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

II. Initiated:

D. Minnich
Developer

12/8/06
Date

III. Reviewed:

Martin
Technical Reviewer

1/24/7
Date

IV. Approved:

NA
Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

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

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

System: 004

Time Critical Task: ( ) YES (X) NO

Validated Time (minutes): 10

Task Number(s): 344-05-036

Applicable To: SRO X RO X PEO _____

K/A Number: APE: 022 AA2.02
004-A4.08

K/A Rating: 3.2 / 3.7
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.

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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

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

Start Time: _____

STEP	1	____	**Performance Step:**	Obtains copy of EOP 3506
GRADE	____	____	**Standards:**	Obtains a copy of EOP 3506 and refers to step 1
			Grade:	**SAT** _____ **UNSAT** _____
STEP	2	____	**Performance Step:** Note prior to step 1	The Foldout page must be open.
GRADE	____	____	**Standards:**	Opens foldout page and reviews
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3	____	**Performance Step:** EOP 3506, step 1.	**Verify Charging Pumps – NONE RUNNING**
GRADE	____	____	**Standards:**	Determines that no charging pumps are running by observation of indicating lights, amps, flow etc.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	4	____	**Performance Step:** 2.	Check Reactor- NOT TRIPPED
GRADE	____	____	**Standards:**	At Main Board 4 determines that the reactor trip breakers are closed observation of red indicating lights on, DRPI indication, etc.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	5	____	**Performance Step:** 3.	Check 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** _____

STEP	6	____	**Performance Step:** 4.a.	Isolate Letdown 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:** 4.a. RNO	CLOSE Ctmt letdown isolation valves: • 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:** 4.b.	Verify excess letdown and reactor head vent isolation valves - CLOSED
GRADE	____	____	**Standards:**	Checks red indicating lights off / green on for head vent and excess letdown isolations

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

PERFORMANCE INFORMATION

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

STEP	9	____	**Performance Step:** 5.a.	**Check For Loss Of Charging Pump Suction** Check previously running charging pump – ANY OF THE FOLLOWING FLUCTUATING PRIOR TO PUMP TRIP • Charging flow OR • RCP seal supply flows OR • Charging pump discharge pressure OR • 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** _____ **UNSAT** _____
STEP	10	____	**Performance Step:** 5.a. RNO	Proceed to step 5.c.
GRADE	____	____	**Standards:**	Proceeds to step 5.c.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	11	____	**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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Task Title: Respond To A Loss Of All Charging Pumps (Overcurrent)

STEP 12 ____ **Performance Step:** Proceed to step 5.f.
5.c. RNO

GRADE ____ ____ **Standards:** Proceeds to step 5.f.

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

STEP 13 ____ **Performance Step:** Verify charging pump suction
5.f.

- Check VCT to charging isolation valves (3CHS*LCV112B and 3CHS*LCV112C) – OPEN

OR

- Check at least one RWST to charging isolation valve (3CHS*LCV112D or 3CHS*LCV112E) - OPEN

GRADE ____ ____ **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** _____ **UNSAT** _____

STEP 14 ____ **Performance Step:** Check RCPs For A Loss Of All Seal Cooling
6. a. Check any RCP

- Thermal barrier cooling (CCP) – LOST

OR

- Seal injection flow - LESS THAN 6 gpm

PERFORMANCE INFORMATION

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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:** 6.b.	Check affected RCP(s) - 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	X	**Performance Step:** 6.c.	Check affected RCPs #1 seal inlet temperatures – ANY GREATER THAN OR EQUAL TO 230 °F) (PPC, NSSS screen 15)
GRADE	____	X	**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:** 6.c. RNO	Proceed to step 7.
GRADE	____	____	**Standards:**	Proceeds to step 7.

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

			Grade:	**SAT** _____ **UNSAT** _____
STEP	18	____	**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	19	____	**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	20	X	**Performance Step:** 7.c.	START one charging pump
GRADE	____	X	**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** _____

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

STEP	21	____	**Performance Step:** 7.d.	Check procedure entered from - ES-0.1, REACTOR TRIP RESPONSE
GRADE	____	____	**Standards:**	Initial conditions were given at 100% power, therefore the applicant should procede to step 7.d. RNO.
			CUE (if required):	If the applicant questions if the crew had transitioned from ES-0.1, reiterate that initial conditions were 100% power.
			Grade:	**SAT** ____ **UNSAT** ____
STEP	22	____	**Performance Step:** 7.c. RNO.	Proceed to step 8.
GRADE	____	____	**Standards:**	Proceeds to step 8.
			Grade:	**SAT** ____ **UNSAT** ____
STEP	23	____	**Performance Step:** 8.a.	Check Charging System Alignment Verify charging line flow control valve - OPEN
GRADE	____	____	**Standards:**	Observes that 3CHS*FK121 has output and flow indicated or observes charging flow indicated on the PPC CVCS trend display.
			Grade:	**SAT** ____ **UNSAT** ____
STEP	24	____	**Performance Step:** 8.b.	Verify charging header loop isolation valves (3CHS*AV8146 or 3CHS*AV8147) - ONE OPEN
GRADE	____	____	**Standards:**	Observes that only one charging header loop isolation valve is open by observing a red indicating light for 3CHS*AV8146 and a green indicating light for 3CHS*AV8147.

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

			Grade:	**SAT** _____ **UNSAT** _____
STEP	25	____	**Performance Step:** 8.c.	Verify charging header isolation valves (3CHS*MV8106 and 3CHS*MV8105) - OPEN
GRADE	____	____	**Standards:**	Observes that both charging header isolation valves are open by observing red indicating lights lit and green lights out for 3CHS*MV8106 and 3CHS*MV8105.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	26	____	**Performance Step:** 8.d.	Verify charging pump recirculation isolation valves - OPEN 3CHS*MV8111A 3CHS*MV8111B 3CHS*MV8111C 3CHS*MV8110
GRADE	____	____	**Standards:**	Observes that all charging pump recirculation isolation valves are open by observing red indicating lights lit and green lights out for 3CHS*MV8111A, B, C and 3CHS*MV8110.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	27	____	**Performance Step:** 8.e.	Verify charging pump miniflow isolation valves to RWST (3CHS*MV8511A and 3CHS*MV8511B) - CLOSED
GRADE	____	____	**Standards:**	Observes that both charging pump miniflow isolation valves to RWST are closed by observing green indicating lights lit and red lights out for

				3CHS*MV8511A and 3CHS*MV8511B.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	28	____	**Performance Step:** 8.f.	Verify RCP seal supply valve (3CHS*HCV182) - OPEN
GRADE	____	____	**Standards:**	Observes that the seal supply valve 3CHS*HCV182 is open by observing meter needle on CHS-HC182 indicating open (100%).
			Grade:	**SAT** _____ **UNSAT** _____
STEP	29	____	**Performance Step:** 8.g.	Verify seal injection flow to RCPs with unisolated seals - BETWEEN 8 and 13 gpm
GRADE	____	____	**Standards:**	Determines seal injection flow to All RCPs is between 8 and 13 gpm by observing flowrates on seal injection flowrate indicators CHS-FI145A, 144A, 143A, and 142A.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	30	____	**Performance Step:** 9.a.	Verify Charging Flow Check charging flow • Check PZR level - STABLE OR INCREASING • Check charging flow control valve - CAPABLE OF BEING THROTTLED
GRADE	____	____	**Standards:**	Determines PZR level is stable or increasing by observing PZR level

recorder trace or PPC CVCS trend display. Takes manual control of the charging line flow control valve and verifies throttling capability.

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

STEP 30 ____ **Performance Step:** 9.b. Proceed to step 11.

GRADE ____ ____ **Standards:** Proceeds to step 11.

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

STEP 31 ____ **Performance Step:** 11.a. Align RCS Letdown

Check normal letdown- ISOLATED

GRADE ____ ____ **Standards:** Observes that letdown is isolated by observing green indicating lights lit and red lights out for CHS*CV8152 and CV8160.

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

STEP 32 ____ **Performance Step:** 11.b. Verify PZR level - GREATER THAN 22%

GRADE ____ ____ **Standards:** Determines PZR level is greater than 22% by observing PZR level recorder trace or PZR level meters on MB4.

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

STEP 33 ____ **Performance Step:** 11.c. Verify normal charging path - ESTABLISHED

GRADE ____ ____ **Standards:** Determines a normal charging flowpath established by observing charging flow and valve lineup

PERFORMANCE INFORMATION

JPM Number: S.1 Revision: 0

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

		Grade:	**SAT** _____	**UNSAT** _____
STEP	34 ____	**Performance Step:** 11.d.	Using GA-13, Establish normal letdown	
GRADE	____ ____	**Standards:**	Informs the US that normal letdown needs to be established using GA-13.	
		CUE:	Inform the Examinee that another RO will establish letdown and complete EOP 3506. Inform the Examinee the evaluation for this JPM is concluded.	
		Grade:	**SAT** _____	**UNSAT** _____

Stop Time: _____

VERIFICATION OF JPM COMPLETION

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

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 10

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: 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

II. Initiated:

Steve Jackson
Developer

6/12/02
Date

III. Reviewed:

C Martin
Technical Reviewer

1/24/7
Date

IV. Approved:

T Letterman for
Nuclear Training Manager

1/24/07
Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: **2K7 NRC S.2** Revision: 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.

JPM Number: **S.2** Revision: 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

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

Start Time: _____

STEP	1		**Performance Step:** (ECA-0.0 Step 5.a)	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** _____ **UNSAT** _____
STEP	2		**Performance Step:** (Step 5.b) **Alternate Path**	Verify EDG output breaker - CLOSED
GRADE			**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** _____ **UNSAT** _____
STEP	3	X	**Performance Step:** (Step 5.b RNO)	CLOSE breaker (MB8)
GRADE		X	**Standards:**	Candidate attempts to close the A EDG output breaker. When it will not close transitions to step 5.c
			Grade:	**SAT** _____ **UNSAT** _____
STEP	4		**Performance Step:** (Step 5.c)	Verify at least one AC emergency bus - ENERGIZED
GRADE			**Standards:**	Observes that Bus 34C and 34D are both still de-energized.

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

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

STEP	5	____	**Performance Step:** (Step 5.c RNO)	Proceed to step 5.e
GRADE	____	____	**Standards:**	Candidate Proceeds to step 5.e.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	6	____	**Performance Step:** (Step 5.e)	Check offsite power - AVAILABLE
GRADE	____	____	**Standards:**	At MB8 observes any of the following: • 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	7	____	**Performance Step:** (step 5.f)	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

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

STEP	8		**Performance Step:** (step 1 of GA-3)	Check Energizing Bus 34C - DESIRED
GRADE			**Standards:**	Candidate Proceeds to step 2 based on previous cue.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	9	X	**Performance Step:** (step 2.a)	Energize Bus 34C. 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

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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:** (step 2.b)	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:** (Step 2.c)	Press "BYPASS" for 34C undervoltage block pushbutton. (MB8R)
GRADE	____	X	**Standards:**	Locates pushbutton on MB8R, pushes button and observes white light go off.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	12	____	**Performance Step:** (Step 2.d)	Check undervoltage block white light - NOT LIT.
GRADE	____	____	**Standards:**	Observes white light NOT LIT on pushbutton on MB8R
			Grade:	**SAT** _____ **UNSAT** _____
STEP	13	____	**Performance Step:** (Step 2.e)	Check energizing Bus 34C from Bus 34A - DESIRED
GRADE	____	____	**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.

PERFORMANCE INFORMATION

JPM Number: **S.2** Revision: 1

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

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

STEP	14	X	**Performance Step:** (Step 2.e.1 RNO)	Energize Bus 34C from RSSA: Place RSSA sync selector switch in ON.
GRADE	____	X	**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** _____ **UNSAT** _____
STEP	15	X	**Performance Step:** (Step 2.e.2 RNO)	CLOSE RSSA supply breaker (RSSA*34C-2).
GRADE	____	X	**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** _____ **UNSAT** _____
STEP	16	____	**Performance Step:** (Step 2.e.3 RNO)	Place RSSA sync selector switch in OFF.
GRADE	____	____	**Standards:**	Rotates sync selector handle in synchronizing selector for RSSA to bus 34C to the OFF position. Observes INCOMING and RUNNING voltage meters go to zero.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

JPM Number: **S.2** Revision: 1

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

STEP 17 ____ **Performance Step:** Proceed to step 2.g.
(Step 2.e.4 RNO)

Comments: When candidate reads step 2.e.4 RNO go to terminating cue and end the JPM.

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: **S.2** Revision: 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 1

II. Initiated:

Barry Pinkowitz — 13 Sept 2004
Developer — Date

III. Reviewed:

Paul Malzahn — 03/13/04
Technical Reviewer — Date

IV. Approved:

NA — _____
Cognizant Plant Supervisor (optional) — Date

Trad Horner — 09/14/04
Nuclear Training Supervisor — 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

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

JPM ID Number: 2K7 NRC S.3 Revision: 0 chg 1

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

Simulator Requirements:

A. Reset to IC 18 or any other 100% Power IC.

C. Place simulator in "RUN"

D. Ensure plant is stable and computer point alarms enabled.

F. Acknowledge annunciators, then place simulator in "FREEZE"

G. 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 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.3 Revision: 0 chg 1

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	1	____	**Performance Step:** MB5C 5-7 step 1	CHECK the following steam generator pressures for proper operation of main steam pressure relief valve (MB5): • 3MSS-PIC20A • 3MSS-PIC20B • 3MSS-PIC20C • 3MSS-PIC20D
GRADE	____	____	**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.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	2	____	**Performance Step:** MB5C 5-7 step 2	IF pressure controller has failed, PLACE controller in "MAN" and CLOSE the valve.
GRADE	____	____	**Standards:**	Applicant depresses the manual pushbutton on 3MSS-PIC20D and lowers controller output in an attempt to manually close 3MSS-PV20D.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

JPM Number: S.3 Revision: 0 chg 1

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

STEP	3	X	**Performance Step:** MB5C 5-7 step 3	IF relief valve does not close, CLOSE the following isolation valves (MB5): • 3MSS*MOV18D, "ATMOSPHERIC RELIEF ISOL" "SG 4"
GRADE			**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		X	**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			**Standards:**	Checks position indicating lights and determines valve has closed by green indicating light on, red off.
			Grade:	**SAT** _____ **UNSAT** _____
			Examiner Cue for **RO Applicants** ONLY:	The Unit Supervisor is referring to Technical Specifications. The evaluation for this JPM is complete.
			NOTE:	SRO Applicants continue:
STEP	4	X	**Performance Step:** MB5C 5-7 step 4	Refer To Technical Specification 3.7.1.6 and DETERMINE Limiting Condition for Operation.
GRADE		X	**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 1

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

			requirement.	
		Grade:	**SAT** _____	**UNSAT** _____
STEP	5	**Performance Step:** MB5C 5-7 step 4	If failure is due to an instrument problem, Go To AOP 3571.	
GRADE	____ ____	**Standards:**	SRO applicant obtains AOP 3571.	
GRADE	____ ____	**Standards:**	SRO applicant recognizes that all actions as specified in AOP 3571 for a failure of 3MSS-PT20D are complete with the exception of notifying I & C Department.	
		Grade:	**SAT** _____	**UNSAT** _____
STEP	6	**Performance Step:** AOP 3571, Att. I Step 3.	Request I&C Department perform corrective maintenance on failed instrument.	
GRADE	____ ____	**Standards:**	SRO Applicant should state or otherwise demonstrate request for I&C action on failed instrument 3MSS-PT20D.	
		Grade:	**SAT** _____	**UNSAT** _____
		Examiner Cue:	**The evaluation for this JPM is complete.**	

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.3 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): 10 for RO / 15 for SRO _____

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.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.

Do you have any questions?

Are you ready to begin?

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 3

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

II. Initiated:

R.L. Lueneburg — 5/15/97
Developer — Date

III. Reviewed:

R. Royce — 6/13/97
Technical Reviewer — Date

R. Carr — 6/13/97
Instructional Reviewer — Date

IV. Approved:

Barry Pinkowitz — 06/13/97
Operations Manager — Date

Dave Lazarony — 06/13/97
Nuclear Training Supervisor — 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

JOB PERFORMANCE MEASURE WORKSHEET

JPM Tracking Number: 2K7 NRC S.4 Validation Time: _____ 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: Shutdown margin calculation

General References: AOP 3552, Rev. 007-00

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/generator. 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 complete Attachment A of AOP 3552 step 1 through step 7.f.**

JOB PERFORMANCE MEASURE WORKSHEET

SIMULATOR REQUIREMENTS:

1. **Reset to IC# 18.**
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.

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 3506 and refers to Attachment A, step 1.
STEP	2	____	**Performance Step:** (Cautions prior to step 1)	Improper rod alignment can cause fuel damage either directly or in conjunction with plant transients. Resetting ROD CONTROL URGENT FAILURE (MB4C 4-8) alarm without correcting the cause may result in dropping a group of control rods.
GRADE	____	____	**Standards:**	Candidate reviews cautions.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3	____	**Performance Step:** (Note prior to step 1)	A ROD CONTROL URGENT FAILURE (MB4C 4-8) alarm will inhibit both manual and automatic motion for all rods controlled from the affected power cabinet.
GRADE	____	____	**Standards:**	Candidate reviews note.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	4	____	**Performance Step:** (Step 1.a)	**Check Plant Conditions** Verify operational mode - MODE 1

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 1.a)

GRADE	____	____	**Standards:**	Verifies that the plant is in Mode 1 based on current power level.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	5	____	**Performance Step:** (Step 1.b)	Identify misaligned rod(s) using: • DRPI display • Rod Supervision on plant process computer
GRADE	____	____	**Standards:**	Checks the DRPI display and calls up PPC "Rod Supervision" display (NSSS, page forward, F6, F2) and identifies rod D4 as the only affected rod.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	6	____	**Performance Step:** (Step 1.c)	Check ROD CONTROL URGENT FAILURE (MB4C 4-8) annunciator - LIT
GRADE	____	____	**Standards:**	Checks Main Board annunciator MB4C 4-8 **NOT LIT**. Takes RNO action.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	7	____	**Performance Step:** (Step 1.c RNO)	Proceed to step 1.o

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	____	____	**Standards:**	Proceeds to step 1.o
			Grade:	**SAT** _____ **UNSAT** _____
STEP	8	____	**Performance Step:** (Step 1.o)	Request I&C verify affected rod lift coil fuse - NOT BLOWN
GRADE	____	____	**Standards:**	Recognizes from Initial Conditions that the lift coil fuse for rod D4 was blown and has been replaced by I&C.
			Cue: (If Required)	Inform the candidate that the lift coil fuse for rod D4 was blown and has been replaced by I&C.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	9	____	**Performance Step:** (Step 2.a)	**Verify Reactivity Control Systems Limits** Using TRM, Appendix 8.1, COLR, Check all shutdown rods - WITHDRAWN TO GREATER THAN OR EQUAL TO THE SHUTDOWN INSERTION LIMIT
GRADE	____	____	**Standards:**	Refers to theTRM and verifies that the shutdown rods are greater than the listed insertion limit of 220 steps.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	10	____	**Performance Step:**	Checks rods - AT LEAST ONE ROD

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 2.b)	MISALIGNED BY MORE THAN ± 12 STEPS FROM ITS GROUP STEP COUNTER.
GRADE	____	____	**Standards:**	Checks DRPI and/or the PPC "Rod Supervision" display and verifies that rod D4 is out of alignment by more than 12 steps.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	11	____	**Performance Step:** (Step 2.c)	Checks rods - A MAXIMUM OF ONE ROD MISALIGNED BY MORE THAN ± 12 STEPS FROM ITS GROUP STEP COUNTER.
GRADE	____	____	**Standards:**	Checks DRPI and/or the PPC "Rod Supervision" display, and verifies that ONLY rod D4 is out of alignment by more than 12 steps.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	12	____	**Performance Step:** (Step 2.d)	Notify Reactor Engineering.
GRADE	____	____	**Standards:**	Informs the US that D4 is misaligned more than 12 steps from its group and to notify Reactor Engineering. Candidate may call RE directly which is acceptable.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	13	____	**Performance Step:** (Step 2.e)	Within 1 hour, using OP 3209B, Shutdown Margin, Determine

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

Shutdown Margin in Modes 1 and 2 with an inoperable rod.

GRADE ____ ____ **Standards:** Informs the US that Shutdown Margin in Modes 1 and 2 with an inoperable rod must be determined within 1 hour.

Cue:	As US, inform Candidate that Shutdown Margin has been determined to be adequate for present plant conditions.

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

STEP 14 ____ **Performance Step:** (Step 3.a) **Verify Power Distribution Limits**

Verify reactor power - GREATER THAN 50%.

GRADE ____ ____ **Standards:** Checks the power range meters on MB4 and determines that reactor power is greater than 50%.

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

STEP 15 ____ **Performance Step:** (Step 3.b) Determine QPTR using:

- Plant computer - Tilting Factors
  OR
- SP 31012, Quadrant Power Tilt Ratio

GRADE ____ ____ **Standards:** Calls up PPC "Tilting Factors" display (NSSS, page forward, F9, F2) and determines QPTR.

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	16	____	**Performance Step:** (Step 3.c)	Check QPTR - LESS THAN OR EQUAL TO 1.09
GRADE	____	____	**Standards:**	Recognizes that QPTR < 1.09, and proceeds to next step.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	17	____	**Performance Step:** (Step 3.d)	Check QPTR - LESS THAN OR EQUAL TO 1.02
GRADE	____	____	**Standards:**	Recognizes that QPTR provided indicates < 1.02, and proceeds to next step.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	18	____	**Performance Step:** (Step 3.e)	Using TRM, Appendix 8.1, COLR, Check AFD – WITHIN LIMITS
			Cue:	Inform the candidate that AFD is within the limits specified in the TRM.
GRADE	____	____	**Standards:**	AFD within limits, candidate proceeds to next step.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	19	____	**Performance Step:** (Step 4.a)	**Check If Power Should Be Reduced** If necessary, Request Reactor Engineering determine time rod has been misaligned.

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	____	____	**Standards:**	Questions the US how long the rod has been misaligned. The candidate may contact RE directly to determine time rod has been misaligned.
			Cue:	Inform the examinee that the rod has been misaligned for 25 minutes.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	20	____	**Performance Step:** (Step 4.b)	Check rod misaligned - GREATER THAN 1 hour
GRADE	____	____	**Standards:**	Candidate proceeds to step 4.b. RNO.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	21	____	**Performance Step:** (Step 4.b RNO)	Perform the applicable action: • IF performing rod alignment within 1 hour is desired (T/S 3.1.3.1 ACTION b.1 or T/S 3.1.3.5 ACTION a), THEN Proceed to NOTE prior to step 5
GRADE	____	____	**Standards:**	Examinee proceeds to step 5.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	22	____	**Performance Step:** (Notes prior to step 5)	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.

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

				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	23	____	**Performance Step:** (Step 5.a)	**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 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	24	X	**Performance Step:** (Step 5.b)	Record affected group step counter position.
GRADE	____	X	**Standards:**	Notes the position of the control bank D group 1 step counter and records that number in Step 5.b.

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:	**SAT** _____ **UNSAT** _____
STEP	25	____	**Performance Step:** (Step 5.c.1)	Align control rod disconnect switches: 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	26	X	**Performance Step:** (Step 5.c.2)	Place each rod disconnect switch for the affected bank, *except the misaligned rod*, to the ROD DISCONNECTED position.
GRADE	____	X	**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	27	X	**Performance Step:** (Step 5.d)	Place control rod bank SEL switch to affected bank position.
GRADE	____	X	**Standards:**	Places the control bank SEL switch to the CBD 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: **SAT** _____ **UNSAT** _____

STEP	28	____	**Performance Step:** (Step 6.a)	**Align Rod** 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	29	X	**Performance Step:** (Step 6.b)	Insert misaligned rod until next lower position DRPI LED just changes state.
GRADE	____	X	**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.
			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	30	X	**Performance Step:** (Step 6.c)	Reset affected group step counter to a value of 2 steps higher than affected rod's indicated DRPI position.
GRADE	____	X	**Standards:**	Resets the control bank D group 1 step counter to a position that

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

corresponds to 2 steps higher than the DRPI indication for rod D4.

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

STEP	31		**Performance Step:** (Step 6.d)	Proceed to step 6.g.
GRADE			**Standards:**	Proceeds to step 6.g.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	32		**Performance Step:** (Step 6.g)	Verify rod misaligned - LESS THAN 16 hours.
GRADE			**Standards:**	Use information provided in the Initial Conditions.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	33	X	**Performance Step:** (Step 6.h)	Move misaligned rod until affected group step counter indicates value recorded in step 5.b.
GRADE		X	**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 than releases the switch.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	34	X	**Performance Step:** (Step 7.a)	**Restore Rod Control System** Place all lift coil disconnect switches

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

				for affected bank to ROD CONNECTED position.
GRADE	____	X	**Standards:**	Returns all lift coil disconnect switches to the "Connected" position.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	35	____	**Performance Step:** (Step 7.b)	Check ROD CONTROL URGENT FAILURE (MB4C 4-8) annunciator – LIT
GRADE	____	____	**Standards:**	Observes that annunciator MB4C 4-8 IS LIT.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	36	X	**Performance Step:** (Step 7.c)	Press ROD DRIVE RESET
GRADE	____	X	**Standards:**	Presses the ROD DRIVE RESET 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	37	____	**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.

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:	**SAT** _____	**UNSAT** _____
STEP	38	**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	39	**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** _____
		Terminating Cue:	The evaluation for this JPM is concluded.	

Stop Time: _____

VERIFICATION OF COMPLETION

JPM Number: 2K7 NRC S.4 Revision: 1 chg 3

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/generator. 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 complete Attachment A of AOP 3552 step 1 through step 7.f.

JOB PERFORMANCE MEASURE APPROVAL SHEET

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

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

II. Initiated:

Dave Minnich
Developer

12/21/06
Date

III. Reviewed:

Martin
Technical Reviewer

1/24/7
Date

IV. Approved:

NA
Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

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

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

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

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

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

Required Materials: None.

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

JPM Number: 2K7 NRC S.5 Revision: 0

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) and RC09B to cause the "B" RCP to trip.
3. Place the simulator in run. Place the master silence switch in the "silence" position.
4. After the reactor has tripped, place the simulator in "freeze".
5. Place the simulator in "run" after the examinee has read and understands the Initial conditions and initiating cues.

Approximate simulator setup time is 5-7 minutes.

Initial Conditions: Just seconds ago, while the plant was operating at 100% power, the "B" RCP tripped. The US has placed the master silence switch in the "silence" position. The evaluator will acknowledge all communications to the US.

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

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

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

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5 Revision: 0

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

Start Time: _____

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** _____

STEP 3 X **Performance Step:** TRIP the turbine.
2.a.RNO

GRADE ____ X **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	4	X	**Performance Step:** **2.a.RNO**	IF the turbine will NOT trip, THEN Runback the turbine to close the control valves. IF the turbine can NOT be runback THEN CLOSE the MSIVs and MSIV bypass valves.
GRADE	____	X	**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 and when the control valves are fully closed declares that the turbine is tripped. Shifts to actions in the ACTION column.
			Grade:	**SAT** _____ **UNSAT** _____
			Evaluator NOTE:	The applicant may decide the control valves are not closing fast enough or the control valves are not fully closed. In that case he will go to 'CLOSE' on the MSIV switches and verify the MSIV Bypass valves closed. This is acceptable.
STEP	5	____	**Performance Step:** 3.a.	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.

PERFORMANCE INFORMATION

JPM Number: 2K7 NRC S.5 Revision: 0

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

			Grade:	**SAT** _____ **UNSAT** _____
			Note:	An SI will have actuated due to the turbine not tripping.
STEP	6	____	**Performance Step:** **4.a.**	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	7	____	**Performance Step:** **4.b.**	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 in the RNO column.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	8	X	**Performance Step:** 4.b.RNO	Manually Initiate SI.
GRADE	____	X	**Standards:**	At MB2 or MB4, manually actuates SI by rotating the SI actuation switch to

			Standards:	the actuate position. By observation of ESF Group 2 Status Panel determines that both trains of SI have actuated.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	9	____	**Performance Step:** 4.c.	Check reactor trip and bypass 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.
			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

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: **Just seconds ago, while the plant was operating at 100% power, the "B" RCP tripped. The US has placed the master silence switch in the "silence" position. The evaluator will acknowledge all communications to the US.**

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

JOB PERFORMANCE MEASURE APPROVAL SHEET

I. JPM Title: Check if RCP(s) Should Be Stopped

JPM ID Number: 2K7 NRC S.6 Revision: 0

II. Initiated:

P. Malzahn — Developer — 6/20/05 — Date

III. Reviewed:

R. McDonald — Technical Reviewer — 6/30/05 — Date

IV. Approved:

J. Grogan — Cognizant Plant Supervisor (optional) — 6/30/05 — Date

T. Kulterman — Nuclear Training Supervisor — 7/1/05 — Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

JPM ID Number: 2K7 NRC S.6 Revision: 0

Task Title: Check If RCP(s) Should Be Stopped

System: 002

Time Critical Task: ( ) YES (X) NO

Validated Time (minutes): 5

Task Number(s): 344-05-033

Applicable To: SRO X RO X PEO _____

K/A Number: 002-A2.04 K/A Rating: 4.3 / 4.6

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 3505 Rev. 010-02

*****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: S.6 Revision: 0

Simulator Requirements:

A. Reset to IC 29 or equivalent (Mode 5, 170° - 180°F, steam bubble in PZR, 2 RHR trains in service)

B. Insert Malfunctions RH01A, RH01B (RHR P1A and B trip)

C. Place the "A" RHR pp control switch in P-T-L and place a yellow caution tag on the switch.

D. Place simulator in "RUN" and verify "A" & "B" RCPs running and RHR pumps off/tripped.

E. Adjust Charging flow if necessary to maintain RCS pressure between 310 and 375 psia.

E. Place simulator in "FREEZE".

F. Place simulator in "RUN" after candidate receives instructions.

Approximate Simulator setup time is 10 minutes

Initial Conditions: The plant is in Mode 5 with a steam bubble in the PZR and "A" & "B" RCPs in service. The "A" RHR pump is out of service due to a breaker problem. Several minutes ago the "B" RHR pump tripped and the crew entered EOP 3505, Loss Of Shutdown Cooling And/Or RCS Inventory. Attachment "B," Loss of Shutdown Cooling And/Or RCS Inventory During Mode 5, has been completed through step 8 and all S/G's have been verified available.

Initiating Cues: The US has directed you to perform step 9 of EOP 3505 Att. "B," Check if RCP(s) Should Be Stopped.

****** 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.6 Revision: 0

Task Title: Check if RCP(s) Should Be Stopped

Start Time: _____

STEP	1	____	**Performance Step:**	Obtains copy of EOP 3505.
GRADE	____	____	**Standards:**	Obtains a copy of EOP 3505, refers to Attachment "B" Step 9.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	2	____	**Performance Step:** Att. "B" step 9.a.	Check RCP status – AT LEAST ONE RUNNING
GRADE	____	____	**Standards:**	Checks RCP breaker indications, flow, amps etc. and determines "A" & "B" RCPs are running
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3	____	**Performance Step:** Att. "B" step 9.b.	Verify only one RCP - RUNNING
GRADE	____	____	**Standards:**	Checks RCP breaker indications, flow, amps etc. and determines "A" & "B" RCPs are running. Moves to RNO column.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	4	X	**Performance Step:** Att. "B" step 9.b. RNO	PERFORM the applicable action: • IF PZR steam bubble is established, THEN STOP all but RCP 2 • IF PZR is solid, THEN STOP all but one RCP
GRADE	____	____	**Standards:**	Determines from initiating cue and/or PZR liquid/vapor space temperatures that PZR steam bubble established

PERFORMANCE INFORMATION

JPM Number: S.6 Revision: 0

Task Title: Check if RCP(s) Should Be Stopped

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

GRADE	____	X	**Standards:**	STOPS "A" RCP
				Comment: Examinee may elect to place the spray valve controller for "A" RCP in Manual and close the valve
			Grade:	**SAT** _____ **UNSAT** _____
STEP	5	____	**Performance Step:** Att. "B" step 9.c.	Check the following for the running RCP • No. 1 Seal differential pressure – GREATER THAN 210 psid • No. 1 Seal leakoff flow – GREATER THAN OR EQUAL TO 0.2 gpm
GRADE	____	____	**Standards:**	Determines seal parameters are satisfied by observing CHS-PI152A, CHS-FR156 and/or CHS-FR160 indications at MB3.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	6	____	**Performance Step:** Att. "B" step 9.d.	Maintain RCS pressure BETWEEN 310 psia and 375 psia
GRADE	____	____	**Standards:**	Determines RCS pressure is within required band by observing RCS-PR403, RCS-PI405A, or a PPC pressure trend if established.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	7	____	**Performance Step:**	Reports to US that step 9 of EOP 3505 Att. "B" has been completed and the "B" RCP is running, "A" RCP has been stopped.
GRADE	____	____	**Standards:**	Reports completion to US

PERFORMANCE INFORMATION

JPM Number: S.6 Revision: 0

Task Title: Check if RCP(s) Should Be Stopped

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

Terminating Cue: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC S.6 Revision: 0

Date Performed: _____

Student: _____

Evaluator: _____

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

Time Critical Task? YES _____ NO X

Validated Time (minutes): 5

Actual Time to Complete (minutes): _____

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

Result of oral questions (if applicable):

Number of Questions: _____

Number of Correct Responses: _____

Score: _____

Areas for Improvement:

STUDENT HANDOUT

JPM Number: **S.6**

Initial Conditions: The plant is in Mode 5 with a steam bubble in the PZR and "A" & "B" RCPs in service. The "A" RHR pump is out of service due to a breaker problem. Several minutes ago the "B" RHR pump tripped and the crew entered EOP 3505, Loss Of Shutdown Cooling And/Or RCS Inventory. Attachment "B," Loss of Shutdown Cooling And/Or RCS Inventory During Mode 5, has been completed through step 8 and all S/G's have been verified available.

Initiating Cues: **The US has directed you to perform step 9 of EOP 3505 Att. "B," Check if RCP(s) Should Be Stopped.**

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

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

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

II. Initiated:

D. Minnich
Developer

12/27/06
Date

III. Reviewed:

Martin
Technical Reviewer

1/24/7
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL WORKSHEET

SUMMARY OF CHANGES

Change	Description	Date

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Candidate: _____

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

System: 010

Time Critical Task: ( ) YES (X) NO

Validated Time (minutes): 5

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.

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

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*MV8000 RED TO FALSE
8 (RC) 3RCS*MV8000 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.

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

Start Time: _____

STEP	1		**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	2	X	**Performance Step:** (ES-1.2 step 10)	Place All PZR Heater Switches To OFF position.
GRADE		X	**Standards:**	Rotates the "D" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.
GRADE		X	**Standards:**	Rotates the "E" PZR B/U heaters control switch to "OFF." Observes the amber light goes OFF.
GRADE		X	**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		X	**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

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	**4**	**X**	**Performance Step:** (step 11.a RNO)	Perform the applicable action: • IF a PZR PORV is available, THEN Depressurize RCS using one PZR PORV and Proceed to step 11.d. • IF a PZR PORV is NOT available, THEN Proceed to step 11.c.
			Comments:	The candidate should determine that the "A" PORV is out of service.
GRADE		**X**	**Standards:**	Candidate takes the control switch for the "B" PORV to the OPEN position.
GRADE		**X**	**Standards:**	Candidate determines that the "B" PORV will not open and proceeds to step 11.c.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**5**		**Performance Step:** (step 11.c.1)	**Use auxiliary spray:** 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** _____ **UNSAT** _____

PERFORMANCE INFORMATION

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	6		**Performance Step:** (Step 11.c.2)	Verify at least one charging pump - RUNNING
GRADE			**Standards:**	Determines that both charging pumps are running by observation of red indicating lights on / green off, amps, flow etc.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	7		**Performance Step:** (Step 11.c.3)	CLOSE charging header loop isolation valves • 3CHS*AV8146 • 3CHS*AV8147
GRADE			**Standards:**	Determines that both charging header loop isolation valves are closed by observation of green indicating lights on / red off.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	8	X	**Performance Step:** (Step 11.c.4)	Fully Open charging line flow control valve.
GRADE		X	**Standards:**	Candidate takes manual control of and fully opens 3CHS*FCV121 by depressing the open pushbutton on 3CHS*FK121 until output is at maximum.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	**9**	**X**	**Performance Step:** (Step 11.c.5)	OPEN charging header isolation valves • 3CHS*MV8106 • 3CHS*MV8105
GRADE	____	**X**	**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	**10**	**X**	**Performance Step:** (Step 11.c.6)	Unlock and OPEN auxiliary spray valve (3RCS*AV8145)
GRADE	____	**X**	**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	**11**	____	**Performance Step:** (Step 11.c.7)	CLOSE both charging pump cold leg injection valves • 3SIH*MV8801A • 3SIH*MV8801B
GRADE	____	**X**	**Standards:**	Depresses close pushbuttons for 3SIH*MV8801A and 3SIH*MV8801B.

PERFORMANCE INFORMATION

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

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

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.)
STEP	**14**	____	**Performance Step:** (Step 11.e)	Check normal PZR spray valve - OPEN FOR DEPRESSURIZATION
GRADE	____	____	**Standards:**	Observes indications associated with spray valves and determines spray valves are closed. Proceeds to step 11.e RNO
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**15**	**X**	**Performance Step:** (Step 11.e.1)	Perform the applicable action: IF auxiliary spray valve open, THEN, OPEN both charging pump cold leg injection valves.
GRADE	____	**X**	**Standards:**	Depresses open pushbuttons for 3SIH*MV8801A and 3SIH*MV8801B.
GRADE	____	____	**Standards:**	Checks position indicating lights and determines valves have opened by red

indicating lights on, green off.

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

STEP	**16**	____	**Performance Step:** (Step 11.e.2)	CLOSE auxiliary spray valve (3RCS*AV8145).
GRADE	____	**X**	**Standards:**	Rotates key in the 3RCS*AV8145 control switch counter- clockwise to the closed position.
GRADE	____	____	**Standards:**	Checks position indicating lights and determines valve has closed by green indicating light on, red off.

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

STEP	**17**	____	**Performance Step:** (Step 11.e.3)	CLOSE charging header isolation valves.
GRADE	____	**X**	**Standards:**	Depresses close pushbuttons for 3CHS*MV8106 and 3CHS*MV8105.
GRADE	____	____	**Standards:**	Checks position indicating lights and determines valves have closed by green indicating lights on, red off.

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

STEP	**18**	____	**Performance Step:** (Step 11.e.4)	Proceed to CAUTION prior to step 12.
GRADE	____	____	**Standards:**	Candidate proceeds to CAUTION prior to step 12.

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

PERFORMANCE INFORMATION

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

Task Title: DEPRESSURIZE THE RCS TO REFILL THE PZR

STEP	**19**	____	**Performance Step:**	Inform the US that the RCS has been depressurized and the pressurizer refilled in accordance with ES-1.2.
GRADE	____	____	**Standards:**	Reports to the US that Steps 10 and 11 of ES-1.2 have been completed. Pressurizer level is greater than 25% and the depressurization has been stopped.
			Grade:	**SAT** **UNSAT**
			Terminating Cue:	The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

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

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): XX

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

I. JPM Title: Respond To Containment Sump Blockage

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

II. Initiated:

D. Minnich
Developer

12/13/06
Date

III. Reviewed:

Technical Reviewer

1/24/7
Date

IV. Approved:

Cognizant Plant Supervisor (optional)

Date

Nuclear Training Supervisor

1/24/07
Date

JOB PERFORMANCE MEASURE APPROVAL SHEET

SUMMARY OF CHANGES

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Applicant: _____

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

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

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.

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

Task Title: Respond To Containment Sump Blockage

Start Time: _____

STEP	1		**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	2		**Performance Step:** Caution prior to step 1.	If the suction source is lost to any ECCS or containment spray pump, the pump must be stopped.
GRADE			**Standards:**	Applicant reads CAUTION.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3		**Performance Step:** Note prior to step 1.	If emergency coolant recirculation capability is restored during this procedure, further recovery actions should continue by going to the procedure and step in effect.
GRADE			**Standards:**	Applicant reads NOTE.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	4		**Performance Step:** Step 1 RNO	Continue Attempts To Restore Emergency Coolant Recirculation Equipment
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

Task Title: Respond To Containment Sump Blockage

Coolant Recirculation

			Grade:	**SAT** _____ **UNSAT** _____
STEP	5	____	**Performance Step:** Caution prior to step 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:** 2.	RESET ESF Actuation Signals If Required • 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:** 3.a.	Add Makeup To RWST Using GA-10, Fill the RWST as required while continuing with this procedure <u>WHEN</u> RWST level has increased to greater than 100,000 gal <u>THEN</u> 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

Task Title: Respond To Containment Sump Blockage

			CUE:	US that GA-10 must be carried out to fill the RWST. Respond as the US that another RO will carry out the actions of GA-10.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	8	____	**Performance Step:** 4.a.	Check Quench Spray Pump Requirements 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 not in alert or alarm by observation of 3RMS*RE04A and *RE05A amber and red trip lights are not lit.
			NOTE:	Due to OPERABILITY concerns with respect to 3RMS*RE04A and *RE05A, the applicant may use diverse indications to determine the radiation reading inside CTMT.
STEP	9	____	**Performance Step:** 4.b.	Check Ctmt spray - INITIATED
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** _____
STEP	10	____	**Performance Step:** 4.c.	Check Ctmt pressure - LESS THAN 17.5 psia.

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

GRADE	____	____	**Standards:**	Determines by observation that CTMT pressure is less than 17.5 psia.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	11	X	**Performance Step:** 4.d.	STOP both quench spray pumps and place in AUTO
GRADE	____	X	**Standards:**	Stops the "A" and "B" quench spray pumps by rotating each control switch to the stop position.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	12	____	**Performance Step:** 4.e.	CLOSE quench spray pump(s) discharge valves • For pump A - 3QSS*MOV34A • For pump B - 3QSS*MOV34B
GRADE	____	____	**Standards:**	Depresses the 3QSS*MOV34A "CLOSE" pushbutton. Verifies indicating lights shift to green ON, red OFF
GRADE	____	____	**Standards:**	Depresses the 3QSS*MOV34B "CLOSE" pushbutton. Verifies indicating lights shift to green ON, red OFF
			Grade:	**SAT** _____ **UNSAT** _____
STEP	13	____	**Performance Step:** 4.f.	Check Ctmt pressure - GREATER THAN 23 psia.
GRADE	____	____	**Standards:**	Determines by observation that CTMT pressure is less than 23 psia.

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

		Grade:	**SAT** _____	**UNSAT** _____
STEP	14 ____	**Performance Step:** 4.f. RNO	Proceed to step 5. and, IF Ctmt pressure increases to 23 psia, THEN Realign quench spray system to establish only one quench spray pump running	
GRADE	____ ____	**Standards:**	Proceeds to step 5.	
		Grade:	**SAT** _____	**UNSAT** _____
STEP	15 ____	**Performance Step:** 5.a.	Verify CAR Fan Status a. Check Ctmt WR sump level (RSS*LI22A or RSS*LI22B) - LESS THAN 4 ft	
GRADE	____ ____	**Standards:**	Determines that Ctmt WR sump level is greater than 4 ft by direct observation of RSS*LI22A and RSS*LI22B.	
		Grade:	**SAT** _____	**UNSAT** _____
STEP	16 ____	**Performance Step:** 5.a.RNO	STOP running CAR fans and Proceed to step 6.	
GRADE	____ ____	**Standards:**	At VP1 determines that CAR fans A and B are NOT running by observation of green indicating lights on / red off. Proceeds to step 6.	
		Grade:	**SAT** _____	**UNSAT** _____

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

STEP	17	____	**Performance Step:** 6.	Monitor Containment Recirculation Sump- INDICATION OF BLOCKAGE • RSS pumps stopped due to indications of cavitation • Sump level indications NOT consistent with plant conditions
GRADE	____	____	**Standards:**	Determines that RSS pumps were stopped due to indications of cavitation.
			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	18	____	**Performance Step:** NOTE prior to step 7.	The charging and SI pumps should be stopped on alternate ECCS trains when possible.
GRADE	____	____	**Standards:**	Applicant reads NOTE.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	19	____	**Performance Step:** 7.a.	Establish One Train Of ECCS Flow 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** _____

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

STEP	20	____	**Performance Step:** 7.a.RNO	Go To step 8.
GRADE	____	____	**Standards:**	Proceeds to step 8.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	21	____	**Performance Step:** Step 8 CAUTIONS	Any pump receiving suction from an affected Containment Recirculation Pump should be stopped before stopping the Containment Recirculation Pump. If any Charging Pump or Safety Injection Pump loses suction or shows indications of cavitation, the pump must be stopped.
GRADE	____	____	**Standards:**	Applicant reads CAUTIONS.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	22	____	**Performance Step:** Step 8 NOTES.	CSF status trees should be monitored for information only. Every effort should be made to address the FRGs without compromising the containment sump. Indications of cavitation should be monitored following any change of recirculation flow.
GRADE	____	____	**Standards:**	Applicant reads NOTES.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

STEP	23		**Performance Step:** 8.a.	Establish Recirculation Spray Pump Recirculation Flow a. Verify Ctmt sump level - GREATER THAN 1.5 feet
GRADE			**Standards:**	Determines by observation that CTMT sump level is greater than 1.5 feet.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	24		**Performance Step:** Step 8.b NOTE.	3RSS*P1A or 3RSS*P1B are the preferred pumps due to the automatic recirculation capability.
GRADE			**Standards:**	Applicant reads NOTE.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	25		**Performance Step:** 8.b.	Recirculation Spray Pump -ONLY ONE PUMP RUNNING
GRADE			**Standards:**	Determines by observation that NO Recirculation Spray Pumps are running.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	26	X	**Performance Step:** 8.b.RNO	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 27 ____ **Performance Step:** 8.c. Verify RSS pump has been in operation - AT LEAST TWO MINUTES

GRADE ____ ____ **Standards:** Applicant starts a timer to track length of time the RSS pump has been running.

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

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

STEP 28 ____ **Performance Step:** 9.a. Establish ECCS Flow from Sump.

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

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

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

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

STEP	30	X	**Performance Step:** 9.b.RNO	START or STOP charging and SI pumps to establish only one running.
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
			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	31	X	**Performance Step:** 9.c.	Using Attachment A, Check minimum ECCS flow to remove decay heat- 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	32	____	**Performance Step:** 9.d.	Check Charging OR SI pump(s) - RUNNING IN RECIRCULATION ALIGNMENT

PERFORMANCE INFORMATION

JPM Number: S.8 Revision: 0

Task Title: Respond To Containment Sump Blockage

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** _____
STEP	33	X	**Performance Step:** 9.e.	CLOSE recirculation spray header isolation valve for running pump- • 3RSS*MOV20A • 3RSS*MOV20B • 3RSS*MOV20C • 3RSS*MOV20D
GRADE	____	X	**Standards:**	Depresses open 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	34	____	**Performance Step:** 9.f.	Go to step 12.
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

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

II. Initiated:

P. Malzahn — 6/19/06
Developer — Date

III. Reviewed:

Dave Minnich — 06/19/06
Technical Reviewer — Date

IV. Approved:

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

Tim Kulterman — 06/20/06
Nuclear Training Supervisor — Date

Job Performance Measure Approval Sheet

SUMMARY OF CHANGES

Change	Description	Date

Job Performance Measure Guide

Facility: Millstone Unit 3 Student: _____

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

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

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

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

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:** (Step 1)	Refer to "Appendix R" Lighting Illuminated Path" maps at end of attachment prior to performing local actions.
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:** (Step 6)	**Verify Reactor Tripped** 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.
			(Step 6.a. RNO)	TRIP the reactor trip and bypass breakers.

Performance Information

JPM Number: P.1 Revision: 0

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

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
			Grade:	**SAT** _____ **UNSAT** _____
			Cue:	Upon arrival at the TRIP & BYPASS breakers, TRIP breaker flags indicate CLOSED; BYPASS breakers indicate OPEN
			Cue:	Breaker TRIP/OPEN flag appears AFTER candidate simulates pushing TRIP PBs on breaker front panel
			Comments:	RNO must be performed
STEP	3	X	**Performance Step:** (Step 7)	**Block Open Auxiliary Building North Doors to Outside on El. 24'-6"** Door A-24-1 Door A-24-2
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:** (Step 8)	**De-energize TD AFW Pump Steam Supply Isolation Valves**

JPM Number: P.1 Revision: 0

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

- 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
			Cue:	As each breaker is simulated operated, provide the following cue: Breaker is in the OFF position
STEP	5	X	**Performance Step:** (Step 9)	**Block Open the TD AFW pump Cubicle Doors** Door SF-24-1 Door SF-24-2

Performance Information

JPM Number: P.1 Revision: 0

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

GRADE ____ X	**Standards:**	Simulates blocking open the TD AFW pump area outside door and the door to MOV17 A, B & D - student explains method and component(s) used to achieve blocking OPEN
	Grade:	**SAT** _____ **UNSAT** _____
	Cue:	You have material to block doors open
	Cue:	As each door is simulated blocked open, provide the following cue: The door is blocked OPEN

Comments:
Location for steps 6 - 9 is ESF Bldg. TD AFW pump valve room 24'.

STEP 6 ____	**Performance Step:** (Step 10)	**Verify TD AFW Pump Steam Isolation Valves - OPEN** 3MSS*MOV17A 3MSS*MOV17B 3MSS*MOV17D Checks SG A TD AFW Pump Non-Return Valve 3MSS*MOV17A OPEN.
GRADE ____ ____	**Standards:**	Locates valve 3MSS*MOV17A and checks the position indicator (rod). OR Manually checks valve position by engaging the manual handwheel.
	Cue: OR **Cue:**	Stem position rod is as you see it. ---THIS STEP IS COMPLETE--- OR The MOV clutch is disengaged.
GRADE ____ ____	**Standards:**	Rotates the handwheel in the clockwise direction to confirm the valve is open.
	Cue:	Valve handwheel rotates in the

				clockwise direction.
GRADE	____	____	**Standards:**	Rotates the handwheel in the counterclockwise direction until the valve is fully open.
			Cue:	Valve handwheel rotates in the counterclockwise direction, eventually some resistance is met and the valve comes to a hard stop.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	7	____	**Performance Step:** (Step 10)	Checks SG B TD AFW Pump Non-Return valve 3MSS*MOV17B OPEN.
GRADE	____	____	**Standards:**	Locates valve 3MSS*MOV17B and checks the position indicator (rod). OR Manually checks valve position by engaging the manual handwheel.
			Cue: OR **Cue:**	Stem position rod is as you see it. ---THIS STEP IS COMPLETE--- OR The MOV clutch is disengaged.
GRADE	____	____	**Standards:**	Rotates the handwheel in the clockwise direction to confirm the valve is open.
			Cue:	Valve handwheel rotates in the clockwise direction.
GRADE	____	____	**Standards:**	Rotates the handwheel in the counterclockwise direction until the valve is fully open.
			Cue:	Valve handwheel rotates in the counterclockwise direction, eventually some resistance is met and the valve comes to a hard stop.

Performance Information

JPM Number: P.1 Revision: 0

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

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

STEP	8	____	**Performance Step:** (Step 10)	Checks SG D TD AFW Pump Non-Return valve 3MSS*MOV17D OPEN.
GRADE	____	____	**Standards:**	Locates valve 3MSS*MOV17D and checks the position indicator (rod). OR Manually checks valve position by engaging the manual handwheel.
			Cue: OR **Cue:**	Stem position rod is as you see it. ---THIS STEP IS COMPLETE--- OR The MOV clutch is disengaged.
GRADE	____	____	**Standards:**	Rotates the handwheel in the clockwise direction to confirm the valve is open.
			Cue:	Valve handwheel rotates in the clockwise direction.
GRADE	____	____	**Standards:**	Rotates the handwheel in the counterclockwise direction until the valve is fully open.
			Cue:	Valve handwheel rotates in the counterclockwise direction, eventually some resistance is met and the valve comes to a hard stop.

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

STEP	9	____	**Performance Step:** (Step 11)	**Perform the Following:** a. Establish communication with the ASP operator

Performance Information

JPM Number: P.1 Revision: 0

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

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

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/Ch1
ch 1 R. McDonald

II. Initiated:

J. William Cote — 2/10/00
Developer — Date

III. Reviewed:

Rich Carr — 12/18/01
Technical Reviewer — Date

IV. Approved:

W. Hoffner — 12/20/01
Cognizant Plant Supervisor (optional) — Date

Tim Kulterman — 12/19/01
Nuclear Training Supervisor — 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

JOB PERFORMANCE MEASURE GUIDE

Facility: Millstone Unit 3 Student: _____

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

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

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 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 P.2 Revision: 0

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

Start Time: _____

STEP 1		**Performance Step:** Att. A Step 1.a	Place both instrument air compressor control switches to CS (continuous service).
		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:	The control switch is already in the CS position.
GRADE		**Standards:**	Locates the control switch for 3IAS-C1B (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position.
		Cue:	The control switch is already in the CS position.
		Comments:	The instrument air compressor switches addressed in this step may be operated in any order.
		Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	2		**Performance Step:** Att. A Step 1.b	Place the service air compressor control switch to CS (continuous service).
GRADE			**Standards:**	Locates the control switch for 3SAS-C1 (Turbine Building 14' elev. SW corner on top of panels) and checks the switch position.
			Cue:	The control switch is already in the CS position.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3	X	**Performance Step:** Att. A Step 1.c	CLOSE service air header supply valve (3SAS-AOV33).
GRADE			**Standards:**	Locates valve 3SAS-AOV33 control switch (on IAS Panel) and checks valve position indicating lights.
			Cue:	The green light is dark and the red light is illuminated.
GRADE		X	**Standards:**	Closes valve by positioning switch to the "CLOSE" position.
			Cue:	The green light illuminates and the red light goes dark.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

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

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP 5 ____ **Performance Step:** Att. A Step 2

Verify the following Instrument Air 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:	Alarm widows 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:	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:	Alarm widow "ALARM BLOWER FAILURE" is not lit.

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

____ ____

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	**6**	**X**	**Performance Step:** Att. A Step 3	Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid.
GRADE			**Standards:**	Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading.
			Cue:	The gauge indicates pegged high.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**7**	**X**	**Performance Step:** Att. A Step 3 RNO	Using OP3332A, Instrument Air System, Alternate in-service instrument air filters.
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:	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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	**9**	**X**	**Performance Step:** OP 3332 4.6.2.a	Throttle open 3IAS-V18, filter 2B inlet isolation.
GRADE	____	____	**Standards:**	Locates 3IAS-V18 and slowly throttles open on 3IAS-V18 until air equalizes.
			Cue:	Slight air noise is heard and slowly fades away
			Grade:	**SAT** _____ **UNSAT** _____

STEP	**10**	**X**	**Performance Step:** OP 3332 4.6.2.b	WHEN filter pressure equalizes with the instrument air header pressure, fully OPEN 3IAS-V18, filter 2B inlet isolation.
GRADE	____	____	**Standards:**	Rotates 3IAS-V18 in the counterclockwise direction until fully open.
			Cue:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.
GRADE	____	____	**Standards:**	Rotates the handwheel in the clockwise direction 1/4 of 1 turn
			Cue:	Handwheel has been rotated 1/4 turn in the clockwise direction.
			Grade:	**SAT** _____ **UNSAT** _____

STEP	**11**	**X**	**Performance Step:** OP 3332 4.6.2.c	Open 3IAS-V19, filter 2B outlet isolation.

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

GRADE	____	____	**Standards:**	Locates and rotates 3IAS-V19 in the counterclockwise direction until fully open.
			Cue:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.
GRADE	____	____	**Standards:**	Rotates the handwheel in the clockwise direction 1/4 of 1 turn.
			Cue:	Handwheel has been rotated 1/4 turn in the clockwise direction.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**12**	**X**	**Performance Step:** OP 3332 4.6.2.d	Close 3IAS-V21, filter 2A outlet isolation.
GRADE	____	____	**Standards:**	Locates and rotates 3IAS-V21 in the clockwise direction until fully closed.
			Cue:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.
			Grade:	**SAT** _____ **UNSAT** _____

PERFORMANCE INFORMATION

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

Task Title: LOCAL ACTIONS ON LOSS OF INSTRUMENT AIR

STEP	**13**	**X**	**Performance Step:** OP 3332 4.6.2.e	Close 3IAS-V20, filter 2A inlet isolation.
GRADE	____	____	**Standards:**	Locates and rotates 3IAS-V-20 in the clockwise direction until fully closed.
			Cue:	Valve hand wheel rotates freely until some resistance is met. Valve hand wheel comes to a hard stop.
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**14**	____	**Performance Step:** Att. A Step 3	Verify Instrument Air Filter Differential Pressure - LESS THAN 4 psid.
GRADE	____	____	**Standards:**	Locates air filter differential pressure gauge (3IAS-PDIS16) (East of air dryer) and verifies differential pressure reading.
			Cue:	Filter DP reads 0.25 psid
			Grade:	**SAT** _____ **UNSAT** _____
STEP	**15**	____	**Performance Step:**	Notify the Control Room that Attachment A of AOP 3562 is complete.

PERFORMANCE INFORMATION

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

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: The evaluation for this JPM is concluded.

Stop Time: _____

VERIFICATION OF JPM COMPLETION

JPM Number: 2K7 NRC P.2 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): _____

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

I. JPM Title: Cross-Connect Service Water to East Switchgear Ventilation

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

II. Initiated:

D. Minnich — Developer — 12/8/06 — Date

III. Reviewed:

Martin — Technical Reviewer — 1/24/7 — Date

IV. Approved:

Cognizant Plant Supervisor (optional) — Date

T. Kulterman — Nuclear Training Supervisor — 1/24/07 — Date

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.

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 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.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

			Grade:	**SAT** _____ **UNSAT** _____
			Note:	The following step de-energizes the Train A HVK isolation valves to/from East Switchgear Room to ensure they are closed. (Train B valves were de-energized in an earlier procedure step which de-energized 34D.)
STEP	2	X	**Performance Step:** (EOP 3509.1, Step 42.b.1)	Cross-connect service water to the switchgear room ACUs 1) At 3SCV*PNLR1(O) (Control Building 4'-6") Place breakers 19 and 22 to OFF
GRADE	____	X	**Standards:**	Locates 3SCV*PNLR1(O) in E. Switchgear Room, opens panel door, simulates sliding breakers 19 and 22 to the OFF position.
			Cue:	Breakers are in the OFF position
			Grade:	**SAT** _____ **UNSAT** _____
STEP	3	X	**Performance Step:** (EOP 3509.1, Step 42.b.2)	2) Locally Open service water cross-connect valves (Control Building 4'-6") 3SWP*V745 3SWP*V747 3SWP*V744 3SWP*V746
GRADE	____	X	**Standards:**	Locates each valve and using locked valve key unlocks and removes chain. Rotates valve handwheel (or handle) in counter clockwise direction until valve comes to a hard stop.
			Comment:	Valve should be positioned ¼ turn closed from the full open position in accordance with Ops guidance for keeping manual valves off the

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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.