initial conditions, the "B" RBCCW is not in fresh water  
layup

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

- STEP 3 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: *Examinee requests/directs the PEO to ensure "B" RBCCW HX inlet and outlet X-ties, 2-SW-7A & -10A are closed*

Cue: **Report as the PEO that 2-SW-7A & -10A are already closed**

Comments: 2-SW-7A & -10A are already closed in the simulator setup.

~~~~~

- STEP 4           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: *Examinee requests/directs the PEO to ensure the "B" RBCCW HX inlet and outlet X-ties, 2-SW-7B & -10B are open*

Cue: **Report as the PEO that 2-SW-7B & -10B are already open**

Comments: 2-SW-7B & -10B are already open in the simulator setup.

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

- STEP 5 _ Performance Steps: IF "B" RBCCW heat exchanger was isolated and drained for maintenance or fresh water layup, PERFORM the following:
- a. OPEN "B" RBCCW heat exchanger SW inlet, 2-SW-8B.
 - b. FILL and VENT "B" RBCCW heat exchanger.

GRADE ____ _ Standards: *No action required.*

Cue: *As given in the initial conditions, the "B" RBCCW heat exchanger was not isolated, drained or in fresh water layup.*

Comments:

~~~~~

- STEP 6      \_      Performance Steps: At "B" RBCCW heat exchanger temperature controller, ENSURE the following (TIC-6307):
- Mode switch in "A" (inside controller)
  - Temperature control knob set greater than 200°F

GRADE \_\_\_\_      \_      Standards:      *Examinee requests/directs the PEO to Ensure "B" RBCCW HX temperature controller is in "AUTO" and set to > 200°F.*

Cue: *Temp. controller is in "AUTO" and set for > 200°F (failed closed) in the summer mode*

Comments:      **Initial simulator conditions have set CCR03 to 200°F (failed closed)**

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service
and Removing RBCCW Heat Exchanger "A"

STEP 7 ☐ Performance Steps: ENSURE "B" RBCCW heat exchanger temperature control is in *either* "SUMMER VALVE, 2-SW-8.1B" or "WINTER VALVE, 2-SW-246", as direct by Control Room (Panel-6307).

GRADE ☐ Standards: *Examinee requests/directs the PEO to Ensure "B" RBCCW HX temperature control is in "SUMMER"*

Cue: *If asked whether to use "SUMMER VALVE" or "WINTER VALVE" direct the examinee to use "SUMMER VALVE". As the PEO, report the Temp. controller is in the summer mode.*

Comments:

~~~~~

STEP 8      ☐ Performance Steps: LOG entry into Technical Specifications ACTION Statement 3.7.4.1.

GRADE ☐      Standards:      *Examinee informs US of need to log into action statement*

Cue: *As US, the action statement is logged into*

Comments:

~~~~~

STEP 9 ☒ Performance Steps: OPEN "B" RBCCW heat exchanger SW outlet, 2-SW-9B.

GRADE ☐ ☒ Standards: *Examinee requests/directs the PEO to Open "B" RBCCW HX outlet, 2-SW-9B*

Cue: *(See comment) and report as PEO that 2-SW-9B is open*

Comments: Set SWR24 to 100% when directed

~~~~~



### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 10     X Performance Steps:

#### **NOTE**

1. RBCCW heat exchanger temperature controller is normally set at 75°F. However, when injection temperature is above 70°F, a setpoint between 75 and 80°F is required. The maximum allowable RBCCW heat exchanger outlet temperature is 85°F.
2. As the next step occurs, flow noise from the heat exchanger should be heard.

Slowly LOWER "B" RBCCW heat exchanger temperature control knob to setting specified by Control Room (TIC-6307).

GRADE         X Standards:     Examinee requests/directs the PEO to lower the "B" RBCCW temperature control knob to 75°F.

Cue: **If asked as US what temp. to set the TCV at, inform the examinee to have it set at 75°F.**

Comments:     The booth instructor will have to set the 75° using CCR03 @ 75.

~~~~~

STEP 11 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 refers or returns to OP 2330A step 4.2.2.*

Cue:

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 12      \_      Performance Steps: IF "B" RBCCW HX has been drained, ENSURE the following:

- HX is filled and vented
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

GRADE \_\_\_\_      Standards:      *No action required.*

Cue: As given in the initial conditions:

- HX has not been drained or isolated.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

Comments: Depending on the examinees sequencing, this step may have already been completed.

~~~~~

STEP 13 _ Performance Steps: IF electrical bus 24E must be aligned to bus 24D, to prevent cross tying Facility 1 and Facility 2 RBCCW headers, PERFORM the following:

- 1) Red TAG "B" RBCCW pump switch in "PULL TO LOCK" (C-06).
- 2) CLOSE and red TAG the following (C-06):
 - "PP DIS HDR B/C X-TIE, RB-251B"
 - "PP B HDR B SUCT, RB-211D"
 - "HDR B HX-B OUT, RB-4.1D"
- 3) ENSURE "PP B HDR A SUCT, 2-RB-211C" is open.

GRADE ____ Standards: *No action required*

Cue:

Comments: Depending on the examinees sequencing, this step may have already been completed.

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**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 14        Performance Steps: IF "A" RBCCW pump is operating ENSURE "HDR B  
HX-B OUT, RB-4.1D" closed.

GRADE           Standards:     *Examinee ensures 2-RB-4.1D is closed by observing its  
green light only is lit.*

Cue: 

Comments:

~~~~~

STEP 15 X Performance Steps: OPEN "HDR A HX-B OUT, RB-4.1C" (C-06).

GRADE X Standards: *Examinee opens 2-RB-4.1C by taking its handswitch to
"OPEN" until its red light only is lit.*

Cue: 

Comments:

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-210

TITLE: Placing RBCCW Heat Exchanger "B" in Service  
and Removing RBCCW Heat Exchanger "A"

---

STEP 16        Performance Steps: MONITOR header "A" flow on FI-6035 to ensure that it  
remains stable (C-06).

GRADE        Standards:     *Examinee observes FI-6035 for stable flow.*

Cue: 

Comments:

~~~~~

STEP 17 X Performance Steps: CLOSE "HDR A HX-A OUT, RB-4.1A" (C-06).

GRADE X Standards: *Examinee closes 2-RB-4.1A by taking its handswitch to
"CLOSE" until its green light only is lit and observes FI-
6035 for stable flow.*

Cue: 

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

STOP TIME: 

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-210

Rev. 1

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No X

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

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

Areas for Improvement:

EXAMINEE HANDOUT

JPM ID Number: 210

Initiating Cues:

- You are the SPO.
- The Unit Supervisor has directed you to place the "B" RBCCW HX in service per OP 2330A section 4.2.2 and to remove "A" RBCCW HX from service.
- I will act as the US/PEO as needed.

Initial Conditions:

- Maintenance must replace the head gasket on the "A" RBCCW HX due to a RBCCW leak
- "A" & "C" RBCCW HX's and pumps are in service
- Bus 24E is aligned to Bus 24C
- The "B" RBCCW HX has not been isolated or drained and has NOT been in fresh water layup.
- Valves are aligned as specified on OPS Form 2611C-2, "RBCCW System Valve Alignment, Facility 1"

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Supplying Emergency Backup Air to 2-CH-192

ID Number: JPM-045

Revision: 5

II. Initiated:

M. Cole
Developer

7/6/99
Date

III. Reviewed:

Technical Reviewer

7/6/99
Date

IV. Approved:

User Department Supervisor

7/12/99
Date

Nuclear Training Supervisor

7/12/99
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-045 Rev. 5

Task Title: Supplying Emergency Backup Air to 2-CH-192

System: Instrument Air

Time Critical Task: Yes _____ No X

Validated Time (minutes): 10

Task No.(s): NUTIMS #078-01-056

Applicable To: SRO X RO X PEO X

K/A No.: 2.1-P-2.1.23 K/A Rating: 3.9/4.0

Method of Testing:

Simulated Performance: X Actual Performance: _____

Location:

Classroom: _____ Simulator: _____ In-Plant: X

Task Standards:

At the completion of this JPM, the examinee has demonstrated alignment of emergency backup air to 2-CH-192.

Required Materials

(procedures,equipment):

- OP 2332B

General References:

OP 2332B, Section 4.21 (Rev. 18, Ch. 4)

****** 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-045

Rev. 5

Initiating Cues:

- The Unit Supervisor has directed you to supply emergency backup air to 2-CH-192.

Initial Conditions:

- The plant has suffered a loss of Instrument Air.

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-045

TITLE: Supplying Emergency Backup Air to 2-CH-192

START TIME:

STEP 1 Performance Steps: Adjust backup air PCV, 2-IA-594, to minimum (fully counterclockwise).

GRADE Standards: *Examinee locates air bottle and 2-IA-594 and explains they would turn valve fully counterclockwise.*

Cue: Regulator valve is fully counterclockwise.

Comments:

~~~~~

STEP 2        X Performance Steps: Slowly open master stop C-4A, 2-IA-602.

GRADE           X Standards:     *Examinee locates 2-IA-602 and explains they would slowly open it by turning it in the counterclockwise direction.*

Cue: Valve is open.

Comments:

~~~~~

STEP 3 X Performance Steps: Open master stop, 2-IA-593.

GRADE X Standards: *Examinee locates 2-IA-593 and explains they would open it by turning it in the counterclockwise direction.*

Cue: Valve is open.

Comments:

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-045 TITLE: Supplying Emergency Backup Air to 2-CH-192

STEP 4 ☒ Performance Steps: Adjust backup air PCV, 2-IA-594, clockwise and Establish 100 psig outlet pressure.

GRADE ____ ☒ Standards: *Examinee simulates turning 2-IA-594 in the clockwise direction, while observing the PCV outlet pressure gauge, until 100 psig is achieved.*

Cue: *Use pen to show pressure rise to 100 psig and then stabilizing when examinee stops turning valve.*

Comments:

~~~~~

STEP 5      ☒ Performance Steps: Slowly open master stop, 2-IA-596.

GRADE \_\_\_\_ ☒ Standards: *Examinee locates 2-IA-596 and explains they would open it by turning it in the counterclockwise direction.*

Cue: *Valve is open.*  
*After this step is completed, the JPM is considered complete.*

Comments: Examinee may also state the monitoring requirements while supplying backup air (daily or every 4 hours while in an EOP), but it is not required.

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

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-045

Rev. 5

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: 045

Initiating Cues:

- The Unit Supervisor has directed you to supply emergency backup air to 2-CH-192.

Initial Conditions:

- The plant has suffered a loss of Instrument Air.

JOB PERFORMANCE MEASURE APPROVAL SHEET{PRIVATE }

I. JPM Title: Local Manual Airstart of the 'A' Diesel Generator

ID Number: JPM-060

Revision: 6

II. Initiated:

Fred Nygard  
Fred Nygard  
Developer

7/15/2000  
Date

III. Reviewed:

Robert C. Connor  
Technical Reviewer

7/16/00  
Date

\_\_\_\_\_  
Instructional Reviewer

\_\_\_\_\_  
Date

IV. Approved:

\_\_\_\_\_  
Operations Supervisor

\_\_\_\_\_  
Date

[Signature]  
Nuclear Training Supervisor

7/16/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

FACILITY: MP-2

EXAMINEE: \_\_\_\_\_

JPM Tracking Number: JPM-060

Validated Time: 15 Minutes

Task Title: **Local Manual Airstart of the "A" Diesel Generator**

Time Critical Task: No

Task No. 064-210-01-01

Rev. 6

K/A No. 064-000-A4.06

K/A Rating: 3.9/3.9

Method of Testing:

Simulate Performance X

Actual Performance \_\_\_\_

Classroom \_\_\_\_

Simulator \_\_\_\_

Plant X

Task Standards:

A local manual airstart of the "A" D/G has been completed.

Required Materials:

EOP-2541 Appendix 23-C

General References:

EOP-2541 Appendix 23-C

\* READ TO THE OPERATOR \*

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 and log entries as if the evolution was actually being performed.

## JOB PERFORMANCE MEASURE WORKSHEET (Continued)

Initiating Cues:

- The US directs you to perform a local manual air start of the "A" per the EOP Standard Appendices Attachment 23-C contingency step 8.1

Initial Conditions:

- The plant has tripped and the US is currently using EOP Standard Appendices Attachment 23-C to Energize 4.16 kV Bus 24C From DG A



## JOB PERFORMANCE MEASURE WORKSHEET (Continued)

Simulator Requirements: N/A

### **NOTE TO EXAMINER:**

Under NO circumstances must the examinee be allowed to manipulate any devices during the performance of this JPM.

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

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

PERFORMANCE INFORMATION

FACILITY: MP-2

SYSTEM: Emergency Diesel Generators

JPM NUMBER: JPM-060

Task Title: Local Manual Airstart of the "A" Diesel Generator

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

STEP 1 \_\_\_\_\_ Performance Steps: Ensure communications established between an operator at DG A and the Control Room.

GRADE \_\_\_\_\_ Standards: Examinee states that he/she gets a set of headphones to use in the "A" D/G room and after arriving in the room, plugs them into the maintenance jack

Cue: Headphones are plugged into jack.

Comments:

~~~~~

STEP 2 X Performance Steps: Press "ALARM RESET" pushbutton.

GRADE _____ X Standards: Examinee locates the "ALARM RESET" button on the DG gageboard and states that he/she presses it.

Cue: Button has been pressed.

Comments:

~~~~~

## PERFORMANCE INFORMATION (Continued)

JPM NUMBER: JPM-060

Task Title: Local Manual Airstart of the "A" Diesel Generator

STEP 3    Performance Steps: Ensure the shutdown relay is reset by observing blue pin in the center of the relay panel fully extended (northwest corner of the DG).

GRADE    Standards: Examinee locates the shutdown relay "SDR" and verifies that it is reset by observing that the blue pin in the center of the relay is fully extended.

Cue: Blue pin is fully out.

Comments: The SDR is located in the middle of RELAY CABINET, TO40 at the northwest corner of the diesel.

~~~~~

STEP 4 X Performance Steps: Unlock and close 2-DG-88A, D/G 12U Air Start Vent Header Isolation.

GRADE X Standards: Examinee locates 2-DG-88A and states that he uses a "valve lock" key to unlock it, removes the chain and closes it by turning the handwheel in the clockwise direction until full inward stem travel.

Cue: Valve lock unlocked; Chain removed; Valve stem lowering; valve stem fully in.

Comments: 2-DG-88A may already be shut due to a caution tag. In this case, no action is required by the examinee and the step becomes not critical.

~~~~~

## PERFORMANCE INFORMATION (Continued)

JPM NUMBER: JPM-060

Task Title: **Local Manual Airstart of the "A" Diesel Generator**

STEP 5 X Performance Steps, Start the DG by performing the following steps at the same time:

- 1) Turn the "A" DG "MAN START-STOP" switch to "START" C-08).
- 2) Locally press the lever on DG-94A "Control Air 2-DG-92A Supply".

GRADE     X Standards: Examinee contacts the control room and coordinates with the control operator to turn the "A" D/G MAN START-STOP switch to "START" on C-08 while the examinee locates 2-DG-94A and states that he pulls back on and holds the lever at the same time as the control operator takes his switch to "START".

Cue: Acknowledge the request to turn the "A" D/G MAN START-STOP switch to "START", report that the switch is in "START". Lever is back; Air is bleeding off; D/G is turning over.

~~~~~

PERFORMANCE INFORMATION (Continued)

JPM NUMBER: JPM-060

Task Title: **Local Manual Airstart of the "A" Diesel Generator**

STEP 6 Performance Steps: When the "A" DG has started, release the lever on 2-DG-94A.

GRADE Standards: Examinee states that when the sound of the D/G indicates that it is started, he releases the bypass lever.

Cue: D/G is running; lever is back to its normal position.

Comments:

~~~~~

STEP 7    Performance Steps: Open and lock 2-DG-88A, Air Start Vent Header Isolation.

GRADE    Standards: Examinee states that he opens 2-DG-88A by turning its handwheel in the counterclockwise direction until full outward stem travel, installs the chain on the valve, and locks it.

**Cue: Valve stem rising; valve stem fully out; chain installed; chain locked.**

Comments: 2-DG-88A may be shut due to a caution tag. In this case, no action is required by the examinee - the valve should not be opened. After this step is completed, the JPM is considered complete.

Stop Time: \_\_\_\_\_

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-060 Rev. 6

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

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

Evaluator: \_\_\_\_\_

Validated Time (min): 15 Actual Time to Complete (min): \_\_\_\_

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

Result of oral questions: Number of questions \_\_\_\_\_

Number of Correct Responses \_\_\_\_\_

Score \_\_\_\_ %

Areas for Improvement:

## EXAMINEE HANDOUT

JPM Number: JPM-060

### Initiating Cues:

- The US directs you to perform a local manual air start of the "A" per the EOP Standard Appendices Attachment 23-C contingency step 8.1

### Initial Conditions:

- The plant has tripped and the US is currently using EOP Standard Appendices Attachment 23-C to Energize 4.16 kV Bus 24C From DG A

## JOB PERFORMANCE MEASURE APPROVAL SHEET

JPM Title: Display Inadequate Core Cooling System Parameters

ID Number: JPM-064

Revision: 5

**II. Initiated:**

*Fred Nygard*  
Fred Nygard  
Developer

07/15/2000  
Date

III. Reviewed:

  
Technical Reviewer

7/16/00  
Date

IV. Approved:

---

User Department Supervisor

---

Date

  
Nuclear Training Supervisor

7/16/00  
Date



## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-064

Rev. 5

Task Title: **Display Inadequate Core Cooling System Parameters**

System: ICC

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

Validated Time (minutes): 15

Task No.(s): NUTIMS # 017-01-011

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

K/A No. 2.1.30 K/A Rating 3.9/3.4

### Method of Testing:

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

### Location:

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

### Task Standards:

At the completion of this JPM, the examinee has recorded the following Inadequate Core Cooling System parameters in accordance with OP 2387G:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Required Materials  
(procedures,  
equipment):

None

General References: OP 2387G, Section 4.1 (Rev.4)

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

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

## JOB PERFORMANCE MEASURE WORKSHEET

Initiating Cues: The Unit Supervisor has directed you to determine the following data from the Inadequate Core Cooling Monitoring System:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Initial Conditions:

All prerequisites to perform this task have been met

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. Examinees may operate the touch screen to obtain the data. **NO** other operations may be performed during this JPM.

**PERFORMANCE INFORMATION**

PM ID NUMBER: JPM-064

TITLE: Display ICC System Parameters

---

START TIME: 

STEP 1 X Performance Steps: IF "DISP DIR" selection box is available on the display screen (upper right), PRESS "DISP DIR" selection Box.

GRADE     X Standards: Display Directory screen displayed.

Cue: 

Comments: This step is critical only if the Display Directory page is not displayed.

~~~~~

STEP 2 X Performance Steps: PRESS the "Core Summary" selection box.

GRADE X Standards: Core Summary screen displayed.

Cue: 

Comments:

~~~~~

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-064

TITLE: Display ICC System Parameters

---

STEP 3 X Performance Steps: SELECT the desired parameter as follows:


- PRESS "Saturation Margin" on the display screen to display the "Saturation Margin" page.
- PRESS "Reactor Level" on the display screen to display the "Reactor Level" page.
- PRESS "Maximum CET Temp" on the display screen to display the "Maximum CET Temp" page.

GRADE     X Standards:

- "Saturation Margin" page displayed and data recorded.
- "Reactor Level" page displayed and data recorded.
- "Maximum CET Temp" page displayed and data recorded.

Cue: 

Comments: Method of recording data is not critical.  
**After this step is completed, the JPM is considered complete.**

STOP TIME: 

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-064

Rev. 5

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: 064

Initiating Cues:      The Unit Supervisor has directed you to determine the following data from the Inadequate Core Cooling Monitoring System:

- A) Saturation Margin
- B) Reactor Level
- C) Maximum CET Temperature

Initial Conditions:      All Prerequisites to perform this task have been met.

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Restart RCPs as Part of an Excess Steam Demand

ID Number: JPM-080

Revision: 4

II. Initiated:

*Fred Nygard*

Fred Nygard  
Developer

07/15/00  
Date

III. Reviewed:

*Robert Commey*

Technical Reviewer

7/16/00  
Date

IV. Approved:

User Department Supervisor

Date

*MLB*

Nuclear Training Supervisor

7/16/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-080                      Rev. 4

Task Title: **Respond to an excess steam demand and Start a Reactor coolant Pump**

System: Reactor coolant Pump

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

Validated Time (minutes): 20

Task No.(s): 000 05 224; 003 01 031

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

K/A No.: E05 EA1.1      K/A Rating: 3.9/4.2

### Method of Testing:

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

### Location:

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

### Task Standards:

At the completion of this JPM, Examinee determines that RCP restart requirements are met and restarts an RCP.

### Required Materials

(procedures,equipment):

- EOP 2536
- EOP 2541 Appendix 5

### General References:

- EOP 2536
- EOP 2541 Appendix 5

### **\*\*\*\* 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-80

Rev. 4

### Initiating Cues:

- The Unit Supervisor has directed you to perform steps 39 and 40 of EOP 2536 to determine if the RCP restart criteria are met and, if so, start the 'A' RCP and then the 'C' RCP.
- All other EOP actions will be handled by others.
- I will act as the US.

### Initial Conditions:

- Plant has been manually tripped due to a steam leak in the Turbine Building
- The steam leak was stopped when the MSIVs were closed.
- Standard Post Trip Actions have been completed
- The shift is in EOP 2536.
- No change in RCS or RCP valve alignments has occurred.
- The 6.9 KV buses failed to transfer to the RSST on the trip, but have since been reenergized

### Simulator Requirements:

- Initialize at a normal 100% power IC and perform the following:
- Enter ED08A & ED08B to prevent auto transfer of 25A & 25B to the RSST
- Enter MS03 (30%) for Main Steam header rupture downstream of the MSIVs
- Manually trip the plant and then perform EOP 2525 actions
- Open the RCP breakers
- Allow S/G pressure to lower to ~ 800 psia and then shut the MSIVs
- Perform above actions rapidly enough so that SIAS is not initiated.
- Place all Condensate pumps in pull-to-lock
- Ensure main feed is secured and aux feed to both S/Gs is in operation
- Energize Bus 25A & Bus 25B from the RSST
- Place the simulator in freeze and snapshot for subsequent exams
- When the examinee has had time to look at the steps needed in EOP 2536 and is ready, place the simulator in run.

---

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

1. Critical steps for this JPM are indicated with an "X". For the examinee to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.
2. When examinee states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question examinee for details of simulated actions / observations (i.e. "What are you looking at?" or "What are you observing?").
4. 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-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

---

START TIME: 

STEP 1                      Performance Steps: If RCP restart is desirable, **PERFORM ALL** of the following:

- a.      ENSURE RCS pressure and temperature are within the limits of the RCP NPSH requirements. Refer to Appendix 2, "Figures"
- b.      ENSURE electrical power is available to the RCPs.
- c.      ENSURE pressurizer level is 35 and 70%.
- d.      ENSURE at least one steam generator is available for RCS heat removal with a level of 40 to 70%
- e.      IF the condition in steps 39.a through 39.d are satisfied, ENSURE that RCPs are prepared for restart. Refer to Appendix 5, 'RCP Restart.'

GRADE    

Standards:              *Examinee performs the following*

- a.      *Refers to Appendix 2, "Figures" or calls up RCP NPSH on PPC and determines that pressure is above the RCP NPSH requirement curve*
- b.      *Determines that electrical power is available to the RCPs by observing 6.9 KV Bus voltage on C08.*
- c.      *Determines that pressurizer level is 35 and 70%.*
- d.      *determines that at least one steam generator is available for RCS heat removal with a level of 40 to 70%*
- e.      *Refers to Appendix 5, 'RCP Restart.'*

Cue:

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

STEP 2

Performance Steps:

Note

1. RCPs cannot be started with RCS Tc less than or equal to 275°F.
2. Tech Support or Engineering should be consulted prior to anystarting an RCP.

Check RCP cooling water flow low alarms are clear (C-02)

- RCP A (DA-17)
- RCP B (DA-21)
- RCP C (DA-25)
- RCP D (DA-29)

GRADE ____

Standards:

*Reads note and determines that conditions have been met.
Determines that RCP cooling water flow low alarms are clear.*

Cue: If asked, Tech Support concurs with the RCP restart.

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

---

STEP 3      \_ Performance Steps: CHECK that **ONE** of the RCP bleedoff flow paths exist:

- a. To the primary drain tank through
  - CH-507, RCP bleedoff relief isolation
  - CH-199, controlled bleedoff relief valve
- b. To the VCT through
  - 2-CH-506, RCP bleedoff isolation
  - 2-CH-198, RCP bleedoff to VCT
- c. To the Equipment Drain Sump Tank through
  - 2-CH-506, RCP bleedoff isolation
  - 2-CH-505, RCP bleedoff to Equipment Drain Sump Tank isolation

GRADE \_\_\_\_ Standards: *Determines that one of the bleed off flow paths exist. Examinee may continue to the next step in the procedure after determination that the path to the PDT exists. The examinee may also examine all flow paths and determine that the RCP seal bleed off is aligned to the VCT by verifying that red light only is lit on 2-CH-506 and that an output signal is present on PIC-215 with the controller output switch selected to the VCT (2-CH-198).*

Cue:

Comments: Due to physical limitations of the limit switch that monitors the position of 2-CH-198 and 2-CH-505, the green light remains lit until the valve is wide open.

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

---

- STEP 4      \_      Performance Steps:
- IF RCP A is selected for restart CHECK that the restart criteria are met by performing Attachment 5-A, "RCP A restart Criteria."
  - IF RCP B is selected for restart CHECK that the restart criteria are met by performing Attachment 5-B, "RCP B restart Criteria."
  - IF RCP C is selected for restart CHECK that the restart criteria are met by performing Attachment 5-C, "RCP C restart Criteria."
  - IF RCP D is selected for restart CHECK that the restart criteria are met by performing Attachment 5-D, "RCP D restart Criteria."

GRADE \_\_\_\_      Standards:      *Proceeds to the attachments for the 2 RCPs to be started.*

If asked, state that RCPs 'A' and 'C' are to be started.

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

STEP 5 _ Performance Steps: Check that the RCP restart criteria listed in the following table are met:

RCP *	Restart Criteria	C-04R	Required Value
	Upper Guide Bearing Temperature	HS-150-1, #6	$\leq 194^{\circ}\text{F}$
	Lower Guide Bearing Temperature	HS-150-1, #7	$\leq 194^{\circ}\text{F}$
	Upper Thrust Bearing Temperature	HS-150-1, #8	$\leq 194^{\circ}\text{F}$
	Lower Thrust Bearing Temperature	HS-150-1, #9	$\leq 194^{\circ}\text{F}$
	Anti-reverse Bearing Temperature	HS-150-1, #10	$\leq 194^{\circ}\text{F}$
	Upper Oil Reservoir Level	HS-150-3, #1	73% to 92.1%
	Lower Oil Reservoir Level	HS-150-3, #2	78% to 96%

	Middle Seal Pressure	HS-150-2, #1	Proportional to RCS Pressure
	Upper seal Pressure	HS-150-2, #2	Proportional to RCS Pressure
	Vapor Seal Pressure	HS-150-2, #3	Proportional to RCS Pressure

GRADE _ Standards: *Examinee operates instrumentation selector switches to determine all parameters are in limits for the 'A' and 'C' RCPs.*

Cue:

Comments: The required value table provided above is similar for all RCPs except that the required oil reservoir levels criteria varies in Appendix 5A - 5D.

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

---

STEP 6           Performance Steps: IF RCP restart is desired AND RCP restart criteria are satisfied, **PERFORM** the following:

- a.      **MAINTAIN** pressurizer level 35 to 70% by **ANY** of the following:
  - 1)      **START** charging pumps as necessary to control pressurizer level
  - 2)      IF pressurizer pressure is less than 1300 psia **START** HPSI pumps as necessary to control pressurizer level.

GRADE                Standards:      *Examinee determines that pressurizer level can be maintained without any action*

Cue:

Comments:

~~~~~

STEP 7 Performance Steps: **SELECT** an RCP in the unaffected loop to be started.

GRADE Standards: *Examinee selects the 'A' RCP*

Cue: **If asked as the US, state that neither loop is affected.**

Comments:

~~~~~



### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-080

TITLE: Restart RCPs as Part of an Excess Steam Demand

---

STEP 8      ☒ Performance Steps: START the oil lift pump associated with the selected RCP.

GRADE ☐      ☒ Standards:      *Examinee places the handswitch for the 'A' oil lift pump in "Start".*

Cue:

Comments:

~~~~~

STEP 9 ☒ Performance Steps: WHEN the oil lift pump has operated for at least two minutes, START the selected RCP.

GRADE ☐ ☒ Standards: *After 2 minutes have elapsed, examinee starts the 'A' RCP by turning the handswitch to start and then releases it after observing the red only breaker position light. Examinee may also observe amperage indication.*

Cue: **Report that 2 minutes have elapsed**

Comments:

~~~~~

STEP 10      ☐ Performance Steps: WHEN the "RCP LO SPEED TRIP" alarm for the started RCP clears, PLACE the switch for the associated oil lift pump in "AUTO"

GRADE ☐      ☐ Standards:      *Examinee places the switch for the associated oil lift pump in 'AUTO'.*

Cue:

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

STOP TIME: XXXXXXXXXX

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-080

Rev. 4

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

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: 080

### Initiating Cues:

- The Unit Supervisor has directed you to perform steps 39 and 40 of EOP 2536 to determine if the RCP restart criteria are met and, if so, start the 'A' RCP and then the 'C' RCP.
- All other EOP actions will be handled by others.
- I will act as the US.

### Initial Conditions:

- Plant has been manually tripped due to a steam leak in the Turbine Building
- The steam leak was stopped when the MSIVs were closed.
- Standard Post Trip Actions have been completed
- The shift is in EOP 2536.
- No change in RCS or RCP valve alignments has occurred.
- The 6.9 KV buses failed to transfer to the RSST on the trip, but have since been reenergized

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Temperature Control of the Quench Tank

ID Number: JPM-202

Revision: 1

II. Initiated:



Fred I. Nygard

Developer

7/14/2000

Date

III. Reviewed:



Technical Reviewer

7/16/00

Date

IV. Approved:

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

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Nuclear Training Supervisor

7/16/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-202                      Rev. 1

Task Title: Recirculate and Cool the Quench Tank and Primary Drain Tank

System: Pressurizer Pressure Control System

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

Validated Time (minutes): 5

Task No.(s): NUTIMS #007 01 018

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

K/A No.: 010 A2.03      K/A Rating: 4.1/4/2

K/A No.: 010 A1.03      K/A Rating: 2.9/3.2

### Method of Testing:

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

### Location:

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

### Task Standards:

At the completion of this JPM, Examinee establishes proper flowpath and cooling of the Quench Tank.

### Required Materials

- OP 2301A

### General References:

OP 2301A Section 4.1 (Rev 10. , Ch.3 )

### **\*\*\*\* 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-202

Rev. 1

Initiating Cues:

- The Unit Supervisor has directed you to reduce the Quench Tank temperature to less than 120°F using OP 2301A, Section 4.1.
- I will be the US
- I will perform all other plant functions.

Initial Conditions:

- The quench tank temperature has risen because of a leaking PORV.
- The PORV has been isolated.

Simulator Requirements:

- Initialize at any at power IC
- Insert malfunction RC06A@2% Run simulator until quench tank temperature is approximately 145°F and then close RC 403.
- Save the above configuration in an IC to save time for repeat JPMs.

---

\*\*\*\* 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-202

TITLE: **Temperature Control of the Quench Tank**

---

START TIME: XXXXXXXXXX

STEP 1           Performance Steps:

### CAUTION

1. Due to switch wiring configuration, it is possible to open both sets of cooling valves for the PDT and QT. This results in draining the QT to the PDT. Therefore, only one set of cooling valves should be opened at a time.
2. To provide sufficient water level for accepting safety or relief valve blowdown, QT level must be maintained above low level alarm setpoint (45%), during cooling or level alterations.

GRADE           Standards:    *Examinee reads and applies caution to this evolution.*

Cue:

Comments:

~~~~~

STEP 2 Performance Steps: PERFORM applicable action:

- IF necessary to recirculate or cool QT, Go To step 4.1.2.
- IF necessary to recirculate or cool PDT, Go To step 4.1.3.

GRADE Standards: *Examinee proceeds to step 4.1.2*

Cue:

Comments:

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-202 TITLE: **Temperature Control of the Quench Tank**

STEP 3         Performance Steps: VERIFY PDT and QT "RECIRC-COOL, LRR-64.1/54.1," are closed (C-03).

GRADE            Standards:      *Examinee determines LRR 64.1 and 54.1 indicate closed on C-03 by green lights only lit.*

Cue:

Comments:

~~~~~

STEP 4 X Performance Steps: OPEN "QUENCH TK RECIRC/CLG VLVS, LRR-57.1/62.1" (C-03).

GRADE X Standards: *Examinee determines LRR-57.1 and 62.1 indicate open on C-03 by red lights only lit.*

Cue:

Comments:

~~~~~

STEP 5         Performance Steps: IF necessary to reduce QT temperature to less than 120°F, VERIFY "QT & PDT HX RBCCW OUT, RB-240," is open (C-06)

GRADE            Standards:      *Examinee Determines that RB-240 indicates open on C-06 by red light only lit.*

Cue:

Comments:

~~~~~

STEP 6 X Performance Steps: START "PDT/QUENCH TK CLG PP, P-28" (C-03).

PERFORMANCE INFORMATION


JPM ID NUMBER: JPM-202

TITLE: **Temperature Control of the Quench Tank**

GRADE X Standards: *Examinee takes Start/Stop switch to start and notes that PDT/QT cooling pump is running as indicated on C-03 by red light lit.*

Cue:

Comments: **After this step is completed and quench tank temperature begins to lower, the JPM is considered complete.**

STOP TIME: 

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM-202

Rev. 1

Date Performed: _____

Operator: _____

Evaluator(s): _____

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

Time Critical Task? Yes _____ No X

Validated Time (minutes): 5

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: 202

Initiating Cues:

- The Unit Supervisor has directed you to reduce the Quench Tank temperature to less than 120°F using OP 2301A, Section 4.1.
- I will be the US
- I will perform all other plant functions.

Initial Conditions:

- The quench tank temperature has risen because of a leaking PORV. The PORV has been isolated.


JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Securing Emergency Boration

ID Number: JPM-201

Revision: 1

II. Initiated:



F. Nygard
Developer

07/14/00

Date

III. Reviewed:



Technical Reviewer

7/16/00

Date

IV. Approved:

User Department Supervisor

Date



Nuclear Training Supervisor

7/16/00

Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2 Examinee: _____

JPM Number: JPM-201 Rev. 1

Task Title: Securing Emergency Boration

System: CVCS

Time Critical Task: Yes _____ No X

Validated Time (minutes): 5

Task No.(s): NUTIMS# 000-04-099

Applicable To: SRO X RO X PEO _____

K/A No.: 004-A4.18 K/A Rating: 4.3./4.1

K/A No.: 024-AA1.17 K/A Rating: 3.9./3.9

K/A No.: 024-AA1.22 K/A Rating: 3.2./3.2

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 Secured
Emergency Borated as specified in EOP 2541 Appendix 3.

Required Materials • EOP 2541 Appendix 3
(procedures,equipment):

General References: EOP 2541 Appendix 3

**** **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-201

Rev. 1

Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to Secure Emergency Boration in accordance with EOP 2541 Appendix 3

Initial Conditions:

- The plant experienced a spurious trip with 2 stuck rods.
- Emergency Boration is in progress from the BAST
- The US has completed EOP 2525 and is now performing EOP 2526 Contingency Action 9.2

Simulator Requirements:

Initialize at a normal post-trip IC and perform the following:

- Initialize in IC-24 (100% power)
- Enter Malfunction RD0203 RD0215, to cause 2 Rods to Stick out on a subsequent trip.
- Trip the plant and stabilize parameters.
- Emergency Borate per EOP 2541 Appendix 3
- Snap shot as necessary for additional exams


******* 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-201

TITLE: Securing Emergency Boration

START TIME: 

STEP 1 X Performance Steps: a. Open CH-501, VCT outlet

GRADE X Standards: *Examinee opens CH-501, VCT outlet*

Cue:

Comments:

~~~~~

STEP 2      Performance Steps: a.      Stop both boric acid pumps

GRADE              Standards:      *Examinee stops both boric acid pumps*

Cue:

Comments:

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-201 TITLE: Securing Emergency Boration

---

STEP 3      X Performance Steps: Close both boric acid gravity feed isolations

- CH-508
- CH-509

GRADE        X Standards:    *Examinee closes both boric acid gravity feed isolations*

Cue:

Comments:

~~~~~

STEP 4 X Performance Steps: Close CH-514, boric acid isolation

GRADE X Standards: *Examinee closes Close CH-514, boric acid isolation*

Cue:

Comments:

~~~~~

STEP 5          Performance Steps: Check charging flow is stable.

GRADE            Standards:    *Examinee observes charging flow meter*

Cue:

Comments:



**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-201

TITLE: Securing Emergency Boration

---

STEP 6           Performance Steps: Open both boric acid pump recirc valves

- CH-510
- CH-511

GRADE           Standards:    *Examinee opens both boric acid pump recirc valves*

Cue:

Comments:

~~~~~

STEP 6 Performance Steps: If CH-500, letdown divert handswitch is in the 'RWS' position, place the valve to the 'VCT' position.


GRADE Standards: *Examinee leaves CH-500 letdown divert handswitch in the 'AUTO' position.*

Cue:

Comments:

~~~~~

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

STOP TIME: 

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-201

Rev. 1

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

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

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

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

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

Validated Time (minutes): 5

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: 201

### Initiating Cues:

- You are the PPO.
- The Unit Supervisor has directed you to Secure Emergency Boration in accordance with EOP 2541 Appendix 3

### Initial Conditions:

- The plant experienced a spurious trip with 2 stuck rods.
- Emergency Boration is in progress from the BAST
- The US has completed EOP 2525 and is now performing EOP 2526 Contingency Action 9.2

## JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: **Shutdown From Outside the Control Room**

ID Number: JPM-206

Revision: 1

II. Initiated:

  
\_\_\_\_\_  
Fred Nygard  
Developer

7/14/2000  
\_\_\_\_\_  
Date

III. Reviewed:

  
\_\_\_\_\_  
Technical Reviewer

7/16/00  
\_\_\_\_\_  
Date

IV. Approved:

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

\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Nuclear Training Supervisor

7/16/00  
\_\_\_\_\_  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

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

JPM Number: JPM-206                      Rev. 1

Task Title: **Perform a shutdown from outside the Control Rom**

System: Control Room Evacuation

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

Validated Time (minutes): 20

Task No.(s): NUTIMS # 000 04 155

Applicable To:      SRO X      RO X      PEO X

K/A No.: 068 AA1.23      K/A Rating: 4.3/4.4

K/A No.: 068 AA1.27      K/A Rating: 3.2/3.46

K/A No.: 068 AA1.10      K/A Rating: 3.7/3.9

### 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 performed local operations described in AOP "Operation Outside the Control Room" to manually trip the reactor and main turbine and to open breakers for the heater drain and condensate pumps.

### Required Materials

(procedures,equipment):

•

### General References:

AOP 2551 (Rev. 8, Ch. 1)  
OP 2348B  
OP 2348A

### \*\*\*\* 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-206

Rev. 1

Initiating Cues:

- The Unit Supervisor has directed you to AOP 2551 steps 4.6.1 through 4.6.6 to shutdown the reactor and turbine and other equipment.
- Where necessary, the examiner will act as the Unit Supervisor.
- All other actions will be handled by others.

Initial Conditions:

- The Control Room has become uninhabitable (not due to a fire).
- The Unit Supervisor has entered AOP 2551.
- The Shift Manager has ordered an immediate evacuation of the Control Room.
- The Unit Supervisor has made the necessary station page, obtained additional security emergency keys, and notified Unit 1.

Simulator Requirements:     N/A

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

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

## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-206

TITLE: Shutdown From Outside the Control Room

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START TIME: XXXXXXXXXX

Note to Examiner: Two of the steps below (Main Turbine and SGFP Turbine tripping) require access to plant trip sensitive areas. The required exam topic operation should be performed by standing at the boundary and have the examinee point and describe the operation.

STEP 1           Performance Steps: Don proper electrical safety equipment.

GRADE           Standards:    *Examinee properly dons the electrical rubber/lineman's gloves.*

Cue:

Comments:    Examinee may remove the safety equipment after they have shown how it is worn. Electrical safety equipment is located in each 480 Volt Switchgear Room. Use of the hard hat with faceshield, flash jacket is not required since the breaker cubicle will not be opened. The requirement for using electrical linesman gloves resides in OP 2348B. AOP 2551 does not specifically address the use of linesman gloves. The breaker can be opened safely without gloves. However use of gloves is good practice.

~~~~~

STEP 2 X Performance Steps: To shutdown the reactor and turbine, PERFORM the following:

4.6.1 OPEN the following breakers:

- B0505, "A MOTOR-GENERATOR SET" (West 480 Volt Switchgear Room)
- B0608, "B MOTOR-GENERATOR SET" (East 480 Volt Switchgear Room)

GRADE X Standards: *Examinee states they would open B0505 (West 480 Volt room) and B0608 (East 480 Volt room) by pushing the manual or electrical "TRIP" button on the front of the breaker and observing the "OPEN" flag showing.*

Cue: The sound of breaker opening is heard and the "OPEN" flag is indicated

Comments: The breakers may be done in either order.

~~~~~

**PERFORMANCE INFORMATION**

JPM ID NUMBER: JPM-206

TITLE: **Shutdown From Outside the Control Room**

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STEP 3      ☒ Performance Steps: 4.6.2 Using the "MANUAL TRIP" handle on the front standard, TRIP the Turbine.

GRADE           ☒ Standards:      *Examinee goes to the main turbine front standard and states they would turn the "MANUAL TRIP" handle as indicated and then pull it.*

Cue: **"MANUAL TRIP" handle has been turned and pulled out.**

Comments:      The examinee may state that the turbine should already be tripped due to the reactor trip.

~~~~~

STEP 4 Performance Steps: 4.6.3 PERFORM the following at the SGFPs:

a. Using the "PULL TO TRIP" handle on the SGFP front standard, TRIP "A" SGFP.

b. Using the "PULL TO TRIP" handle on the SGFP front standard, TRIP "B" SGFP.

GRADE Standards: *Examinee locates the manual trip handles on each SGFP front standard and states they would pull out the handle and observe the SGFP is tripped by sound, lowering RPM indication, etc.*

Cue: **For each, "PULL TO TRIP" handle has been pulled and respective RPMs are lowering.**

Comments: May be tripped in any order

~~~~~



## PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-206

TITLE: Shutdown From Outside the Control Room

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STEP 5      \_      Performance Steps: Don proper electrical safety equipment. And use proper tools

GRADE \_\_\_\_      \_      Standards:      *Examinee obtains the following equipment and tools*

- *Hard hat with face shield*
- *Electrical flash jacket*
- *Electrical linesman gloves*
- *For pressing breaker "MANUAL TRIP" and "MANUAL CLOSE" buttons, manual trip and close tool (3 to 4-foot wood broom handle)*

Cue: After examinee locates safety equipment, state that wearing of the safety equipment will be simulated in this JPM.

Comments: The AOP does not specifically state to wear the safety equipment, but this practice is specified in OP 2348A.

STEP 5      \_      Performance Steps: 4.6.4 OPEN both Heater Drain Pump Breakers:

- A105, "P3A HEATER DRAIN PUMP" (Lower 4160 Switchgear Room)
- A203, "P3B HEATER DRAIN PUMP" (Upper 4160 Switchgear Room)

GRADE \_\_\_\_      \_      Standards:      *Examinee opens the breaker cubical door and presses the manual trip button by using the broom stick.*

Cue: Ask examinee not to open breaker door. Ask how the breaker is tripped. After the examinee answers, state that the green open flag is showing.

Comments:

~~~~~

PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-206

TITLE: Shutdown From Outside the Control Room

STEP 6 _ Performance Steps: 4.6.5 ENSURE only one of the following breakers is closed:

- H106, "P2A CONDENSATE PUMP" (Lower 4160 Switchgear Room)
- H107, "P2B CONDENSATE PUMP" (Lower 4160 Switchgear Room)
- H203, "P2C CONDENSATE PUMP" (Upper 4160 Switchgear Room)

GRADE ____ Standards: *Examinee explains he opens the breaker cubical door and presses the manual trip button on two of the above breakers by using the broom stick..*

- Cue:
- H106, H107 and H203 all have the red only light lit on the breaker cubical door
 - Ask examinee not to open breaker door.
 - Ask how the breaker is tripped.
 - After the examinee answers, state that the green open flag is showing.

Comments:

~~~~~

### PERFORMANCE INFORMATION

JPM ID NUMBER: JPM-206

TITLE: Shutdown From Outside the Control Room

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STEP 7      \_ Performance Steps: 4.6.6 CHECK the following breakers closed:

- H103, "RSST FEEDER BREAKER" (Lower 4160 Switchgear Room)
- A302, "BUS 24G TO BUS 24C FEEDER BREAKER" (Lower 4160 Switchgear Room)
- H204, "RSST FEEDER BREAKER" (Upper 4160 Switchgear Room)
- A411, "BUS 24G TO BUS 24D FEEDER BREAKER" (Upper 4160 Switchgear Room)

GRADE \_\_\_\_ Standards: *Examinee observes the red only light lit on each of the breaker cubical doors.*

Cue: Red only light is lit.

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

STOP TIME:

**VERIFICATION OF JPM COMPLETION**

Job Performance Measure No. JPM-206

Rev. 1

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

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

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

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

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

Validated Time (minutes): 20

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

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

Areas for Improvement:

## EXAMINEE HANDOUT

JPM ID Number: 206

### Initiating Cues:

- The Unit Supervisor has directed you to AOP 2551 steps 4.6.1 through 4.6.6 to shutdown the reactor and turbine and other equipment.
- Where necessary, the examiner will act as the Unit Supervisor.
- All other actions will be handled by others.

### Initial Conditions:

- The Control Room has become uninhabitable (not due to a fire).
- The Unit Supervisor has entered AOP 2551.
- The Shift Manager has ordered an immediate evacuation of the Control Room.
- The Unit Supervisor has made the necessary station page, obtained additional security emergency keys, and notified Unit 1.

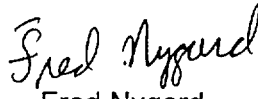
## JOB PERFORMANCE MEASURE APPROVAL SHEET

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

ID Number: JPM-207

Revision: 0

II. Initiated:



Fred Nygard  
Developer

6/14/2000  
Date

III. Reviewed:



Technical Reviewer

6/15/00  
Date

IV. Approved:

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

\_\_\_\_\_  
Date



Nuclear Training Supervisor

6/20/00  
Date

## JOB PERFORMANCE MEASURE WORKSHEET

Facility: MP-2

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

JPM Number: JPM-207

Rev. 0

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): 035-003-01-04 (NUTIMS# 035-01-029)

Applicable To: SRO X RO X PEO X

K/A No. 039-A2.04 K/A Rating 3.4/3.7

### 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.

Required Materials EOP 2541 APPENDIX 36  
(procedures,  
equipment):

General References: EOP 2541 APPENDIX 36

### **\*\*\*\* 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%.

### 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

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

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



## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-207

TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

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

STEP 1    Performance Steps: Determine local ambient air temperatures for the applicable penetration rooms by reading local area thermometers.

GRADE    Standards: *Examinee reads the local temperature for by opening door to penetration room and peering at locally mounted thermometer.*

Cue: *State that the temperature gauge indicates 130°F.*

Comments: The operator may feel the door to the penetration room to determine if it is excessively hot. IF he does, indicate that the door seems about normal.

~~~~~

STEP 2 Performance Steps: Request additional operator assistance and Request Control Room to notify medical facility of pending entry.

GRADE Standards: *Examinee calls control room and requests additional operator and notification of the medical facility.*

Cue: *State that you are the additional operator but for purpose of this JPM, the examinee is expected to do the assigned task and that the medical facility has been notified.*

Comments:

~~~~~

STEP 3    Performance Steps: Initiate use of ice vest and gloves.

GRADE    Standards: *Examinee goes to obtain ice vest and gloves.*

Cue: *After operator has recognized need for ice vest and gloves, indicate that the ice vest and gloves are considered as donned for the remainder of the task*

Comments:

~~~~~

PERFORMANCE INFORMATION

PM ID NUMBER: JPM-207

TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 4 Performance Steps: Establish communications between the Control Room and the Atmospheric Dump Valve, 2-MS-190A.

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:

STEP 5 Performance Steps: Ensure ADV manual isolation valve, MS - 3A is open.

GRADE Standards: *Examinee determines manual valve is open .*

Cue: Valve is open..

Comments:

~~~~~

## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-207

TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 6    Performance Steps:    Remove the "Vent Valve" assembly from the instrument rack located below the ADV.

GRADE    Standards:    *Examinee removes the vent valve from the instrument rack below the ADV.*

Cue: Vent valve is removed.

Comments:

~~~~~

STEP 7 Performance Steps: Ensure the "Vent Valve" assembly is closed.

GRADE Standards: *Examinee Ensure the "Vent Valve" assembly is closed.*

Cue: Vent valve is closed.

Comments:

~~~~~

STEP 8    X Performance Steps:    Close the Instrument Air Isolation valve to the Atmospheric Dump Valve, 2-MS-190A.

GRADE    X Standards:    *Examinee climbs to the ADV platform, locates the I.A. isolation for 2-MS-190A (located on the Ctmt wall behind the ADV), and states that he would close it.*

Cue: I.A. isolation to 2-MS-190A is closed.

Comments:

## PERFORMANCE INFORMATION

PM ID NUMBER: JPM-207

TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

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

GRADE     X Standards: *Examinee states that he would Remove the vent cap from the quick disconnect at the top the ADV operator diagram*

Cue: Cap is removed;

Comments:

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

GRADE X Standards: *Examinee states that he would Install the vent valve into the quick disconnect at the top of the valve operator diagram*

Cue: Vent valve is inserted; air is bled off.

Comments:

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

GRADE     X Standards: *Examinee states Opening the vent valve and venting pressure from the diaphragm*

Cue: air is bled off.

Comments:

**PERFORMANCE INFORMATION**

PM ID NUMBER: JPM-207

TITLE: Local Manual Operation of the "A" Atmospheric Dump Valve

STEP 11      Performance Steps: ENSURE Atmospheric Dump Valve is closed.

GRADE           Standards: *Examinee checks stem position indicator to ensure ADV is closed.*

Cue:

Comments:

~~~~~

STEP 12 X Performance Steps: Remove handwheel restraining device and position the Atmospheric Dump Valve handwheel as directed by the Control Room.

GRADE X Standards: *Examinee state that he would remove the restraining device and then turn the handwheel in the clockwise direction until the position indicator pointer indicates 25% open.*

Cue: Restraining device is removed; Position indicator is rising; position indicator is at 25% open.
When it has been simulated that manual control has been taken and the valve is at 25% open, then this JPM is complete.

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

STOP TIME: _____

VERIFICATION OF JPM COMPLETION

Job Performance Measure No. JPM -207

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): 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: 207

Initiating Cues:

- The US directs you to take local manual control of the "A" Atmospheric Dump Valve and open the valve to 25%.

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.