

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

JPM ID Number: 2K7 NRC S.1

Revision 0 chg 2
:

II. Initiated:

D. Minnich
Developer

12/8/06
Date

III. Reviewed:

Ray Martin
Technical Reviewer

1/24/07
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Tim Kulterman
Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

2/7/07	Modified JPM to delete remaining steps after the last critical step (step 20). NRC Request.	0 chg 1
2/20/07	Changed performance step 16 (checking RCP seal inlet temperatures) from a critical step to a non-critical step, since improper performance of the step will not affect the outcome of the JPM.	0 chg 2

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

JPM ID Number: 2K7 NRC S.1 Revision 0 chg 2
: _____

Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

System: 004

Time Critical Task: () YES (X) NO

Validated Time (minutes): 8

Task Number(s): 344-05-036

Applicable To: SRO X RO X PEO _____

K/A Number: APE: 022 AA2.02 K/A Rating: 3.2 / 3.7
004-A4.08 3.8 / 3.4

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

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

Task Standards: All critical steps are performed satisfactorily. All sequential steps are performed in proper procedural sequence.

Required Materials: None.

General References: EOP 3506 Rev. 009-00

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC S.1

Revision 0 chg 2

- Simulator Requirements:
- A. Reset to any 100% Power IC
 - B. Insert I/O [CV] 3CHS*AV8149C CLOSE OFF (FALSE)
 - C. Place simulator in "RUN"
 - D. Ensure The "B" charging pump is running. Ensure CHS*AV8149C will not close.
 - E. Insert MALF CV11B, Charging Pump "B" Overcurrent trip.
 - F. Acknowledge annunciators, then place simulator in "FREEZE"
 - G. Place simulator in "RUN" after the operator receives instructions.

Approximate Simulator setup time is 10 minutes

Initial Conditions: The plant was at 100% power with charging and letdown in a normal lineup. Moments ago the "B" Charging pump tripped and the applicable ARP's referenced.

Initiating Cues: The US has directed you to perform EOP 3506, "Loss Of All Charging Pumps," beginning with step 1.

**** NOTES TO EVALUATOR ****

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

PERFORMANCE INFORMATION

JPM Number: S.1

Revision: 0 chg 2

Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

Start Time:

STEP	<u> 1 </u>		Performance Step:	Obtains copy of EOP 3506
GRADE	<u> </u>	<u> </u>	Standards:	Obtains a copy of EOP 3506 and refers to step 1
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 2 </u>		Performance Step:	The Foldout page must be open. Note prior to step 1
GRADE	<u> </u>	<u> </u>	Standards:	Opens foldout page and reviews
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 3 </u>		Performance Step:	Verify Charging Pumps – NONE RUNNING EOP 3506, step 1.
GRADE	<u> </u>	<u> </u>	Standards:	Determines that no charging pumps are running by observation of indicating lights, amps, flow etc.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 4 </u>		Performance Step:	Check Reactor- NOT TRIPPED 2.
GRADE	<u> </u>	<u> </u>	Standards:	At Main Board 4 determines that the reactor trip breakers are closed observation of red indicating lights on, DRPI indication, etc.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 5 </u>		Performance Step:	Check Busses 34C And 34D - 3. BOTH ENERGIZED
GRADE	<u> </u>	<u> </u>	Standards:	Determines Busses 34C And 34D are both energized by observation of the Main Board 8 emergency bus voltage

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Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

indicators reading about 4160 volts
OR emergency load center voltage
indicators (8) reading about 480 volts.

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

STEP 6

Performance Step: Isolate Letdown
4.a. CLOSE letdown orifice isolation valves

GRADE

Standards: Depresses close pushbuttons for
CHS*AV8149C. Determines that
8149C has not closed by observation
of red indicating light on, green off,
and transitions to RNO column.

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

STEP 7 X

Performance Step: CLOSE Ctmt letdown isolation valves:
4.a. RNO

- 3CHS*CV8152
- 3CHS*CV8160

GRADE X

Standards: Depresses close pushbuttons for
CHS*CV8152 and CV8160

GRADE

Standards: Checks position indicating lights and
determines valves have closed by red
ind. lights off, green on

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

STEP 8

Performance Step: Verify excess letdown and reactor
4.b. head vent isolation valves - CLOSED

GRADE

Standards: Checks red indicating lights off / green
on for head vent and excess letdown
isolations

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

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JPM Number: S.1

Revision: 0 chg 2

Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

STEP	<u> 9 </u>		Performance Step: 5.a.	<p>Check For Loss Of Charging Pump Suction</p> <p>Check previously running charging pump – ANY OF THE FOLLOWING FLUCTUATING PRIOR TO PUMP TRIP</p> <ul style="list-style-type: none"> • Charging flow <u>OR</u> • RCP seal supply flows <u>OR</u> • Charging pump discharge pressure <u>OR</u> • Charging pump amps
GRADE			Standards:	The applicant should question the US if there were any indications of cavitation prior to the pump trip.
			CUE:	Respond as the US that there were no indications of cavitation or gas binding prior to the pump trip from the control room or reports from the field.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 10 </u>		Performance Step: 5.a. RNO	Proceed to step 5.c.
GRADE			Standards:	Proceeds to step 5.c.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 11 </u>		Performance Step: 5.c.	Check indications of pump cavitation or gas binding - REPORTED FROM FIELD
GRADE			Standards:	The applicant may question the US if there were any indications of cavitation reported from the field.
			CUE (if required):	Respond as the US that there were no indications of cavitation or gas binding reported from the field.

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Revision: 0 chg 2

Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

STEP	<u> 12 </u>	<u> </u>	Performance Step:	Proceed to step 5.f. 5.c. RNO
GRADE	<u> </u>	<u> </u>	Standards:	Proceeds to step 5.f.
			Grade:	SAT <u> </u> UNSAT <u> </u>

STEP	<u> 13 </u>	<u> </u>	Performance Step:	Verify charging pump suction 5.f. <ul style="list-style-type: none"> • Check VCT to charging isolation valves (3CHS*LCV112B and 3CHS*LCV112C) – OPEN <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • Check at least one RWST to charging isolation valve (3CHS*LCV112D or 3CHS*LCV112E) - OPEN
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GRADE	<u> </u>	<u> </u>	Standards:	Determines that both VCT to charging isolation valves (3CHS*LCV112B and 3CHS*LCV112C) are open by checking red indicating lights on / green off.
			Grade:	SAT <u> </u> UNSAT <u> </u>

STEP	<u> 14 </u>	<u> </u>	Performance Step:	Check RCPs For A Loss Of All Seal Cooling 6. a. Check any RCP <ul style="list-style-type: none"> • Thermal barrier cooling (CCP) – LOST <p style="text-align: center;"><u>OR</u></p> <ul style="list-style-type: none"> • Seal injection flow - LESS THAN 6 gpm
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JPM Number: S.1

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Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

GRADE **Standards:** Determines that there is adequate Thermal barrier cooling by observing thermal barrier flow low annunciators not in alarm.

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

GRADE **Standards:** Determines that there is NO seal injection flow by observation of seal injection flowrate indicators CHS-FI145A, 144A, 143A, and 142A on MB3.

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

STEP 15 **Performance Step:** Check affected RCP(s) - 6.b. RUNNING

GRADE **Standards:** Determines that all RCPs are running by observation of red indicating lights on / green off, amps, flow etc.

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

STEP 16 **Performance Step:** Check affected RCPs #1 seal inlet temperatures – ANY GREATER THAN OR EQUAL TO 230 °F (PPC, NSSS screen 15)

GRADE **Standards:** At any PPC AYDIN terminal, calls up NSSS screen 15 and determines that all RCP #1 seal inlet temperatures are less than 230 degrees.

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

STEP 17 **Performance Step:** Proceed to step 7. 6.c. RNO

GRADE **Standards:** Proceeds to step 7.

PERFORMANCE INFORMATION

JPM Number: S.1

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Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

			Grade:	SAT _____	UNSAT _____
STEP	<u> 18 </u>	_____	Performance Step: 7.a.	Check If A Charging Pump Should Be Started Verify charging pump operation - NONE RUNNING	
GRADE	_____	_____	Standards:	Determines that no charging pumps are running by observation of indicating lights, amps, flow etc.	
			Grade:	SAT _____	UNSAT _____
STEP	<u> 19 </u>	_____	Performance Step: 7.b.	Check RCPs – ALL RUNNING	
GRADE	_____	_____	Standards:	Determines that all RCPs are running by observation of red indicating lights on / green off, amps, flow etc.	
			Grade:	SAT _____	UNSAT _____
STEP	<u> 20 </u>	<u> X </u>	Performance Step: 7.c.	START one charging pump	
GRADE	_____	<u> X </u>	Standards:	Rotates the control switch for the “A” charging pump to the start position.	
			Standards:	Observes for proper indications of a successful pump start; red indicating light, amps, flow, etc.	
			CUE (if required):	If the applicant questions whether to attempt a start of the “B” charging pump, respond as the US that the “A” charging pump should be started.	
			Grade:	SAT _____	UNSAT _____
			CUE:	Inform the Examinee that another RO	

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JPM Number: S.1

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Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

will complete EOP 3506. Inform the Examinee the evaluation for this JPM is concluded.

Stop Time:

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.1

Revision: 0 chg 2

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 8

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: **S.1**

Initial Conditions: The plant was at 100% power with charging and letdown in a normal lineup. Moments ago the "B" Charging pump tripped and the applicable ARP's referenced.

Initiating Cues: **The US has directed you to perform EOP 3506, "Loss Of All Charging Pumps," beginning with step 1.**

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA DURING ECA - 0.0

JPM ID Number: 2K7 NRC S.2

Revision: 1 chg 1

II. Initiated:

Steve Jackson
Developer

6/12/02
Date

III. Reviewed:

Ray Martin
Technical Reviewer

1/24/07
Date

IV. Approved:

Tim Kulterman
Nuclear Training Manager

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

SUMMARY OF CHANGES

2/20/07	Changed performance step 3 (close breaker) from a critical step to a non-critical step, since improper performance or omission of the step will not affect the outcome of the JPM. Modified JPM to delete remaining performance steps after the last critical step (step 15). Added an evaluator note to specify which pushbutton is the 34C undervoltage block pushbutton on MB8R. D I M	1 chg 1

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC S.2 Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA DURING ECA - 0.0

System: AC Electrical Distribution (62) Safety Function: Electrical (6)

Time Critical Task: () YES (X) NO

Validated Time (minutes): 5

Alternate Path? Yes

Task Number(s): 000-05-097

Applicable To: SRO X RO _____ PEO _____

K/A Number: 062.A2.05 K/A Rating: 2.9 / 3.3

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

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

Task Standards: Respond to a Loss of All AC Power

Required Materials: ECA-0.0, Loss of All AC Power, Rev. 020-01
EOP 35 General Attachment, GA-3; Energizing 4.16 KV Bus From Offsite Power, Rev. 001

General References: None

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: **S.2**

Revision: 1 chg 1

- Simulator Requirements:
1. Reset to IC- 21, 100% power, EOL.
 2. Enter MALF **EG07B**, EDG B Trip & **EG08A**; 0%, EDG A Load Limiter Failure
 3. Enter I/O (EG) 1A-3ENSACB-A, CLOSE - FALSE, to prevent EDG A Output breaker from closing manually
 4. Place the Simulator in Run
 5. Enter MALF ED01, Loss of Offsite Power, run for 5 minutes, perform E-0, steps 1-3, and ECA-0.0, steps 1-4.
 6. Remove MALF ED01
 7. Place the Simulator in Freeze. Go to run when the examinee is ready to begin

Initial Conditions: The plant has experienced a Loss of Offsite Power. The A EDG started but did not load. The B EDG started and catastrophically failed. The crew responded using E-0 and ECA-0.0 and has completed ECA-0.0 through step 4. CONVEX has restored offsite power, which is available and reliable.

Initiating Cues: The Unit Supervisor directs you to restore power to any AC emergency bus starting at ECA-0.0, step 5.

**** NOTES TO EVALUATOR ****

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

PERFORMANCE INFORMATION

JPM Number: **S.2**

Revision: 1 chg 1

Task Title: **ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA
DURING ECA - 0.0**

Start Time:

STEP	<u> 1 </u>	<u> </u>	Performance Step:	Try To Restore Power To Any AC Emergency Bus:
				START at least one EDG (MB8)
			Standards:	Observes A EDG running. Observes that the EDG has NOT automatically close onto bus 34C. Candidate MAY observe degraded frequency
			Grade:	SAT <u> </u> UNSAT <u> </u>

STEP	<u> 2 </u>	<u> </u>	Performance Step:	Verify EDG output breaker - CLOSED (Step 5.b)
			Alternate Path	
GRADE	<u> </u>	<u> </u>	Standards:	Observes that Bus 34C and 34D are both de-energized. The candidate may try to close the A EDG Output Breaker since it is an automatic action which did not occur. Candidate transitions to RNO column.
			Grade:	SAT <u> </u> UNSAT <u> </u>

STEP	<u> 3 </u>	<u> </u>	Performance Step:	CLOSE breaker (MB8) (Step 5.b RNO)
GRADE	<u> </u>	<u> </u>	Standards:	Candidate attempts to close the A EDG output breaker. When it will not close transitions to step 5.c
			Grade:	SAT <u> </u> UNSAT <u> </u>

STEP	<u> 4 </u>	<u> </u>	Performance Step:	Verify at least one AC emergency bus - ENERGIZED
GRADE	<u> </u>	<u> </u>	Standards:	Observes that Bus 34C and 34D are both still de-energized.

PERFORMANCE INFORMATION

JPM Number: S.2

Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA
DURING ECA - 0.0

		Grade:	SAT _____	UNSAT _____
STEP	<u> 5 </u>	Performance Step:	Proceed to step 5.e (Step 5.c RNO)	
GRADE	_____	Standards:	Candidate Proceeds to step 5.e.	
		Grade:	SAT _____	UNSAT _____
STEP	<u> 6 </u>	Performance Step:	Check offsite power - AVAILABLE (Step 5.e)	
GRADE	_____	Standards:	At MB8 observes any of the following: <ul style="list-style-type: none"> • Grid frequency meter (upright) • Grid voltage meter (upright) • RSST "available" white lights (apron) 	
		Comment:	This information also given in initial conditions. Candidate may choose not to verify.	
		Grade:	SAT _____	UNSAT _____
STEP	<u> 7 </u>	Performance Step:	Using GA-3, energize emergency bus 34C or 34D through the RSST or the NSST	
GRADE	_____	Standards:	Candidate locates and opens GA binder to GA-3.	
GRADE	_____	Standards:	The applicant should question the US which emergency bus is desired to be energized and from which offsite source.	
		CUE:	Respond as the US to restore power to Bus 34C with the RSST.	
		Grade:	SAT _____	UNSAT _____

PERFORMANCE INFORMATION

JPM Number: S.2

Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA
DURING ECA - 0.0

STEP 8 _____ **Performance Step:** Check Energizing Bus 34C - DESIRED
(step 1 of GA-3)

GRADE _____ _____ **Standards:** Candidate Proceeds to step 2 based
on previous cue.

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

STEP 9 X **Performance Step:** Energize Bus 34C.
(step 2.a) Place the following control switches in
PULL-TO-LOCK

- One Train A Service Water Pump
- RPCCW Pump A
- RPCCW Pump C (Train A)
- Quench Spray Pump A
- Recirc Spray Pump A
- Recirc Spray Pump C
- SI Pump A
- RHR Pump A
- Control Building Chiller A
- Aux Building Filter A
- Charging Pump A
- Charging Pump C (Train A)
- MD AFW Pump A

GRADE _____ X **Standards:** Locates the control switches for the
following components and places the
switch in stop and then in PULL-TO-
LOCK.

- One Train A Service Water Pump
- RPCCW Pump A
- RPCCW Pump C (Train A)
- Quench Spray Pump A
- Recirc Spray Pump A
- Recirc Spray Pump C
- SI Pump A
- RHR Pump A
- Control Building Chiller A
- Aux Building Filter A
- Charging Pump A

PERFORMANCE INFORMATION

JPM Number: S.2

Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA DURING ECA - 0.0

- Charging Pump C (Train A)
- MD AFW Pump A

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

STEP 10

Performance Step: Verify annunciator, "Bus 34C UNDERVOLTAGE" (MB8A 3-12) - NOT LIT

GRADE

Standards: Observes annunciator MB8A 3-12, "Bus 34C UNDERVOLTAGE" not lit on MB8A.

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

STEP 11 X

Performance Step: Press "BYPASS" for 34C undervoltage block pushbutton. (MB8R)

GRADE X

Standards: Locates pushbutton on MB8R, pushes button and observes white light go off.

Evaluator NOTE: The 34C undervoltage block pushbutton is the pushbutton on the left.

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

STEP 12

Performance Step: Check undervoltage block white light - NOT LIT.

GRADE

Standards: Observes white light NOT LIT on pushbutton on MB8R

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

PERFORMANCE INFORMATION

JPM Number: S.2

Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA DURING ECA - 0.0

STEP	<u> 13 </u>		Performance Step:	Check energizing Bus 34C from Bus 34A - DESIRED (Step 2.e)
GRADE	<u> </u>	<u> </u>	Standards:	Candidate Proceeds to step 2.e.RNO based on previous cue.
			CUE (if required):	Respond as the US to restore power to Bus 34C with the RSST.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 14 </u>	<u> X </u>	Performance Step:	Energize Bus 34C from RSSA: (Step 2.e.1 RNO) Place RSSA sync selector switch in ON.
GRADE	<u> </u>	<u> X </u>	Standards:	Places or checks sync selector handle in synchronizing selector for RSSA to bus 34C and turns to ON position. Observes INCOMING voltage meter register voltage at about 125 v.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 15 </u>	<u> X </u>	Performance Step:	CLOSE RSSA supply breaker (Step 2.e.2 RNO) (RSSA*34C-2).
GRADE	<u> </u>	<u> X </u>	Standard:	Locates and turns RSSA*34C-2, RSSA supply breaker to the close position and releases.
			Standards:	Observes breaker green light go OFF and red light go ON. Observes voltage on bus 34C at about 4000 v. Also may observe synchroscope RUNNING voltage go to about 125 v.
			Note:	Lights come on in the Control Room
			Grade:	SAT <u> </u> UNSAT <u> </u>

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time:

PERFORMANCE INFORMATION

JPM Number: **S.2**

Revision: 1 chg 1

Task Title: ENERGIZE THE AC EMERGENCY BUS THROUGH THE RSSA
DURING ECA - 0.0

VERIFICATION OF JPM COMPLETION

JPM Number: S.2

Revision: 1 chg 1

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 5

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number:

S.2

Initial Conditions:

The plant has experienced a Loss of Offsite Power. The A EDG started but did not load. The B EDG started and catastrophically failed. The crew responded using E-0 and ECA-0.0 and has completed ECA-0.0 through step 4. CONVEX has restored offsite power, which is available and reliable.

Initiating Cues:

The Unit Supervisor directs you to restore power to any AC emergency bus starting at ECA-0.0, step 5.

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Respond to Main Steam Pressure Transmitter MSS-PT20D Failure to 100%, Causing SG Atmospheric Relief Valve MSS-PV20 to Open (OP3353.MB5C 5-7)

JPM ID Number: 2K7 NRC S.3

Revision: 0 chg 3

II. Initiated:

Barry Pinkowitz
Developer

13 Sept 2004
Date

III. Reviewed:

Paul Malzahn
Technical Reviewer

03/13/04
Date

IV. Approved:

NA
Cognizant Plant Supervisor (optional)

Date

Trad Horner
Nuclear Training Supervisor

09/14/04
Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

12/27/06	Revised JPM to correspond to the standard NTP format. DLM	Rev 0 change 1
2/7/07	Modified JPM to delete remaining steps after the last critical step (step 4). NRC Request. DLM	Rev 0 chg 2
2/20/07	Added to the simulator setup page instructions to ensure alarms are not in master silence and are enabled. Removed from the student handout the questions that the evaluator would normally ask the applicant verbally, ie. 'Do you have any questions?' and 'Are you ready to begin?'	Rev 0 chg 3

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

JPM ID Number: 2K7 NRC S.3 Revision: 0 chg 3

Task Title: Respond to Main Steam Pressure Transmitter MSS-PT20D Failure to 100%, Causing SG Atmospheric Relief Valve MSS-PV20 to Open

System: 039

Time Critical Task: () YES (X) NO

Validated Time (minutes): 10 for RO / 15 for SRO

Task Number(s): _____

Applicable To: SRO X RO X PEO _____

K/A Number: 039 A4.07 K/A Rating: 2.8 / 2.9
041 A4.06 3.1 / 2.9

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

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

Task Standards:

- Applicant closes isolation valve 3MSS*MOV18D
- Applicant recognizes both instrument failure and component failure.

Required Materials: None.

General References: OP 3353.MB5C 5-7, MAIN STEAM RELIEF VV NOT CLOSED, rev 003-07

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC S.3

Revision 0 chg 3

- Simulator Requirements:
- A. Reset to IC 18 or any other 100% Power IC.
 - B. Place simulator in "RUN"
 - C. Ensure plant is stable and computer point alarms enabled.
 - D. Acknowledge annunciators, then place simulator in "FREEZE"
 - E. Ensure alarms are not in master silence and are enabled.
 - F. Place simulator in "RUN" after the operator receives instructions.

Approximate Simulator setup time is 5 minutes

Simulator Instruction:

T = 0 seconds: Candidate takes the shift.

At T = 45 seconds, insert malfunction MS11D, Severity = 100%. (MS PRESSURE TRANS FAIL MSS-PT20D)

At T = 50 seconds, insert malfunction MS09D, Severity = 100% (PRESS RLF VV PV20D FAIL)

Initial Conditions:

The plant is steady state at 100% power with no equipment out of service. You are to respond to the simulator just as you would respond to the actual plant.
Do you have any questions?

Are you ready to begin?

Initiating Cues:

You have the shift.

**** NOTES TO EVALUATOR ****

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

PERFORMANCE INFORMATION

JPM Number: S.3

Revision: 0 chg 3

Task Title: Respond to Main Steam Pressure Transmitter MSS-PT20D Failure

Start Time:

Comment: It is expected that the applicant take manual control of MSS-PIC20D ("D" SG Atmospheric Relief Valve Controller) and attempt to close the "D" atmospheric relief valve. Once determined that the atmospheric relief valve will not close, it is expected that the applicant will recommend isolating the relief valve by closing 3MSS*MOV18D. It is satisfactory to reference OP 3353.MB5C 5-7 (applicable ARP) after the relief valve is isolated.

STEP	<u> 1 </u>	<u> </u>	Performance Step:	CHECK the following steam generator pressures for proper operation of main steam pressure relief valve (MB5):
			MB5C 5-7 step 1	<ul style="list-style-type: none"> • 3MSS-PIC20A • 3MSS-PIC20B • 3MSS-PIC20C • 3MSS-PIC20D

GRADE	<u> </u>	<u> </u>	Standards:	Applicant checks SG pressures for proper operation of SG Atmospheric Relief Valve. Observes that the process input (3MSS-PT20D) to 3MSS-PIC20D is pegged high as indicated by the controller red pointer.
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Grade:	SAT	<u> </u>	UNSAT	<u> </u>
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STEP	<u> 2 </u>	<u> </u>	Performance Step:	IF pressure controller has failed, PLACE controller in "MAN" and CLOSE the valve.
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GRADE	<u> </u>	<u> </u>	Standards:	Applicant depresses the manual pushbutton on 3MSS-PIC20D and lowers controller output in an attempt to manually close 3MSS-PV20D.
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Grade:	SAT	<u> </u>	UNSAT	<u> </u>
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PERFORMANCE INFORMATION

JPM Number: S.3

Revision: 0 chg 3

Task Title: Respond to Main Steam Pressure Transmitter MSS-PT20D Failure

STEP	<u> 3 </u>	<u> X </u>	Performance Step:	IF relief valve does not close, CLOSE the following isolation valves (MB5): <ul style="list-style-type: none"> • 3MSS*MOV18D, "ATMOSPHERIC RELIEF ISOL" "SG 4"
-------------	--------------	--------------	--------------------------	---

GRADE	<u> </u>	<u> </u>	Standards:	Applicant recommends to the US that the failed open relief valve be isolated by closing 3MSS*MOV18D.
			CUE:	Respond as the US and direct the closing of 3MSS*MOV18D.

GRADE	<u> </u>	<u> X </u>	Standards:	Applicant depresses close pushbutton for 3MSS*MOV18D.
			NOTE:	3MSS*MOV18D is a throttle valve. Applicant must hold the CLOSE pushbutton until the valve is fully shut.

GRADE	<u> </u>	<u> </u>	Standards:	Checks position indicating lights and determines valve has closed by green indicating light on, red off.
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Grade: **SAT** **UNSAT**

Examiner Cue for RO Applicants ONLY:	The Unit Supervisor is referring to Technical Specifications. The evaluation for this JPM is complete.
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NOTE: SRO Applicants continue:

STEP	<u> 4 </u>	<u> X </u>	Performance Step:	Refer To Technical Specification 3.7.1.6 and DETERMINE Limiting Condition for Operation.
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GRADE	<u> </u>	<u> X </u>	Standards:	SRO Applicant refers to Technical Specifications and enters LCO Action 3.7.1.6.a. (7 day allowed outage time).
			NOTE TO EXAMINER:	SRO applicant should state or otherwise indicate recognition of LCO

PERFORMANCE INFORMATION

JPM Number: S.3

Revision: 0 chg 3

Task Title: Respond to Main Steam Pressure Transmitter MSS-PT20D Failure

requirement.

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

Examiner Cue: **The evaluation for this JPM is complete.**

Stop Time:

STUDENT HANDOUT

JPM Number: S.3

Initial Conditions: The plant is steady state at 100% power with no equipment out of service. You are to respond to the simulator just as you would respond to the actual plant.

Initiating Cues: You have the shift.

JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: CONTROL ROD OUT OF ALIGNMENT

ID Number: 2K7 NRC S.4

Revision: 1 ch 5

[Change 2, 09/24/2003, J. Deveau]
[Change 3, R.J. Acquaro, 5/30/06]

II. Initiated:

R.L. Lueneburg
Developer

5/15/97
Date

III. Reviewed:

R. Royce
Technical Reviewer

6/13/97
Date

R. Carr
Instructional Reviewer

6/13/97
Date

IV. Approved:

Barry Pinkowitz
Operations Manager

06/13/97
Date

Dave Lazarony
Nuclear Training Supervisor

06/13/97
Date

JOB PERFORMANCE MEASURE WORKSHEET

Change 1	Update to procedure rev 4. Barry Pinkowitz	08/04/2003
Change 2	Update to procedure rev 5 01. John Deveau	09/24/2003
Change 3	Update to procedure rev 007-00 and other minor enhancements. R.J. Acquaro	05/30/2006
Change 4	Verified JPM up to date with rev 008 to AOP 3552. Modified JPM to remove all steps associated with Attachment A of AOP 3552 except for steps relating to establishing conditions for alignment, aligning the control rod, and restoring the rod control system. NRC Request. DLM	02/07/07
Change 5	Added to simulator setup page to markup AOP 3552 Attachment A through step 4. DLM	2/20/07

JOB PERFORMANCE MEASURE WORKSHEET

JPM Tracking Number: 2K7 NRC S.4

Validation Time: 9____ minutes

Task Title: CONTROL ROD OUT OF ALIGNMENT

Time Critical Task: () YES (X) NO

Task Number: 344*05*030 and 344*05*041

System: 001, Control Rod Drive System

K/A Number: 001-A2.03

K/A Rating: 3.5 / 4.2

Applicable Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Satisfactorily recover from a misaligned control rod using AOP 3552 Attachment A

Required Materials: AOP 3552, Rev. 008-00

General References:

READ TO THE EXAMINEE

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

Initial Conditions: **A problem in the EHC circuit caused a momentary runback of the turbine. During the subsequent insertion of the reactor control rods, rod D4 in Control Bank D was observed to be misaligned. The control room team entered AOP 3552, *Malfunction of the Rod Drive System*, and has decided that Attachment A to that procedure is to be used to recover from the misaligned rod.**

The lift coil fuse for rod D4 was blown, and has been replaced.

Rod D4 has been misaligned for less than one hour.

Initiating Cues: **The US has directed you to establish conditions for alignment, align the control rod, and then restore the rod control system using Attachment A of AOP 3552, starting at step 5.**

SIMULATOR REQUIREMENTS: 1. **Reset to IC# 18.**

JOB PERFORMANCE MEASURE WORKSHEET

2. Enter malfunction **RD0457** Control Band "D" stuck rod "D4"
3. Place the master silence switch in the "Master Silence" position and place the simulator in "RUN".
4. Reduce turbine load by about 20 MWe using the Load Limit potentiometer to cause Control Bank D to insert.
5. Allow rod D4 to misalign by greater than 12 steps, then place Rod Bank SEL switch to MAN.
6. Allow the simulator time to stabilize prior to performing the next step.
7. Remove malfunction **RD0457** to allow recovery of the rod.
8. Have ready a copy of AOP 3552 Attachment A, marked up through step 4.

Approximate simulator setup time is 12 minutes.

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

STEP 1 _____

Performance Step: Obtains copy of AOP 3552

GRADE _____

Standards: Obtains a copy of AOP 3552 and refers to Attachment A, step 5.

STEP 2 _____

Performance Step: A ROD CONTROL URGENT FAILURE (MB4C 4-8) alarm will occur during recovery unless the affected rod is in Shutdown Bank C, D, or E.

If the affected rod is in a Control Bank, a ROD CONTROL BANKS LIMIT LO (MB4C 3-9) alarm and ROD CONTROL BANKS LIMIT LO LO (MB4C 4-9) alarm may occur during recovery and remain in alarm until the P/A converter is reset. Therefore, response to these alarms is not appropriate during this period.

GRADE _____

Standards: Candidate review notes.

Grade: SAT _____ UNSAT _____

STEP 3 _____

Performance Step: Establish Conditions For Rod Alignment

Verify cause of the misaligned rod - CORRECTED.

GRADE _____

Standards: Recognizes that cause has been corrected from information provided in the Initial Conditions. If questioned as

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

the US provide the following Cue:

Cue (if required): Inform the candidate that the lift coil fuse for rod D4 was blown, and has been replaced.

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

STEP 4 X **Performance Step:** Record affected group step counter position.
(Step 5.b)

GRADE _____ X **Standards:** Notes the position of the control bank D group 1 step counter and records that number in Step 5.b.

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

STEP 5 _____ **Performance Step:** Align control rod disconnect switches:
(Step 5.c.1)

Unlock and Open control rod disconnect switch box (BOX 3RDS-HDSBOX1, CAT 60, Key #18 in CO key locker)

Cue: Inform examinee that the rod control disconnect box is unlocked.

GRADE _____ _____ **Standards:** Locates and opens control rod disconnect switch box.

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

STEP 6 X **Performance Step:** Place each rod disconnect switch for the affected bank, *except the misaligned rod*, to the ROD DISCONNECTED position.

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

GRADE	_____	<u> X </u>	Standards:	Positions all of the disconnect switches for the control bank D rods with the exception of rod D4 "up" to the ROD DISCONNECT position.
			Grade:	SAT _____ UNSAT _____
STEP	<u> 7 </u>	<u> X </u>	Performance Step:	Place control rod bank SEL switch to affected bank position.
GRADE	_____	<u> X </u>	Standards:	Places the control bank SEL switch to the CBD position.
			Grade:	SAT _____ UNSAT _____
STEP	<u> 8 </u>	_____	Performance Step:	Align Rod
			(Step 6.a)	Using DRPI display, Check misaligned rod - HIGHER THAN ASSOCIATED BANK.
GRADE	_____	_____	Standards:	Checks the DRPI display and verifies that rod D4 is higher than the remaining rods in control bank D.
			Grade:	SAT _____ UNSAT _____
STEP	<u> 9 </u>	<u> X </u>	Performance Step:	Insert misaligned rod until next lower position DRPI LED just changes state.
GRADE	_____	<u> X </u>	Standards:	Takes the In-Hold-Out switch to the "IN" position until the next lower position LED for rod D4 comes on, then releases the switch.

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

			Comment:	This action will cause main board annunciator MB4C 4-8 to alarm. The examinee should silence and acknowledge the alarm. This is not required to satisfy the critical nature of the step.
			Grade:	SAT _____ UNSAT _____
STEP	<u>10</u>	<u>X</u>	Performance Step:	Reset affected group step counter to a value of 2 steps higher than affected rod's indicated DRPI position.
				(Step 6.c)
GRADE	_____	<u>X</u>	Standards:	Resets the control bank D group 1 step counter to a position that corresponds to 2 steps higher than the DRPI indication for rod D4.
			Grade:	SAT _____ UNSAT _____
STEP	<u>11</u>	_____	Performance Step:	Proceed to step 6.g.
				(Step 6.d)
GRADE	_____	_____	Standards:	Proceeds to step 6.g.
			Grade:	SAT _____ UNSAT _____
STEP	<u>12</u>	_____	Performance Step:	Verify rod misaligned - LESS THAN 16 hours.
				(Step 6.g)
GRADE	_____	_____	Standards:	Use information provided in the Initial Conditions.
			Grade:	SAT _____ UNSAT _____

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

STEP	<u>13</u>	<u>X</u>	Performance Step:	Move misaligned rod until affected group step counter indicates value recorded in step 5.b.
			(Step 6.h)	
GRADE	_____	<u>X</u>	Standards:	Takes the In-Hold-Out switch to the "IN" position until the control bank D group 1 step counter is at the number that was previously recorded and then releases the switch.
			Grade:	SAT _____ UNSAT _____

STEP	<u>14</u>	<u>X</u>	Performance Step:	Restore Rod Control System
			(Step 7.a)	Place all lift coil disconnect switches for affected bank to ROD CONNECTED position.
GRADE	_____	<u>X</u>	Standards:	Returns all lift coil disconnect switches to the "Connected" position.
			Grade:	SAT _____ UNSAT _____

STEP	<u>15</u>	_____	Performance Step:	Check ROD CONTROL URGENT FAILURE (MB4C 4-8) annunciator – LIT
			(Step 7.b)	
GRADE	_____	_____	Standards:	Observes that annunciator MB4C 4-8 IS LIT.
			Grade:	SAT _____ UNSAT _____

STEP	<u>16</u>	<u>X</u>	Performance Step:	Press ROD DRIVE RESET
			(Step 7.c)	
GRADE	_____	<u>X</u>	Standards:	Presses the ROD DRIVE RESET

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

pushbutton on MB4.

Comments:

This action will cause annunciator MB4C 4-8 to clear. The candidate should reset this alarm. This is not required to complete the critical task of the step.

Grade:

SAT _____ **UNSAT** _____

STEP 17 _____

Performance Step:
(Step 7.d)

Place control rod bank SEL switch in MAN

GRADE _____ _____

Standards:

Rotates the control bank SEL switch to the MAN position.

Grade:

SAT _____ **UNSAT** _____

STEP 18 _____

Performance Step:
(Step 7.e)

Check affected rod in a – CONTROL BANK

GRADE _____ _____

Standards:

Examinee determines that rod D4 is in a control bank.

Grade:

SAT _____ **UNSAT** _____

STEP 19 _____

Performance Step:
(Step 7.f)

Check affected rod in GROUP 1

GRADE _____ _____

Standards:

Examinee determines that D4 is a Group 1 rod.

Grade:

SAT _____ **UNSAT** _____

PERFORMANCE INFORMATION

Facility: Millstone Unit 3 System: 001

JPM Number: 2K7 NRC S.4

Task Title: CONTROL ROD OUT OF ALIGNMENT

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

**Terminating
Cue:**

The evaluation for this JPM is
concluded.

Stop Time: _____

VERIFICATION OF COMPLETION

JPM Number: 2K7 NRC S.4

Revision: 1 chg 5

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 9

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

EXAMINEE HANDOUT

INITIAL CONDITIONS AND INITIATING CUES

JPM Tracking Number: 2K7 NRC S.4

Initial Conditions: A problem in the EHC circuit caused a momentary runback of the turbine. During the subsequent insertion of the reactor control rods, rod D4 in Control Bank D was observed to be misaligned. The control room team entered AOP 3552, *Malfunction of the Rod Drive System*, and has decided that Attachment A to that procedure is to be used to recover from the misaligned rod.

The lift coil fuse for rod D4 was blown and has been replaced.

Rod D4 has been misaligned for less than one hour.

Initiating Cues: The US has directed you to establish conditions for alignment, align the control rod, and then restore the rod control system using Attachment A of AOP 3552, starting at step 5.

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

2/20/07	Added malfunction TC07B (turbine CV #2 fails as is) to remove the ambiguity of whether or not the control valves are closing too slow or are not fully closed. Added malfunction MS12C (C MSIV stuck open) to require an action on the part of the applicant once the turbine fails to run back, since an MSI has occurred and the MSIVs would otherwise all be closed. Made closing the 'C' MSIV a critical step. Modified the JPM timeline to insert the RCP trip malfunction in after the applicant takes the shift. Modified affected cues and standards as a result of the above changes.	Rev 0 chg 1

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC S.5 Revision: 0 chg 1

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

System: 012

Time Critical Task: () YES (X) NO

Validated Time (minutes): 5

Task Number(s): 000*05*084

Applicable To: SRO _____ RO _____ PEO _____

K/A Number:	012-A4.01	K/A Rating:	4.5 / 4.5
	013-A4.03		4.5 / 4.7
	<u>EPE: 007-EA2.02</u>		<u>4.3 / 4.6</u>

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

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

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

Required Materials: None.

General References: EOP 35, E-0, Rev. 022

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

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

- Simulator Requirements:
1. Reset to IC-18 or any other 100% power certified IC. Ensure the turbine is on the Load Limit.
 2. Enter malfunctions TC03 (turbine fails to trip), RP07A ("A" train of SI fails to auto actuate), TC07B (turbine CV #2 fails as is) and MS12C (C MSIV stuck open).
 3. Place the simulator in run. Ensure plant is stable.
 4. Place the simulator in "freeze".
 5. Discuss details of the US role and master silence switch operation with the examiner.
 6. Place the simulator in "run" after the examinee has read and understands the Initial conditions and initiating cues.

Approximate simulator setup time is 5-7 minutes.

Simulator Instruction:

T = 0 seconds: Candidate takes the shift.

At T = 30 seconds, insert malfunction RC09B ('B' RCP Trip)

When the applicant goes to 'CLOSE' on the 'C' MSIV switch, remove malfunction MS12C

Initial Conditions:

The plant is steady state at 100% power with no equipment out of service. You are to respond to the simulator just as you would respond to the actual plant. I will act as the Unit Supervisor. Do you have any questions?
Are you ready to begin?

Initiating Cues:

You have the shift.

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

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

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

Start Time: _____

Evaluator NOTE: When the 'B' RCP and reactor trips, go to 'Master Silence' and provide the following cue:

CUE: Alarms are in master silence, carry out the immediate actions of E-0.

STEP 1 _____

Performance Step: Verify Reactor Trip.
1.

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

GRADE _____

Standards: Observes that the reactor trip breakers are open, all the rod bottom lights are lit and that reactor power is decreasing. Reports that the reactor is tripped.

Grade: SAT _____ UNSAT _____

STEP 2 _____

Performance Step: Verify Turbine Trip.
2.a.

- a. Check all turbine stop valves - CLOSED.

GRADE _____

Standards: Looks at the stop valve meter indications on the EHC insert on MB7 and observes that all of the turbine stop valves are open. Shifts to the actions in the RNO column.

Grade: SAT _____ UNSAT _____

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

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

STEP	<u>3</u>	<u>X</u>	Performance Step: TRIP the turbine. 2.a.RNO
GRADE	_____	<u>X</u>	Standards: Pushes the turbine trip push-button on the EHC insert. Looks at the stop valve meter indications on the EHC insert on MB7 and observes that all of the turbine stop valves are still open.
			Grade: SAT _____ UNSAT _____
STEP	<u>4</u>	<u>X</u>	Performance Step: <u>IF</u> the turbine will <u>NOT</u> trip, <u>THEN</u> Runback the turbine to close the control valves. <u>IF</u> the turbine can <u>NOT</u> be runback <u>THEN</u> CLOSE the MSIVs and MSIV bypass valves.
GRADE	_____	<u>X</u>	Standards: Rapidly rotates the load limiting control knob in the lower direction all the way to the zero position. Observes that the control valves are closing except for the #2 control valve. Continues actions in the RNO column.
			Grade: SAT _____ UNSAT _____
			Evaluator NOTE: SI and MSI will have actuated due to the turbine trip delay. The 'C' MSIV will be stuck open.
GRADE	_____	<u>X</u>	Standards: Observes that the 'C' MSIV is still open. Applicant goes to 'CLOSE' on the 'C' MSIV switch.
GRADE	_____	_____	Standards: Applicant goes to 'CLOSE' on the 'A', 'B' and 'D' MSIV switches and verifies the MSIV Bypass valves closed.

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

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

STEP	<u>5</u>	_____	Performance Step:	Verify Power to AC Emergency Busses. a. Check AC emergency busses 34C and 34D - BOTH ENERGIZED
GRADE	_____	_____	Standards:	Determines Busses 34C And 34D are both energized by observation of the Main Board 8 emergency bus voltage indicators reading about 4160 volts OR emergency load center voltage indicators (8) reading about 480 volts.
			Grade:	SAT _____ UNSAT _____
			Note:	An SI will have actuated due to the turbine not tripping.
STEP	<u>6</u>	_____	Performance Step:	Check if SI is Actuated. a. Verify SAFETY INJECTION ACTUATION annunciator (MB4D 1-6 or MB2B 5-9) - LIT
GRADE	_____	_____	Standards:	AT MB4 or MB2, observes that the Safety Injection Actuation annunciator is lit.
			Grade:	SAT _____ UNSAT _____
STEP	<u>7</u>	_____	Performance Step:	By observation of ESF Group 2 Status Panel lights, Verify both trains of SI - ACTUATED
GRADE	_____	_____	Standards:	At MB2, observes ESF Group 2 Status Panel and determines only one train of SI has actuated. Shifts to the actions

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

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

in the RNO column.

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

STEP 8 X **Performance Step:** Manually Initiate SI.
4.b.RNO

GRADE _____ X **Standards:** At MB2 or MB4, manually actuates SI by rotating the SI actuation switch to the actuate position.
Standards: By observation of ESF Group 2 Status Panel determines that both trains of SI have actuated.

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

STEP 9 _____ **Performance Step:** Check reactor trip and bypass
4.c. breakers - OPEN

GRADE _____ _____ **Standards:** At MB4, observes that the reactor trip and bypass breakers are open.

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

STEP 10 _____ **Performance Step:** Reports that the first four steps of E-0
have been completed.

GRADE _____ _____ **Standards:** Informs the examiner that he has completed the first four (4) steps of E-0 and that a safety injection has occurred.

Evaluator NOTE: If the applicant positions at MB5 for service water verification (step 5) with no report of first 4 steps complete, provide the termination cue.

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

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

Grade: SAT UNSAT

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time:

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.5

Revision: 0 chg 1

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 5

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

Candidate HANDOUT

JPM Number: 2K7 NRC S.5

Initial Conditions: The plant is steady state at 100% power with no equipment out of service. You are to respond to the simulator just as you would respond to the actual plant. I will act as the Unit Supervisor.

Initiating Cues: You have the shift.

JOB PERFORMANCE MEASURE WORKSHEET

I. JPM Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

ID Number: 2K7 NRC S.6

Revision: 0

II. Initiated:

Robert Royce 
Developer

2/14/07
Date

III. Reviewed:

CMartin
Technical Reviewer

2/24/7
Date

IV. Approved:

J. Ketterman
Manager

2/26/07
Date

JOB PERFORMANCE MEASURE WORKSHEET

Facility: Millstone Unit 3

JPM Tracking Number: 2K7 S.6
minutes

Validation Time: 15

Task Title: Establish RHR Boron Concentration

Time Critical Task: () YES (X) NO

Task Number: 005*01*025

K/A Number: 005.A4.01

K/A Rating: 3.6/3.4

Applicable Methods of Testing:

Simulate Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Task Standards: Establish RHR Train B Boron Concentration using OP 3310A

Required Materials: None

General References: OP 3310A Rev. 16-09

READ TO THE EXAMINEE

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

Initial Conditions:

- The Plant is in MODE 5 with train 'A' of RHR in the cooldown Mode. It is desired to place the 'B' train of RHR in service.

Initiating Cues:

The US has directed you to perform the following:

- Establish RHR Train B Boron Concentration per OP 3310A, Section 4.4.
- Perform steps 4.4.6 through 4.4.21.

JOB PERFORMANCE MEASURE WORKSHEET

Simulator Requirements:

1. Reset to IC 27 (or IC 96 created for this JPM, based on IC 27).
2. Ensure the following are set properly:
 - PK131 set to maintain RCS pressure at 350# (controller pot setting of 5.2)
 - 3RCS*HCV607 is closed
 - 3RCS*HCV606 potentiometer set for a valve position of 20% open
3. Perform OP3310A, sections 4.7.1 and 4.7.3 to stop Train "B" RHR.
4. Perform OP 3310A, Aligning RHR Train B for Safety Injection Mode.
5. **Ensure FK618 and FK619 are set for 4000 gpm.**
6. Acknowledge/clear annunciators. Place the simulator in "freeze".
7. Place the simulator in "run" after the examinee has read the initial conditions and initiating cues.

Approximate simulator setup time is 20 minutes.

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

Start Time: _____

STEP 1 _____ **Performance Step:** **IF 3RHS*MV8716B, "PP B HOT LEG INJ," is not open, PERFORM the following:**

- a. PLACE 3RHS*MV8716B, "POWER LOCKOUT," in "ON" (MB2R).
- b. CHECK the associated white light, lit (MB2R).
- c. OPEN 3RHS*MV8716B, "PP B HOT LEG INJ" (MB2).

GRADE _____ _____ **Standards:** **Verifies 3RHS*MV8716B is already open by verifying the green light is off the red light is lit on MB2.**

STEP 4 _____ **Performance Step:** **To close 3RHS*MV8716A, PERFORM the following:**

- a. PLACE 3RHS*MV8716A, "POWER LOCKOUT," in "ON" (MB2R).
- b. CHECK the associated white light, lit (MB2R).
- c. CLOSE 3RHS*MV8716A, "PP A HOT LEG INJ" (MB2).

GRADE _____ _____ **Standards:** **Verifies 3RHS*MV8716A is already closed by verifying the green light is lit and the red light is off on MB2.**

CUE (if required): **3RHS*MV8716A is closed since train 'A' of RHR is in the cooldown mode.**

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

STEP	<u>5</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.8.a	To close 3SIL*MV8809B, PERFORM the following: PLACE 3SIL*MV8809B, "POWER LOCKOUT," in "ON" (MB2R).
GRADE	_____	<u>X</u>	Standards:	PLACES 3SIL*MV8809B, "POWER LOCKOUT," in "ON" (MB2R).
STEP	<u>6</u>	_____	Performance Step: OP 3310A, 4.4.8.b	CHECK the associated white light, lit (MB2R).
GRADE	_____	_____	Standards:	CHECKS the associated white light lit (MB2R).
STEP	<u>7</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.8.c	CLOSE 3SIL*MV8809B, "PP B COLD LEG INJ" (MB2).
GRADE	_____	<u>X</u>	Standards:	Depresses the CLOSE pushbutton for 3SIL*MV8809B, on MB2 and observes the green light comes on and the red light goes off.
STEP	<u>8</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.9	PLACE the "HX B FLOW CONT" switch in the "COOLDOWN" position (MB2).
GRADE	_____	<u>X</u>	Standards:	Places the "HX B FLOW CONT" switch in the "COOLDOWN" position (MB2).
STEP	<u>9</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.10	CLOSE 3RHS-FK619, "RHR HDR FLOW," (100% output). (MB2)

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

GRADE	<u> </u>	<u> X </u>	Standards:	Depresses the down arrow or up arrow pushbutton and observes that the manual light comes on and the auto light goes off. Depresses the down arrow pushbutton until output indicates 100% and/or the full down light is lit.
STEP	<u> 10 </u>	<u> X </u>	Performance Step: OP 3310A, 4.4.11	ADJUST 3RHS-HC607, "HX B FLOW," to between 30% and 40% (MB2).
GRADE	<u> </u>	<u> X </u>	Standards:	Rotates the potentiometer for HCV607. Observes that the position-indicating pointer for HCV607 moves to the 30-40% position.
STEP	<u> 11 </u>	<u> </u>	Performance Step: OP 3310A, 4.4.12	4.4.12 VERIFY Train B RHR loop suction valves, closed (MB2): <ul style="list-style-type: none"> • 3RHS*MV8702A, "B ISOL (OUT)" • 3RHS*MV8702B, "B ISOL (IN)" • 3RHS*MV8702C, "RCS/PP B SUCT ISOL"
GRADE	<u> </u>	<u> </u>	Standards:	VERIFIES Train B RHR loop suction valves closed by checking green lights lit and red lights off (MB2).
STEP	<u> 12 </u>	<u> </u>	Performance Step: OP 3310A, 4.4.13	VERIFY 3SIL*MV8812B, "RWST/PP B SUCT ISOL," open (MB2).
GRADE	<u> </u>	<u> </u>	Standards:	VERIFIES 3SIL*MV8812B by checking the green light lit and the red light off (MB2).

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

STEP	<u>13</u>	<u>X</u>	Performance Step: 4.4.14 PLACE the refueling water recirculation pumps in "PULL-TO-LOCK" (MB2): <ul style="list-style-type: none"> • 3QSS-P1A, "RWST RECIRC PPS" "1A" • 3QSS-P1B, "RWST RECIRC PPS" "1B"
GRADE	_____	<u>X</u>	Standards: PLACES 3QSS-P1A in "PULL-TO-LOCK" (MB2).
GRADE	_____	_____	Standards: Verifies that 3QSS-P1B is already in "PULL-TO-LOCK" (MB2).
STEP	<u>14</u>	<u>X</u>	Performance Step: UNLOCK and OPEN 3RHS*V43, RHR to RWST recirculation isolation.
GRADE	_____	<u>X</u>	Standards: Contacts either the US or PEO and directs them to UNLOCK and OPEN 3RHS*V43, RHR to RWST recirculation isolation.
			Booth Operator: Open 3RHS*V43 using Remote RHR03 to '100%'.
			CUE (after opening 3RHS*V43) 3RHS*V43, "RHR to RWST recirculation isolation", has been unlocked and opened.
STEP	<u>15</u>	<u>X</u>	Performance Step: START 3RHS*P1B, "RHR PP B" (MB2).
GRADE	_____	<u>X</u>	Standards: Rotates the control switch for pump

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade
3RHS*P1B to the start position and observes the indicating lights shift to green OFF, red ON (starting amperage should also be checked on the amperage meter.)

STEP	<u>16</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.17	4.4.17 Slowly OPEN 3RHS-FK619, "RHR HDR FLOW," to establish between 4,000 gpm and 4,160 gpm flow (MB2).
GRADE	_____	<u>X</u>	Standards:	Depresses the up arrow pushbutton and monitors the flow rate, until indicated flow is between 4,000 gpm and 4,160 gpm flow (MB2).
STEP	<u>17</u>	<u>X</u>	Performance Step: OP 3310A, 4.4.18	VERIFY 3RHS-FK619, "RHR HDR FLOW," set to 4,000 gpm and PLACE in "AUTO" (MB2).
GRADE	_____	<u>X</u>	Standards:	VERIFIES 3RHS-FK619, "RHR HDR FLOW," set to 4,000 gpm, depresses the 'Auto/manual' pushbutton and observes that the manual light goes out and the auto light comes on.

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

STEP	<u>18</u>	_____	<p>Performance Step: OP 3310A, 4.4.19</p> <p>IF desired, COMPLETE a partial surveillance for 3SIL*V9 and 3RHS*V5 open in the appropriate portion of SP 3610A.2-005.</p>
			<p>CUE: Inform Examinee that it is not desired to perform the surveillance.</p>
GRADE	_____	_____	<p>Standards: Examinee moves on to step 4.4.20.</p>
Step	<u>19</u>	_____	<p>Performance Step: OP 3310A, 4.4.20.a</p> <p>To ensure proper ventilation, PERFORM the following (VP1): VERIFY 3HVQ*ACUS1B, "RHR ACU," running.</p>
GRADE	_____	_____	<p>Standards: Examinee observes the red light lit and green light off for 3HVQ*ACUS1B at VP1C</p> <p>Evaluator NOTE: Examinee may match flags on 3HVQ*ACUS1B switch. This is acceptable.</p>
Step	<u>20</u>	_____	<p>Performance Step: OP 3310A, 4.4.20.b</p> <p>b. IF 3HVQ*FN5A and 3HVQ*FN6A, "AFW AREA EMER SPLY/FANS/DMPRS" are not running AND at least 90 seconds has elapsed since HVQ*ACUS1B, "RHR ACU," was started, VERIFY 3HVQ*FN5B and 3HVQ*FN6B, "AFW AREA EMER SPLY/FANS/DMPRS," running.</p>

PERFORMANCE INFORMATION

Facility: Millstone Unit 3

System: RHS

JPM Number: 2K7 S.6

Rev. 0

Task Title: ESTABLISH RHR TRAIN B BORON CONCENTRATION

Denote Critical Steps with an "X"

NOTE Critical Steps must be completed correctly to achieve a satisfactory grade

GRADE _____

Standards:

Verifies either 3HVQ*FN5A and 3HVQ*FN6A, or 3HVQ*FN5B and 3HVQ*FN6B are running by observing the applicable red light lit and green light off at VP1.

STEP 21 _____

Performance Step: OP 3310A, 4.4.21

IF desired, REQUEST Chemistry Department sample Train B RHR for boron concentration.

GRADE _____

Standards:

Contacts the US, asking if sampling for boron concentration is desired.

Cue:

US acknowledges request for Chemistry Department to sample Train B RHR for boron concentration.

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF COMPLETION

Job Performance Measure Number: 2K7 S.6 Revision: 0

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)

EXAMINEE HANDOUT

INITIAL CONDITIONS AND INITIATING CUES

JPM Tracking Number: 2K7 S.6

Initial Conditions:

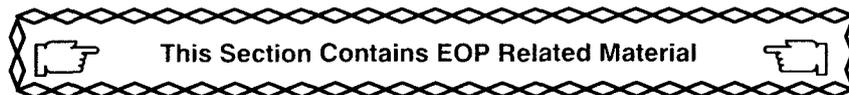
- The Plant is in MODE 5 with train 'A' of RHR in the cooldown Mode. It is desired to place the 'B' train of RHR in service.

Initiating Cues:

The US has directed you to perform the following:

- Establish RHR Train B Boron Concentration per OP 3310A, Section 4.4.
- Perform steps 4.4.6 through 4.4.21.

4.4 Establishing RHR Train B Boron Concentration



NOTE

1. Establish boron concentration in only one RHR train at a time.
2. The “3RHS*P1B Full Flow and Check Valve Operability Test” section of SP 3610A.2, Residual Heat Removal Pump 3RHS*P1B Operational Readiness Test may be performed in conjunction with this section.

- 4.4.1 IF establishing boron concentration from the Auxiliary Shutdown Panel, Go To Section 4.14.
- 4.4.2 IF this section is being performed in conjunction with SP 3610A.2, “Residual Heat Removal Pump 3RHS*P1B Operational Readiness Test,” (Section) “3RHS*P1B Full Flow and Check Valve Operability Test,” Go To step 4.4.4.
- 4.4.3 IF the boron concentration of RHR Train B is known, Go To step 4.4.26.
- 4.4.4 IF RHR Train B is being restored from maintenance activities, **PERFORM** the following as required based on maintenance activities:
- OP 3310A–001, “Residual Heat Removal System (Common)”
 - OP 3310A–003, “Residual Heat Removal System Train B”
 - OP 3310A–004, “Residual Heat Removal System (Instrumentation)” (Train B components only)
 - OP 3310A–005, “RHR Electrical Check Off List” (Common and Train B components only)
- 4.4.5 **CHECK** the plant in MODE 4, 5, 6, or Zero.

Level of Use
Continuous

STOP THINK ACT REVIEW

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- 4.4.6 IF 3RHS*MV8716B, "PP B HOT LEG INJ." is *not* open.
PERFORM the following:
- a. PLACE 3RHS*MV8716B, "POWER LOCKOUT," in "ON" (MB2R).
 - b. CHECK the associated white light, lit (MB2R).
 - c. OPEN 3RHS*MV8716B, "PP B HOT LEG INJ" (MB2).
- 4.4.7 To close 3RHS*MV8716A, PERFORM the following:
- a. PLACE 3RHS*MV8716A, "POWER LOCKOUT," in "ON" (MB2R).
 - b. CHECK the associated white light, lit (MB2R).
 - c. CLOSE 3RHS*MV8716A, "PP A HOT LEG INJ" (MB2).
- 4.4.8 To close 3SIL*MV8809B, PERFORM the following:
- a. PLACE 3SIL*MV8809B, "POWER LOCKOUT," in "ON" (MB2R).
 - b. CHECK the associated white light, lit (MB2R).
 - c. CLOSE 3SIL*MV8809B, "PP B COLD LEG INJ" (MB2).
- 4.4.9 PLACE the "HX B FLOW CONT" switch in the "COOLDOWN" position (MB2).
- 4.4.10 CLOSE 3RHS–FK619, "RHR HDR FLOW," (100% output). (MB2)
- 4.4.11 ADJUST 3RHS–HC607, "HX B FLOW," to between 30% and 40% (MB2).
- 4.4.12 VERIFY Train B RHR loop suction valves, closed (MB2):
- 3RHS*MV8702A, "B ISOL (OUT)"
 - 3RHS*MV8702B, "B ISOL (IN)"
 - 3RHS*MV8702C, "RCS/PP B SUCT ISOL"

- 4.4.13 VERIFY 3SIL*MV8812B. "RWST/PP B SUCT ISOL." open (MB2).
- 4.4.14 PLACE the refueling water recirculation pumps in "PULL-TO-LOCK" (MB2):
- 3QSS-P1A, "RWST RECIRC PPS" "1A"
 - 3QSS-P1B, "RWST RECIRC PPS" "1B"
- 4.4.15 UNLOCK and OPEN 3RHS*V43, RHR to RWST recirculation isolation.
- 4.4.16 START 3RHS*P1B, "RHR PP B" (MB2).
- 4.4.17 Slowly OPEN 3RHS-FK619, "RHR HDR FLOW," to establish between 4,000 gpm and 4,160 gpm flow (MB2).
- 4.4.18 VERIFY 3RHS-FK619, "RHR HDR FLOW," set to 4,000 gpm and PLACE in "AUTO" (MB2).
- 4.4.19 IF desired, COMPLETE a partial surveillance for 3SIL*V9 and 3RHS*V5 open in the appropriate portion of SP 3610A.2-005.
- 4.4.20 To ensure proper ventilation, PERFORM the following (VP1):
- a. VERIFY 3HVQ*ACUS1B, "RHR ACU," running.
 - b. IF 3HVQ*FN5A and 3HVQ*FN6A, "AFW AREA EMER SPLY/FANS/DMPRS" are *not* running AND at least 90 seconds has elapsed since 3HVQ*ACUS1B, "RHR ACU," was started, VERIFY 3HVQ*FN5B and 3HVQ*FN6B, "AFW AREA EMER SPLY/FANS/DMPRS," running.
- 4.4.21 IF desired, REQUEST Chemistry Department sample Train B RHR for boron concentration.
- 4.4.22 VENT the air from the RHR B heat exchanger and seal cooler using the following valves:
- 3RHS*V977, RHR pump B seal cooler vent
 - 3RHS*V988, RHR B heat exchanger vent
 - 3RHS*V989, RHR B heat exchanger vent

<p>Level of Use Continuous</p>

STOP THINK ACT REVIEW

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- 4.4.23 WHEN the following have been met. STOP 3RHS*PIB, "RHR PP B" (MB2):
- IF applicable, Chemistry Department has obtained boron sample
 - IF SP 3610A.2, "Residual Heat Removal Pump 3RHS*PIB Operational Readiness Test." (Section) "3RHS*PIB Full Flow and Check Valve Operability Test," is being performed, all required data has been recorded
- 4.4.24 CLOSE and LOCK 3RHS*V43, RHR to RWST isolation.
- 4.4.25 PLACE the desired refueling water recirculation pump in "AUTO" (MB2):
- 3QSS-P1A, "RWST RECIRC PPS" "1A"
 - 3QSS-P1B, "RWST RECIRC PPS" "1B"
- 4.4.26 IF RHR Train B boron concentration is greater than or equal to RCS boron concentration, Go To step 4.4.29.
- 4.4.27 IF both the following conditions are met, Go To step 4.4.29:
- RHR Train B boron concentration is greater than 2,600 ppm
 - No T/S ACTION is in effect prohibiting positive reactivity additions
- 4.4.28 To determine RWST boron concentration, PERFORM the following:
- a. REQUEST the Chemistry Department sample the RWST boron concentration.
 - b. IF RWST boron concentration is less than 2,700 ppm, Refer To OP 3304C, "Primary Makeup and Chemical Addition," and PERFORM boric acid makeup to the RWST to increase the concentration to between 2,700 ppm and 2,900 ppm.
 - c. Go To step 4.4.4.
- 4.4.29 To align RHR Train B for plant cooldown, Go To Section 4.6.

9

8

5

– End of Section 4.4 –

Level of Use
Continuous

STOP THINK ACT REVIEW

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JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

I. JPM Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

JPM ID Number: 2K7 NRC S.7

Revision: 0 chg 1

II. Initiated:

D. Minnich
Developer

12/27/06
Date

III. Reviewed:

Ray Martin
Technical Reviewer

1/24/07
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Tim Kulterman
Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

SUMMARY OF CHANGES

Change	Description	Date
Chg 1	Changed performance step 4 (Attempt to use a PORV to depressurize) from a critical step to a non-critical step, since improper performance or omission of the step will not affect the outcome of the JPM. Modified performance step 7 to CLOSE 3CHS*AV8146/47 since these valves will be found open (fail open on loss of air) and made it a critical step. Changed performance step 8 (Fully open 3CHS*FCV121) from a critical step to a non-critical step, and modified the standard, since 3CHS*FCV121 is already fully open. Deleted performance steps 14 through 19 since these steps are just to recover from aux spray operation. Updated validated time to most recent validation run.	2/20/07

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Candidate: _____

JPM ID Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

System: 010

Time Critical Task: () YES (X) NO

Validated Time (minutes): 16

Task Number(s): 000-05-050

Applicable To: SRO X RO X PEO _____

K/A Number: 010-A2.03 K/A Rating: 4.1 / 4.2
009-EA1.15 3.9 / 4.1

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

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

Task Standards: Depressurize the RCS to refill the PZR as specified in ES-1.2, steps 10 and 11.

Required Materials: None

General References: ES-1.2, Post LOCA Cooldown and Depressurization, Rev. 015-00

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC S.7

Revision: 0 chg 1

- Simulator Requirements:
- 1 Reset to IC-79, trip from 100% power, Post-LOCA cooldown conditions.
 - 2 Insert the following I/Os:
 - 3 (RC) 3RCS*PCV455A OPEN TO FALSE
 - 4 (RC) 3RCS*PCV455A RED TO FALSE
 - 5 (RC) 3RCS*PCV455A GREEN TO FALSE
 - 6 (RC) 3RCS*PCV456 OPEN TO FALSE
 - 7 (RC) 3RCS*MV8000A RED TO FALSE
 - 8 (RC) 3RCS*MV8000A GREEN TO FALSE
 - 9 Roll the following recorders forward:
 - Pressurizer level.
 - RCS wide range pressure.
 - 10 Place the simulator in "RUN" and perform the following manual actions:
 - Acknowledge/clear all alarms.
 - Throttle AFW flow to 100 gpm for each S/G.
- NOTE: Move through this setup expeditiously to avoid pressurizer refill above 25% before the candidate gets to the depressurization step.
- Acknowledge/clear associated alarms.
 - Place the simulator in "FREEZE."
 - Ensure key for 3RCS*AV8145 inserted for valve operation
 - Hang a yellow tag on 3RCS*MV8000
- 11 After the examinee has received the initial conditions and initiating cues, place the simulator in "RUN."
- Approximate simulator setup time is 5 minutes.

Initial Conditions:

Following a loss of coolant accident which resulted in a safety injection, the Control Room Team has worked through the EOPs and is currently carrying out the actions in ES-1.2, Post LOCA Cooldown and Depressurization. The "A" PORV is out of service due to an electrical short in the control circuitry.

Initiating Cues:

The US has directed you to depressurize the RCS to refill the PZR using ES-1.2, steps 10 and 11.

**** NOTES TO EVALUATOR ****

1. Critical steps for this JPM are indicated by an "X" after the step number. For the student to achieve a satisfactory grade, **ALL** critical steps must be completed correctly.

JOB PERFORMANCE MEASURE GUIDE (Continued)

The students performance is graded by an "S" for satisfactory or a "U" for unsatisfactory on each step.

2. When the student states what his/her simulated action/observation would be, read the appropriate "Cue".
3. If necessary, question the student for details of simulated actions/observations (i.e. "What are you looking at?" or "What are you observing?").

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

Start Time: _____

STEP	<u>1</u>	Performance Step:	Obtains copy of ES-1.2
GRADE	_____	Standards:	Obtains a copy of ES-1.2 and refers to step 10.
		Grade:	SAT _____ UNSAT _____
		Comment:	The heater control switches in the first JPM step may be operated in any order.
STEP	<u>2</u>	Performance Step:	Place All PZR Heater Switches To OFF position. (ES-1.2 step 10)
	<u>X</u>	Standards:	Rotates the "D" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.
GRADE	_____	Standards:	Rotates the "E" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.
GRADE	_____	Standards:	Rotates the "C" PZR Control Heaters control switch to "OFF." Observes the amber light goes OFF and the flag shifts to "green."
		Comments:	MB4A 6-4 annunciator "PZR HEATER CONTROL GROUP AUTO TRIP" will clear. The candidate should silence and clear this alarm. This action is not required to complete the critical nature of this step.
GRADE	_____	Standards:	Rotates the "A" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

GRADE X **Standards:** Rotates the "B" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.

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

Comments: When the last PZR B/U heaters control switch is taken to "OFF", MB4A 6-3 annunciator "PZR HEATER BACKUP GROUP AUTO TRIP" will clear. The examinee should acknowledge and clear this alarm. This action is not required to complete the critical nature of this step.

Comment: Prior to completing the depressurization, the examinee should check containment temperature and radiation levels to ensure that adverse CTMT conditions do not exist. Since CTMT conditions are not adverse, this action is not critical to the successful completion of the JPM.

STEP 3 **Performance Step:** Depressurize RCS to refill PZR.

(Step 11.a) Check normal PZR spray - AVAILABLE

GRADE **Standards:** Observes that no RCPs are running and therefore normal PZR spray is not available. Shifts to the Response Not Obtained column.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	<u>4</u>		Performance Step:	Perform the applicable action: (step 11.a RNO)
				<ul style="list-style-type: none"> • <u>IF</u> a PZR PORV is available, <u>THEN</u> Depressurize RCS using one PZR PORV and Proceed to step 11.d. • <u>IF</u> a PZR PORV is <u>NOT</u> available, <u>THEN</u> Proceed to step 11.c.
			Comments:	The candidate should determine that the "A" PORV is out of service.
GRADE			Standards:	Candidate takes the control switch for the "B" PORV to the OPEN position.
GRADE			Standards:	Candidate determines that the "B" PORV will not open and proceeds to step 11.c.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u>5</u>		Performance Step:	Use auxiliary spray: (step 11.c.1)
				Verify at least one SIH pump - RUNNING
GRADE			Standards:	Determines that both SI pumps are running by observation of red indicating lights on / green off, amps, flow etc.
			Grade:	SAT <u> </u> UNSAT <u> </u>

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	<u>9</u>	<u>X</u>	Performance Step: (Step 11.c.5)	OPEN charging header isolation valves <ul style="list-style-type: none"> • 3CHS*MV8106 • 3CHS*MV8105
GRADE	_____	<u>X</u>	Standards:	Depresses open pushbuttons for 3CHS*MV8106 and 3CHS*MV8105.
GRADE	_____	_____	Standards:	Checks position indicating lights and determines valves have opened by red indicating lights on, green off.
			Grade:	SAT _____ UNSAT _____
STEP	<u>10</u>	<u>X</u>	Performance Step: (Step 11.c.6)	Unlock and OPEN auxiliary spray valve (3RCS*AV8145)
GRADE	_____	<u>X</u>	Standards:	Obtains and inserts key into the 3RCS*AV8145 control switch and rotates clockwise to the open position.
GRADE	_____	_____	Standards:	Checks position indicating lights and determines valve has opened by red indicating light on, green off.
			Grade:	SAT _____ UNSAT _____
STEP	<u>11</u>	_____	Performance Step: (Step 11.c.7)	CLOSE both charging pump cold leg injection valves <ul style="list-style-type: none"> • 3SIH*MV8801A • 3SIH*MV8801B
GRADE	_____	<u>X</u>	Standards:	Depresses close pushbuttons for 3SIH*MV8801A and 3SIH*MV8801B.

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

GRADE **Standards:** Checks position indicating lights and determines valves have closed by green indicating lights on, red off.

GRADE **Standards:** Observes RCS pressure decreasing on Wide Range Loop pressure instruments: RCS-PI405, PI49, PI403 and PI50.

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

STEP 12 **Performance Step:** Verify PZR level - GREATER THAN 25% (50% ADVERSE CTMT)
(Step 11.d)

GRADE **Standards:** Monitors PZR level increase by observing instruments RCS-LI459A, 460A and 461. Initial observation will indicate level is less than 25%. Shifts to the RNO column.

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

STEP 13 **Performance Step:** Proceed to CAUTION prior to step 12. and, WHEN Level is GREATER THAN 25% (50% ADVERSE CTMT), THEN Perform step 11.e.

GRADE **Standards:** Candidate Proceeds to the caution prior to step 12.

GRADE **Standards:** The examinee should continue to monitor pressurizer level to determine when the depressurization should be stopped.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.7 Revision: 0 chg 1

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

Cue: The US is going to wait until the depressurization is complete before starting an RCP.

GRADE _____ **Standards:** Observes pressurizer level is greater than 25% (Annunciator MB4A:5-1 "PZR LVL LO HTR OFF and LT DOWN SECURE" clears.)

Evaluator NOTE: Once PZR level is greater than 25%, provide the following cue:

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.7

Revision: 0 chg 1

Date Performed: _____

Candidate: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 16

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

Candidate HANDOUT

JPM Number: S.7

Initial Conditions: Following a loss of coolant accident which resulted in a safety injection, the Control Room Team has worked through the EOPs and is currently carrying out the actions in ES-1.2, Post LOCA Cooldown and Depressurization. The "A" PORV is out of service due to an electrical short in the control circuitry.

Initiating Cue: The US has directed you to depressurize the RCS to refill the PZR using ES-1.2, steps 10 and 11.

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

2/20/07	Corrected an error in the standard associated with step 33; changed 'open' to 'close'. Added a cue to use 3RMS*RE41 and 42 to determine CTMT rad levels. Modified the standard for step 8 to show 3RMS*RE04A/05A lit as opposed to not lit (based on most recent validation). Added an additional standard in step 30 to allow for an applicant interpreting procedure step 9.b. RNO as starting one charging pump and one SI pump (procedure step reads poorly and is difficult to interpret). Modified the number of Quench Spray pumps to be stopped (performance step 10) from two to one based on validation and observed CTMT pressure (> 17.5 psia). Resulting in bypassing old performance steps 13 through 16, none of which are critical or have significant candidate action. DLM	Rev 0 chg 1

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

JPM ID Number: 2K7 NRC S.8 Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

System: 026

Time Critical Task: () YES (X) NO

Validated Time (minutes): X

Task Number(s): 000-05-130

Applicable To: SRO X RO X PEO _____

K/A Number:	EPE: E11 EA1.1	K/A Rating:	3.9 / 4.0
	026-A2.07		3.9 / 3.6
	<u>2.1.25</u>		<u>2.8 / 3.1</u>

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

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

Task Standards: All critical steps are performed satisfactorily. All sequential steps are performed in proper procedural sequence.

Required Materials: None.

General References: ECA-1.1, Loss of Emergency Coolant Recirculation, Rev 015-00

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC S.8

Revision: 0

Simulator Requirements:

- A. Reset to IC-18, MOL, 100% power.
- B. Insert Malfunction RC02C at 100%
- C. Allow Sim to run until "RWST LO LO LEVEL RHR PUMPS OFF" annunciator lights. RWST level should be around 520,000 gal.
- D. Complete Cold Leg Recirculation alignment per ES-1.3
- E. IO (CV) 3CHS*LCV112D "Green" to "OFF"
- F. IO (CV) 3CHS*LCV112E "Green" to "OFF"
- G. Turn on all power lockout switches on MB2R
- H. Ensure Containment Pressure less than 23 psia
- I. Insert malfunction CH08 at 80% severity
- J. When RSS pump cavitation is evident, reset SI, then LOP and CDA then stop all ECCS and RSS pumps.
- K. Acknowledge all annunciators and go to freeze
- L. Remove malfunction CH08.
- M. Place simulator in "RUN" after the operator receives instructions.

Approximate Simulator setup time is 30 minutes

Initial Conditions:

Following a large break loss of coolant accident (LBLOCA), the plant has established cold leg recirculation per ES-1.3, up to and including Step 4. Shortly thereafter, symptoms of significant CTMT sump clogging appeared. All ECCS and RSS pumps were stopped. The crew is transitioning to ECA-1.1, *Loss of Emergency Coolant Recirculation*.

Initiating Cues:

You are to complete the steps of ECA-1.1, starting with step 1.

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

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

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

Start Time:

STEP	<u> 1 </u>		Performance Step:	Obtains copy of ECA-1.1
GRADE			Standards:	Obtains a copy of ECA-1.1 and refers to the CAUTION and NOTE prior to step 1
			Grade:	SAT
STEP	<u> 2 </u>		Performance Step:	If the suction source is lost to any ECCS or containment spray pump, the pump must be stopped.
			Caution prior to step 1.	
GRADE			Standards:	Applicant reads CAUTION.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 3 </u>		Performance Step:	If emergency coolant recirculation capability is restored during this procedure, further recovery actions should continue by going to the procedure and step in effect.
			Note prior to step 1.	
GRADE			Standards:	Applicant reads NOTE.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 4 </u>		Performance Step:	Continue Attempts To Restore Emergency Coolant Recirculation Equipment
			Step 1 RNO	
GRADE			Standards:	Applicant reads the step and proceeds to step 2.
			CUE: (If required)	Respond as the US that continuing with ECA-1.1 will effectively continue attempts to Restore Emergency

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

Coolant Recirculation.

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

STEP 5 _____

Performance Step: If offsite power is lost after SI reset, Caution prior to step 2.
2.

If offsite power is lost after SI reset, manual actions to restart safeguards equipment may be required.

GRADE _____ _____

Standards: Applicant reads the CAUTION

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

STEP 6 _____

Performance Step: RESET ESF Actuation Signals If Required
2.

- SI
- CDA
- LOP

GRADE _____ _____

Standards: Applicant resets those signals requiring reset.

NOTE: SI, CDA and LOP have already been reset as part of simulator setup. The applicant may reset all signals regardless of status – this is not an error.

CUE: (If required) Respond as the US that SI, CDA and LOP have already been reset.

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

STEP 7 _____

Performance Step: Add Makeup To RWST
3.a.

Using GA-10, Fill the RWST as required while continuing with this procedure WHEN RWST level has increased to greater than 100,000 gal THEN Consult ADTS to determine what flow path should be established for injection

GRADE _____ _____

Standards: Applicant reads step and informs the

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

US that GA-10 must be carried out to fill the RWST.

CUE: Respond as the US that another RO will carry out the actions of GA-10.

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

STEP 8 _____

Performance Step: Check Quench Spray Pump Requirements
4.a.

a. Verify Ctmt high range radiation monitors (3RMS*RE04A and 3RMS*RE05A) - NOT IN ALERT OR ALARM

GRADE _____ _____

Standards: Determines that the CTMT high range radiation monitors are in alert or alarm by observation of 3RMS*RE04A and *RE05A amber and red trip lights are lit.

NOTE: Due to OPERABILITY concerns with respect to 3RMS*RE04A and *RE05A, the applicant should use diverse indications to determine the radiation reading inside CTMT.

CUE: Use 3RMS*RE41 and 42 to determine radiation levels in CTMT.

STEP 9 _____

Performance Step: Check Ctmt spray - INITIATED
4.b.

GRADE _____ _____

Standards: Determines that both Quench Spray pumps are running by observation of red indicating lights on / green off, amps, flow etc.

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

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

STEP	<u> 10 </u>		Performance Step:	Check Ctmt pressure - 4.c. LESS THAN 17.5 psia.
GRADE	<u> </u>	<u> </u>	Standards:	Determines by observation that CTMT pressure is greater than 17.5 psia. Proceeds to RNO column.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 11 </u>	<u> X </u>	Performance Step:	Realign quench spray system to establish only one quench spray pump running with the stopped pump's discharge valve closed and Proceed to step 6.
GRADE	<u> </u>	<u> X </u>	Standards:	Stops the "A" or "B" quench spray pump by rotating The corresponding control switch to the stop position.
GRADE	<u> </u>	<u> </u>	Standards:	Depresses the "CLOSE" pushbutton for the quench spray discharge valve corresponding to the stopped quench spray pump, either 3QSS*MOV34A or 3QSS*MOV34B. Verifies indicating lights shift to green ON, red OFF.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 12 </u>	<u> </u>	Performance Step:	Monitor Containment Recirculation Sump- 6. INDICATION OF BLOCKAGE <ul style="list-style-type: none"> • RSS pumps stopped due to indications of cavitation • Sump level indications NOT consistent with plant conditions
GRADE	<u> </u>	<u> </u>	Standards:	Determines that RSS pumps were stopped due to indications of cavitation.

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

NOTE: As given in the CUE, RSS pumps were stopped due to sump blockage indications.

CUE (if required): If the applicant questions whether RSS pumps were stopped due to indications of cavitation, respond as the US that they were.

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

STEP 13 _____ **Performance Step:** The charging and SI pumps should be stopped on alternate ECCS trains when possible.

NOTE prior to step 7.

GRADE _____ _____ **Standards:** Applicant reads NOTE.

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

STEP 14 _____ **Performance Step:** Establish One Train Of ECCS Flow

7.a.

a. Check ECCS pumps – TWO TRAINS RUNNING

GRADE _____ _____ **Standards:** Determines that all ECCS pumps are off by observation of green indicating lights on / red off. Proceeds to step 7.a. RNO.

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

STEP 15 _____ **Performance Step:** Go To step 8.

7.a.RNO

GRADE _____ _____ **Standards:** Proceeds to step 8.

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

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

STEP	<u> 16 </u>		Performance Step: Step 8 CAUTIONS	<p>Any pump receiving suction from an affected Containment Recirculation Pump should be stopped before stopping the Containment Recirculation Pump.</p> <p>If any Charging Pump or Safety Injection Pump loses suction or shows indications of cavitation, the pump must be stopped.</p>
GRADE			Standards:	Applicant reads CAUTIONS.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 17 </u>		Performance Step: Step 8 NOTES.	<p>CSF status trees should be monitored for information only. Every effort should be made to address the FRGs without compromising the containment sump.</p> <p>Indications of cavitation should be monitored following any change of recirculation flow.</p>
GRADE			Standards:	Applicant reads NOTES.
			Grade:	SAT <u> </u> UNSAT <u> </u>
STEP	<u> 18 </u>		Performance Step: 8.a.	<p>Establish Recirculation Spray Pump Recirculation Flow</p> <p>a. Verify Ctmt sump level - GREATER THAN 1.5 feet</p>
GRADE			Standards:	Determines by observation that CTMT sump level is greater than 1.5 feet.
			Grade:	SAT <u> </u> UNSAT <u> </u>

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

STEP 19 _____ **Performance Step:** 3RSS*P1A or 3RSS*P1B are the preferred pumps due to the automatic recirculation capability.

GRADE _____ _____ **Standards:** Applicant reads NOTE.

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

STEP 20 _____ **Performance Step:** Recirculation Spray Pump
8.b. -ONLY ONE PUMP
 RUNNING

GRADE _____ _____ **Standards:** Determines by observation that NO Recirculation Spray Pumps are running.

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

STEP 21 X **Performance Step:** Start or stop recirculation spray pumps to obtain one running.

GRADE _____ X **Standards:** Rotates the control switch for either the "A" or "B" RSS pump to the start position.

Standards: Observes for proper indications of a successful pump start; red indicating light, amps, flow, etc. Also observes for signs of sump blockage.

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

STEP 22 _____ **Performance Step:** Verify RSS pump has been in operation - AT LEAST TWO MINUTES

GRADE _____ _____ **Standards:** Applicant starts a timer to track length

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

of time the RSS pump has been running.

CUE: The RSS pump has been running for two minutes.

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

STEP 23 _____

Performance Step: Establish ECCS Flow from Sump.
9.a.

Check charging and SI pump-
SUCTION ALIGNED TO RUNNING
RSS PUMP

GRADE _____ _____

Standards: Determines by observation that a flowpath exists from the discharge of the running RSS pump to the suction of the charging and SI pumps.

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

STEP 24 _____

Performance Step: Check Charging OR SI pump - ONLY ONE RUNNING
9.b.

GRADE _____ _____

Standards: Determines by observation that NO Charging OR SI pumps are running.

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

STEP 25 X

Performance Step: START or STOP charging and SI pumps to establish only one running.
9.b.RNO

GRADE _____ X

Standards: Rotates the control switch to the start position for one of the following:

- "A" Charging Pump
- "B" Charging Pump
- "A" SI Pump
- "B" SI Pump

OR

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

GRADE X **Standards:** Rotates the control switch to the start position for one Charging Pump and one SI pump.

Standards: Observes for proper indications of a successful pump(s) start; red indicating light, amps, flow, etc. Also observes for signs of sump blockage.

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

STEP 26 X **Performance Step:** Using Attachment A, Check minimum ECCS flow to remove decay heat-
9.c. **MINIMUM FLOW INDICATED**

GRADE X **Standards:** References Attachment A to ECA-1.1 and determines minimum ECCS flow to remove decay heat, based on the time from inception of the LOCA. Determines actual ECCS flow by observation of the pump flow meter and determines actual flow is sufficient to remove decay heat.

CUE: It has been 70 minutes from the start of the LOCA.

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

STEP 27 **Performance Step:** Check Charging OR SI pump(s) -
9.d. **RUNNING IN RECIRCULATION ALIGNMENT**

GRADE **Standards:** Determines by observation that a flowpath exists from the discharge of the running RSS pump to the suction of the running charging or SI pump, and that ECCS flow exists.

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

PERFORMANCE INFORMATION

JPM Number: S.8

Revision: 0 chg 1

Task Title: Respond To Containment Sump Blockage

STEP 28 X **Performance Step:** CLOSE recirculation spray header isolation valve for running pump-
9.e.
 • 3RSS*MOV20A
 • 3RSS*MOV20B
 • 3RSS*MOV20C
 • 3RSS*MOV20D

GRADE _____ X **Standards:** Depresses close pushbutton for the recirculation spray header isolation valve for running pump. Determines that the valve has closed by observation of green ind. light on, red off.

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

STEP 29 _____ **Performance Step:** Go to step 12.
9.f.

GRADE _____ _____ **Standards:** Applicant moves ahead to step 12.

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

CUE: Inform the Examinee that another RO will complete ECA-1.1. Inform the Examinee the evaluation for this JPM is concluded.

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

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.8

Revision: 0 chg 1

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 15

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: S.8

Initial Conditions: Following a large break loss of coolant accident (LBLOCA), the plant has established cold leg recirculation per ES-1.3, up to and including Step 4. Shortly thereafter, symptoms of significant CTMT sump clogging appeared. All ECCS and RSS pumps were stopped. The crew is transitioning to ECA-1.1, *Loss of Emergency Coolant Recirculation*.

Initiating Cues: **The US has directed you to perform ECA-1.1, starting with step 1.**

Job Performance Measure Approval Sheet

I. JPM Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

JPM ID Number: 2K7 NRC P.1

Rev: 0 chg 1

II. Initiated:

P. Malzahn
Developer

6/19/06
Date

III. Reviewed:

Dave Minnich
Technical Reviewer

06/19/06
Date

IV. Approved:

N/A
Cognizant Plant Supervisor (optional)

Date

Tim Kulterman
Nuclear Training Supervisor

06/20/06
Date

Job Performance Measure Approval Sheet

SUMMARY OF CHANGES

Change	Description	Date
Chg 1	Added evaluator notes and cues (show picture) to performance step 2 to provide applicant positive indication of the state of the reactor trip and bypass breakers.	2/20/07

Job Performance Measure Guide

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC P.1 Revision: 0 chg 1

Task Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

System: 062

Time Critical Task: () YES (X) NO

Validated Time (minutes): 20

Task Number(s): 000-05-171

Applicable To: SRO X RO X PEO X

K/A Number:	<u>062-A4.04</u>	K/A Rating:	<u>2.6 / 2.7</u>
	<u>APE-068-AA1.14</u>		<u>4.2 / 4.4</u>
	<u>APE-068-AA1.10</u>		<u>3.7 / 3.9</u>

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

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

Task Standards: Satisfactorily complete primary side PEO actions on a control room evacuation IAW 3509.1 Att. A, steps 6 - 11

Required Materials: None

General References: EOP 3509.1, Attachment A, rev. 011-02

READ TO THE STUDENT

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

Job Performance Measure Guide

JPM Number: P.1

Revision: 0 chg 1

Initial Conditions: A fire event has occurred requiring shut down outside the control room. The control room team is carrying out actions of EOP 3509.1, *Control Room, Cable Spreading Area, or Instrument Rack Room Fire*.

Initiating Cues: The US directs you to perform primary side PEO actions on a control room evacuation IAW EOP 3509.1, Attachment A, steps 6 through 11 only, after referring to the "Appendix "R" Lighting Illuminated Path" maps at the end of the attachment. Another operator is performing steps 1 through 5. You have the locked valve key.

**** NOTES TO EVALUATOR ****

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

Performance Information

JPM Number: P.1

Revision: 0 chg 1

Task Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

Start Time:

Comments:

Direction to refer to maps is step 1 of Attachment A and was included as part of initiating cue. Examinee may elect to review all steps prior to step 6

STEP 1

Performance Step: Refer to "Appendix R" Lighting Illuminated Path" maps at end of attachment prior to performing local actions.
(Step 1)

GRADE

Standards: Locates maps at end of attachment and reviews.

Cue: When examinee reviews maps provide the following cue, "Adequate emergency lighting is in operation to allow the use of normal access/egress paths".

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

STEP 2 X

Performance Step: **Verify Reactor Tripped**
(Step 6)

- a. Check Reactor Trip and Bypass Breakers - OPEN

GRADE X

Standards: Locates reactor trip breakers, 3RPS*SWGR-1 & -2] [West MCC*SWGR, Aux Bldg 46']

GRADE X

Standards: Locates OPEN / CLOSED position indicating flags for each breaker and determines TRIP breakers indicate CLOSED. Proceeds to RNO column.

Performance Information

JPM Number: P.1

Revision: 0 chg 1

Task Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

Evaluator NOTE: Show the picture of the inside of the reactor trip and bypass breaker cabinets so the candidate can determine that the reactor trip breaker flags indicate CLOSED and the bypass breakers indicate OPEN.

Cue (if required): You see the reactor trip breaker CLOSED flags and the bypass breaker OPEN flags.

(Step 6.a. RNO) TRIP the reactor trip and bypass breakers.

GRADE X

Standards: Locates red TRIP push button (PB) and simulates pushing TRIP PB. [RNO direction]

GRADE

Standards: Locates breaker flag indication; both trip breakers are OPEN

Evaluator NOTE: Show the picture of the inside of the reactor trip breaker cabinet so the candidate can determine that the Breaker TRIP/OPEN flag is visible.

Cue (if required): You see the reactor trip breaker TRIP/OPEN flag.

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

Comments: RNO must be performed

STEP 3 X

Performance Step: **Block Open Auxiliary Building North Doors to Outside on EI. 24'-6"**

Door A-24-1
Door A-24-2

Performance Information

JPM Number: P.1

Revision: 0 chg 1

Task Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

GRADE X **Standards:** Locates North doors A-24-2 [inner] & A-24-1 [outer] and simulates propping BOTH doors open - applicant explains method and component(s) used to achieve blocking OPEN

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

Cue: Provide the following cue for each door as simulation performed:

Door is blocked OPEN

STEP 4 X **Performance Step:** **De-energize TD AFW Pump Steam Supply Isolation Valves**
(Step 8)

- For 3MSS*MOV17A, Place breaker 32-4U-R5H to OFF
- For 3MSS*MOV17B, Place breaker 32-4T-R6E to OFF
- For 3MSS*MOV17D, Place breaker 32-4T-R6H to OFF

GRADE X **Standards:** Locates breaker R5H on MCC 4U (ESF Bldg 36') and simulates placing the breaker in the OFF position [3MSS*MOV17A]

GRADE X **Standards:** Locates breaker R6E on MCC 4T (ESF Bldg 36') and simulates placing the breaker the OFF position [3MSS*MOV17B]

GRADE X **Standards:** Locates breaker R6H on MCC 4T (ESF Bldg 36') and simulates placing the breaker in the OFF position [3MSS*MOV17D]

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

Cue: As each breaker is located, provide the following cue:

Breaker as-found is ON/CLOSED

Performance Information

JPM Number: P.1

Revision: 0 chg 1

Task Title: Primary Side PEO Actions on a Control Room Evacuation (Part 2)

some resistance is met and the valve comes to a hard stop.
--

Grade: SAT _____ UNSAT _____

STEP 9 _____

Performance Step: Perform the Following:
(Step 11)

- a. Establish communication with the ASP operator
- b. Report Attachment A complete
- c. Provide support as required

GRADE _____ _____

Standards: Locates phone or walkie-talkie and simulates establishing communication with ASP operator

GRADE _____ _____

Standards: Simulates communicating Attachment A steps 6 through 11 are complete

Grade: SAT _____ UNSAT _____

Terminating Cue: The evaluation for this JPM is concluded

Stop Time: _____

Verification of JPM Completion

JPM Number: P.1

Revision: 0 chg 1

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 20

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

Student Hand Out

JPM Number: P.1

Initial Conditions: A fire event has occurred requiring shut down outside the control room. The control room team is carrying out actions of EOP 3509.1, *Control Room, Cable Spreading Area, or Instrument Rack Room Fire*.

Initiating Cues: The US directs you to perform primary side PEO actions on a control room evacuation IAW EOP 3509.1, Attachment A, steps 6 through 11 only, after referring to the "Appendix "R" Lighting Illuminated Path" maps at the end of the attachment. Another operator is performing steps 1 through 5. You have the locked valve key.

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

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

JPM ID Number: 2K7 NRC P.2

Revision: 0/Ch2
ch 1 R. McDonald

II. Initiated:

J. William Cote
Developer

2/10/00
Date

III. Reviewed:

Rich Carr
Technical Reviewer

12/18/01
Date

IV. Approved:

W. Hoffner
Cognizant Plant Supervisor (optional)

12/20/01
Date

Tim Kulterman
Nuclear Training Supervisor

12/19/01
Date

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

SUMMARY OF CHANGES

Change Description	Date of Change
1. Revised task description and updated to new procedure revision. rjm	9/3/04
0 chg 2: Assigned a number to the candidate cues to allow for easier administration of the JPM if cue cards are used (high noise field). DLM	2/21/07

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

System: 0

Time Critical Task: () YES (X) NO

Validated Time (minutes): 12

Task Number(s): 344-05-017

Applicable To: SRO X RO X PEO X

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

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

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

Task Standards: Satisfactorily perform the local actions on a loss of instrument air as specified in AOP 3562, *Loss of Instrument Air*, Attachment A and OP 3332A, *Instrument Air System*..

Required Materials: None

General References: AOP 3562 (Rev 005), Loss of Instrument Air, & OP3332A Rev (015)

READ TO THE STUDENT

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: P.2

Revision 0 chg 2
: _____

Simulator Requirements: None: In-plant JPM

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

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

**** NOTES TO EVALUATOR ****

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

Start Time: _____

STEP 1 _____

Performance Step: Place both instrument air compressor control switches to CS (continuous service).
Att. A Step 1.a

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

GRADE _____

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

Cue 1:	The control switch is already in the CS position.
---------------	---

GRADE _____

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

Cue 1:	The control switch is already in the CS position.
---------------	---

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

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP 2 _____ **Performance Step:** Place the service air compressor control switch to CS (continuous service).
 Att. A Step 1.b

GRADE _____ _____ **Standards:** Locates the control switch for 3SAS-C1 (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position.

Cue 1: The control switch is already in the CS position.

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

STEP 3 X **Performance Step:** CLOSE service air header supply valve (3SAS-AOV33).
 Att. A Step 1.c

GRADE _____ _____ **Standards:** Locates valve 3SAS-AOV33 control switch (on IAS Panel) and checks valve position indicating lights.

Cue 2: The green light is dark and the red light is illuminated.

GRADE _____ X **Standards:** Closes valve by positioning switch to the "CLOSE" position.

Cue 3: The green light illuminates and the red light goes dark.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

	<u> </u>	<u> </u>		
	<u> </u>	<u> </u>		
STEP	<u> 4 </u>	<u> X </u>	Performance Step:	OPEN service air to instrument air cross-connect valve (3IAS-AOV14). Att. A Step 1.d

GRADE	<u> </u>	<u> </u>	Standards:	Locates valve 3IAS-AOV14 control switch (on IAS Panel) and checks valve position indicating lights.
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Cue 4: The green light is illuminated and the red light is dark.

GRADE	<u> </u>	<u> X </u>	Standards:	Opens valve by positioning switch to the "OPEN" position.
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Cue 5: The green light goes dark and the red light illuminates.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP 5 _____ **Performance Step:** Verify the following Instrument Air
 Att. A Step 2 Dryer Annunciators - NOT LIT

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

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

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

Cue 6: Alarm windows 3-2, 3-3 and 3-4 are not lit.

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

Cue 7: The lamp test is satisfactory, all lamps illuminated as expected.

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

Cue 8: Alarm widow "ALARM BLOWER FAILURE" is not lit.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP 6 X **Performance Step:** Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid.
Att. A Step 3

GRADE _____ _____ **Standards:** Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading.

Cue 9: The gauge indicates pegged high.

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

STEP 7 X **Performance Step:** Using OP3332A, Instrument Air System, Alternate in-service instrument air filters.
Att. A Step 3 RNO

GRADE _____ _____ **Standards:** Implements the RNO and obtains OP3332A, Instrument Air System, in order to swap filters.

Cue: Provide examinee with a copy of OP 3332A

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

STEP 8 _____ **Performance Step:** Applicant finds correct section relating to filter swap.

GRADE _____ _____ **Standards:** Applicant opens 3332A to section 4.6, Alternating In-Service Instrument Air Filters.

Cue 10: Inform the examinee that filter 2A is in service and to PLACE filter 2B in service

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	<u>9</u>	<u>X</u>	Performance Step:	Throttle open 3IAS-V18, filter 2B inlet isolation. OP 3332 4.6.2.a
GRADE	_____	_____	Standards:	Locates 3IAS-V18 and slowly throttles open on 3IAS-V18 until air equalizes.
			Cue 11:	Slight air noise is heard and slowly fades away
			Grade:	SAT _____ UNSAT _____
STEP	<u>10</u>	<u>X</u>	Performance Step:	<u>WHEN</u> filter pressure equalizes with the instrument air header pressure, fully <u>OPEN</u> 3IAS-V18, filter 2B inlet isolation. OP 3332 4.6.2.b
GRADE	_____	_____	Standards:	Rotates 3IAS-V18 in the counterclockwise direction until fully open.
			Cue 12:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.
GRADE	_____	_____	Standards:	Rotates the handwheel in the clockwise direction 1/4 of 1 turn
			Cue 13:	Handwheel has been rotated 1/4 turn in the clockwise direction.
			Grade:	SAT _____ UNSAT _____
STEP	<u>11</u>	<u>X</u>	Performance Step:	Open 3IAS-V19, filter 2B outlet isolation. OP 3332 4.6.2.c

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

GRADE **Standards:** Locates and rotates 3IAS-V19 in the counterclockwise direction until fully open.

Cue 12: Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.

GRADE **Standards:** Rotates the handwheel in the clockwise direction 1/4 of 1 turn.

Cue 13: Handwheel has been rotated 1/4 turn in the clockwise direction.

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

STEP 12 X **Performance Step:** Close 3IAS-V21, filter 2A outlet isolation.
OP 3332 4.6.2.d

GRADE **Standards:** Locates and rotates 3IAS-V21 in the clockwise direction until fully closed.

Cue 12: Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	<u>13</u>	<u>X</u>	Performance Step:	Close 3IAS-V20, filter 2A inlet isolation. OP 3332 4.6.2.e												
GRADE	_____	_____	Standards:	Locates and rotates 3IAS-V-20 in the clockwise direction until fully closed.												
			Cue 12:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.												
			Grade:	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">SAT</td> <td style="width: 10%; text-align: center;">_____</td> <td style="width: 40%;">UNSAT</td> <td style="width: 10%; text-align: center;">_____</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td></td> <td style="text-align: center;">_____</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td></td> <td style="text-align: center;">_____</td> </tr> </table>	SAT	_____	UNSAT	_____		_____		_____		_____		_____
SAT	_____	UNSAT	_____													
	_____		_____													
	_____		_____													
STEP	<u>14</u>	_____	Performance Step:	Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid. Att. A Step 3												
GRADE	_____	_____	Standards:	Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading.												
			Cue 14:	Filter DP reads 0.25 psid												
			Grade:	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">SAT</td> <td style="width: 10%; text-align: center;">_____</td> <td style="width: 40%;">UNSAT</td> <td style="width: 10%; text-align: center;">_____</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td></td> <td style="text-align: center;">_____</td> </tr> <tr> <td></td> <td style="text-align: center;">_____</td> <td></td> <td style="text-align: center;">_____</td> </tr> </table>	SAT	_____	UNSAT	_____		_____		_____		_____		_____
SAT	_____	UNSAT	_____													
	_____		_____													
	_____		_____													
STEP	<u>15</u>	_____	Performance Step:	Notify the Control Room that Attachment A of AOP 3562 is complete.												

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC P.2 Revision: 0 chg 2

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

GRADE _____

Standards:

Examinee reports to the US that instrument and service air compressor are running and supplying the instrument air header and that the filter and dryer checks are complete as specified in AOP 3562, Attachment A. The 2A filter had a high DP and filter 2B was placed in service.

Grade:

SAT _____

UNSAT _____

Terminating Cue 15:

The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC P.2

Revision: 0 chg 2

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): _____

Actual Time to Complete (minutes): 12

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: P.2

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

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

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC P.3 Revision: 0

Task Title: Cross-Connect Service Water to East Switchgear Ventilation

System: 076

Time Critical Task: () YES (X) NO

Validated Time (minutes): 12

Task Number(s): 000-05-171

Applicable To: SRO X RO X PEO X

K/A Number: 076 K1.19 K/A Rating: 3.6 / 3.7
APE; 068 A1.21 3.9 / 4.1

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

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

Task Standards: All critical steps are performed satisfactorily. All sequential steps are performed in proper procedural sequence.

Required Materials: PA 8235 Keys and a Locked Valve Key

General References: EOP 3509.1, Rev. 11-02

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

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

JOB PERFORMANCE MEASURE GUIDE (Continued)

JPM Number: 2K7 NRC P.3

Revision: 0

Initial Conditions: A fire occurred in the MP3 Control Room requiring evacuation. The crew is controlling the plant from the Auxiliary Shutdown Panel in accordance with EOP 3509.1.

Initiating Cues: The US has directed you to perform local actions to align ventilation for the East Switchgear Room by performing Steps 42.a and b of EOP 3509.1. You have two PA 8235 keys and a locked valve key.

**** NOTES TO EVALUATOR ****

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

PERFORMANCE INFORMATION

JPM Number: P.3

Revision: 0

Task Title: Cross-Connect Service Water to East Switchgear Ventilation

Start Time:

Comment:

If examinee asks for current ACU indicating light status, provide the following; cubicle 3J, green light lit, cubicle 3M, red light lit. Steps 1 and 2 of this JPM are bulleted procedure steps and can be performed in either order.

STEP 1 X

Performance Step: (EOP 3509.1, Step 42.a)

At MCC 32-2T, using PA 8235 keys, START east switchgear ACUs

- East Switchgear air conditioning unit (3HVC*ACU3A) at cubicle 3J
- East Switchgear air conditioning unit (3HVC*ACU4A) at cubicle 3M

GRADE X

Standards:

Locates 32-2T (3J) in E. Switchgear Room 4'-6" elev and simulates inserting PA 8235 key into key lock and turning clockwise to START, verifies green indicating light OFF, red light ON.

Cue:

Breaker is closed and 3HVC*ACU3A is running.

GRADE

Standards:

Locates 32-2T (3M) in E. Switchgear Room 4'-6" elev, and simulates inserting PA 8235 key into key lock and turning clockwise to START, verifies green indicating light OFF, red light ON.

Cue:

Breaker is closed and 3HVC*ACU4A is running. (Initial condition is that this ACU is running, as key switch is turned from Remote position thru Stop position, ACU will stop (green light ON, red light OFF) and restart when keyswitch is placed in Start.)

PERFORMANCE INFORMATION

JPM Number: P.3

Revision: 0

Task Title: Cross-Connect Service Water to East Switchgear Ventilation

backseat. Positioning valve off of the backseat is not a critical task.

Cue:

For each valve, as examinee simulates rotating valve handwheel in the counterclockwise direction, provide cue that increased resistance is felt and handwheel comes to a hard stop, valve is OPEN. For the two valves with position indication, provide cue that pointers are aligned vertically.

Grade:

SAT _____

UNSAT _____

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: P.3

Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 12

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: P.3

Initial Conditions: **A fire occurred in the MP3 Control Room requiring evacuation. The crew is controlling the plant from the Auxiliary Shutdown Panel in accordance with EOP 3509.1.**

Initiating Cues: **The US has directed you to perform local actions to align ventilation for the East Switchgear Room by performing Steps 42.a and b of EOP 3509.1. You have two PA 8235 keys and a locked valve key.**