

FINAL AS-ADMINISTERED WALKTHROUGH JPMS

FOR THE PERRY INITIAL EXAMINATION - JANUARY 2001

Facility: PerryDate of Examination: 1/08/01Exam Level (circle one): **RO** / **SRO(I)** / SRO(U) Operating Test No.: 2001-01

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. Nuclear Closed Cooling / Shift NCC Pumps 400000	N, S	8
b. HPCS DG / Parallel and Load HPCS DG (Faulted) 264000	M, A, S	6
c. Main Steam / Open MSIVs 239001	N, S, L	3
d. Main Turbine / Turbine Roll Following Turbine Trip (Quick Restart) (Faulted) 245000	N, A, S, L	4
e. CVDWP / Startup to Intermittent Mode 223001	N, S	5
f. RPS / Pulling Scram Fuses 212000 / 295015 / 295037	D, S	7
g. RCIC / Manually Initiate RCIC (Faulted) 217000	N, A, S	2

B.2 Facility Walk-Through

a. RHR C Runout Injection 203000	D	4
b. Standby DG / Division 2 DG Restoration (Faulted) 264000 / 295003	N, A	6 #
c. CRDH / CRD Alternate Injection (Start Second CRD Pump) 201001 / 295031	D, R	1

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Substituted APE/EPE for Safety Function

Facility: PerryDate of Examination: 1/08/01Exam Level (circle one): RO / SRO(I) / **SRO(U)** Operating Test No.: 2001-01

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a.		
b. HPCS DG / Parallel and Load HPCS DG (Faulted) 264000	M, A, S	6
c. Main Steam / Open MSIVs 239001	N, S, L	3
d.		
e.		
f.		
g. RCIC / Manually Initiate RCIC (Faulted) 217000	N, A, S	2

B.2 Facility Walk-Through

a. RHR C Runout Injection 203000	D	4
b.		
c. CRDH / CRD Alternate Injection (Start Second CRD Pump) 201001 / 295031	D, R	1

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA

Perry NRC Exam LC 99-01

Control Room Systems Simulator Setup

This setup sheet will contain instructions to allow the simulator to be setup for the performance of the Part B.1 Control Room Systems JPMs.

IC Setup #1 is designed for JPMs B.1.a, B.1.b, B.1.d, and B.1.e.

IC Setup #2 is designed for JPMs B.1.a, B.1.c, and B.1.e.

IC Setup #3 is designed for JPMs B.1.f and B.1.g.

JPMs B.1.a and B.1.e can be performed in either IC setup #1 or #2.

Coordinate these JPMs with the Admin JPMs as much as possible.

The Batch File is designed to be used with either IC.

Batch File 'LNC9901-JPM'

1. IOR AN:1H13P60116A[18]	(E1 30) ALARM_ON	DIV 3 DG TROUBLE ALARM
2. IOR AN:1H13P60116A[27]	(E1 2:30) ALARM_ON	DG TRIP JACKET WATER TEMP HIGH
3. IMF TU04C	(E2 0) 100 0 0	Main Turbine Bearing #3 Hi Temp
4. IMF RY02:1E22K9	Active	HPCS Initiation Relay Failure-as is
5. IMF RY02:1C71K14A	Active	Channel A Scram Relay Failure-as is
6. IMF RY02:1C71K14C	Active	Channel C Scram Relay Failure-as is
7. IMF RY02:1C71K14E	Active	Channel E Scram Relay Failure-as is
8. IMF RY02:1C71K14G	Active	Channel G Scram Relay Failure-as is
9. IMF RP03A	Active	ARI Division 1 Channel A Failure
10. IMF RP03D	Active	ARI Division 2 Channel B Failure
11. MRF TC06 BYPASS		Main Turbine Vibration Trip-Bypassed
12. IOR ZD1E51AS37INI	(None 0) OFF	RCIC Manual Initiation PB- OFF
13. TRG E3 ZD1C71F18A		
14. IMF CB01:1N27C0004	(E3 0)	MFP Breaker Trip
15. ROR infotags		

Assign the following Trigger: E1 – ZA1E22R0013C.GT.0.20 (DIV3 WATTS)

IC Setup #1 for JPMs B.1.a, B.1.b, B.1.d, and B.1.e

1. Reset to IC 25, perform switch check, and then go to RUN.
2. Insert Batch File 'LNC9901-JPM'.
3. Start HPCS DG per SOI-E22B, Section 4.5.
4. Verify the correct M14 valves are red tagged on H13-P800.
5. Trip the Main Turbine from P680 and allow it to coastdown.

Leave the simulator in freeze until after the examiner has read the Initial Conditions, Initiating Cue, and the candidate is ready to start (if possible).

During validation, the candidate was very cautious and used a large amount of time before he actually started rolling the Main Turbine.

Do not allow the Main Turbine Turning Gear to engage.

- a. Allow MSP and TGOP to auto start as the Main Turbine coasts down.
 - b. Open Generator breakers S610 and S611.
 - c. Open Generator field breaker and exciter breaker.
 - d. Open Main Transformer disconnect S112.
 - e. Open Generator disconnect S111.
 - f. Place Voltage Regulator in Manual.
 - g. Set both Auto and Manual Voltage Regulators to minimum.
 - h. Reset Lockout Relay 86G-1.
 - i. Reset Oscillograph alarm by toggling RF EG14 to 'ACK'.
6. Snap IC into any available IC for future re-use. Record IC # _____

IC Setup #2 for JPMs B.1.a, B.1.c, and B.1.e

1. Reset to IC 21, perform switch check, and then go to RUN.
2. Insert a manual reactor scram (and promptly reset).
3. Insert all SRMs and IRMs.
4. Allow reactor water level to slowly raise (CRDH going in with no RWCU blowdown flow).
5. Close the MSIVs per SOI-B21, Section 6.1, including the Main Steam Line Drain Valves
6. When REGTR ERROR lights comes on, then select C85 Channel B.
7. Verify the correct M14 valves are red tagged on H13-P800.
8. Acknowledge the CRD MECH TEMP HIGH alarm (RF RD32).
9. Verify the IV Checklist for SOI-B21, Section 4.3 is clean in the IV Checklist file cabinet.
10. Snap IC into any available IC for future re-use. Record IC # _____

IC Setup #3 for JPMs B.1.f, and B.1.g

1. Reset to IC 25, perform switch check, and then go to RUN.
2. Insert Batch File 'LNC9901-JPM'.
3. Trip the Main Turbine. Allow the TGOP and MSP to auto start.
4. Place the Reactor Mode Switch in SHUTDOWN.
5. Arm and depress all RPS Manual Scram PBs.
6. Arm and depress all ARI Manual initiation PBs.
7. Shutdown both Reactor Recirculation Pumps per SOI-B33, Section 6.1.
8. Snap IC into any available IC for future re-use. Record IC # _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

Facility: PERRY Task No: 208-515-02-01

Task Title: Shifting NCC Pumps JPM No: B.1.a

K/A Reference: 400000 A4.01 (3.1 / 3.0)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

Task Standard: Nuclear Closed Cooling (NCC) pumps are shifted from NCC Pumps A and B running to NCC Pumps A and C running in accordance with SOI-P43.

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: SOI-P43, Nuclear Closed Cooling System
Revision 6, PIC 10

Initial Conditions: NCC Pumps A and B are currently in operation.

Initiating Cue: The Unit Supervisor directs you to shift from NCC Pumps A and B running to NCC Pumps B and C running in accordance with SOI-P43.

NOTE: The Simulator Driver will be required to role-play as the Non-Licensed Operator for this JPM.
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Time Critical Task: YES/NO

X

Validation Time: 15 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. SOI-P43, Section 5.1, Shifting NCC Pumps, branches to SOI-P43, Section 4.2, Additional NCC Pump Startup.

STANDARD: Candidate correctly locates SOI-P43, Section 5.1, and branches to Section 4.2.

COMMENTS: 1. Candidate references SOI-P43, Section 5.1, which directs him to Section 4.2, Additional NCC Pump Startup.

2. **Candidate dispatches a Non-Licensed Operator to assist with NCC Pump C startup at this time (Precaution and Limitation 2.0.3)**

3. Simulator Driver will role-play as the Non-Licensed Operator for the entire evolution.

SAT / UNSAT START TIME: _____

* _____ 2. **Throttle NCC Pump C Disch, P43-F513C, 10% open.**

STANDARD: Non-Licensed Operator directed to throttle to 10% open NCC Pump C Disch, P43-F513C.

COMMENTS: 1. Candidate references SOI-P43, Section 4.2.

2. Valve is normally in the full open position when NCC Pump C is in Standby.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

 * 3. **Take NCC PUMP C, P43-C001C, control switch to START.**

STANDARD: Red light ON for NCC Pump C.

COMMENTS: 1. The candidate should observe initial pump starting current on meter P43-R352, NCC PUMP C AMPS.

 2. The candidate should observe pump discharge pressure (~130 psig) on meter P43-R026C, NCC PUMP C DISCH PRESSURE.

SAT / UNSAT

 * 4. **Open NCC Pump C Disch, P43-F513C.**

STANDARD: Non-Licensed Operator directed to fully open NCC Pump C Disch, P43-F513C.

COMMENTS: 1. The candidate should observe normal pump current (60-80 amps) on meter P43-R352, NCC PUMP C AMPS.

 2. The candidate should observe normal pump discharge pressure (96-125 psig) on meter P43-R026C, NCC PUMP C DISCH PRESSURE.

SAT / UNSAT

 5. Verify NCC HDR PRESSURE, P43-R221, has stabilized between 94 and 123 psig.

STANDARD: NCC HDR PRESSURE, P43-R221, has stabilized between 94 and 123 psig.

COMMENTS: 1. **Last step in Section 4.2 is not applicable.**

 2. Candidate exits SOI-P43, Section 4.2, and returns to Section 5.1, which directs him to SOI-P43, Section 6.1, NCC Pump Shutdown.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

 * 6. **Throttle NCC Pump A Disch, P43-F513A, closed until it is 2% open.**

STANDARD: Non-Licensed Operator directed to throttle to 2% open NCC Pump A Disch, P43-F513A.

COMMENTS: 1. Candidate references SOI-P43, Section 6.1.

 2. **The next step must be performed immediately since allowing an NCC Pump to run for any length of time with its discharge valve less than 10% open may result in pump damage.**

SAT / UNSAT

 * 7. **IMMEDIATELY take NCC PUMP A, P43-C001A, control switch to STOP.**

STANDARD: Green light ON for NCC Pump A.

COMMENTS: 1. **The Non-Licensed Operator must immediately report when NCC Pump A Disch, P43-F513A, is at 2% open.**

 2. The candidate should observe pump current decreases to zero amps on meter P43-R350, NCC PUMP A AMPS.

 3. The candidate should observe pump discharge pressure decreases to ~ 40 psig on meter P43-R026A, NCC PUMP A DISCH PRESSURE.

 40 psig is the static head of the NCC surge tank.

 4. The candidate should observe NCC header pressure (94-123 psig) on meter P43-R221, NCC HDR PRESSURE.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

 * 8. **Open NCC Pump A Disch, P43-F513A.**

STANDARD: Non-Licensed Operator directed to fully open NCC Pump A Disch, P43-F513A.

COMMENTS: Valve is normally in the Full open position when NCC Pump A is in Standby.

SAT / UNSAT STOP TIME:

TERMINATING CUE: NCC Pumps have been shifted from NCC Pumps A and B running to NCC Pumps B and C running.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.a**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.a

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.a
Attachment #1

Initial Conditions: **NCC Pumps A and B are currently in operation.**

Initiating Cue: **The Unit Supervisor directs you to shift from NCC
Pumps A and B running to NCC Pumps B and C
running in accordance with SOI-P43.**

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

Facility: PERRY Task No: 006-505-01-01
006-511-01-01
006-512-01-01
006-524-01-01
006-529-04-01
006-530-04-01

JPM No: B.1.b

Task Title: Parallel and Load HPCS DG (Faulted)

K/A Reference: 264000 A4.04 (3.7 / 3.7) K4.01 (3.5 / 3.7)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

Task Standard: The Division 3 Diesel Generator is shutdown (emergency shutdown) due to failure of Division 3 DG to automatically trip on high jacket water temperature in accordance with SOI-E22B.

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: SOI-E22B, Division 3 Diesel Generator
Revision 6, PIC 5

Initial Conditions: A post-maintenance test (PMT) is in progress for the Division 3 DG. The Division 3 DG remote startup per SOI-E22B, Section 4.5, Manual Startup from Standby Readiness, has been completed. A Non-Licensed Operator (NLO) is on-station locally monitoring the operation of the Division 3 Diesel Generator.

Initiating Cue: The Unit Supervisor directs you to parallel the Division 3 DG to Bus EH13 and load the Division 3 DG to 2 MW for 1 hour in accordance with SOI-E22B, Division 3 Diesel Generator.

Note: The candidate should be informed if the Evaluator will role play as the Non-Licensed Operator at the Div 3 DG, otherwise the candidate is expected to demonstrate normal plant communication practices.

Time Critical Task: YES/NO
☒ X

Validation Time: 20 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. Verify the Diesel Generator is running per Manual Startup from Standby Readiness.

STANDARD: Division 3 DG confirmed to be in operation.

COMMENTS: 1. Candidate references SOI-E22B, Section 5.1.
2. Startup of the Division 3-DG was reported as completed in the Initial Condition summary.
3. The **Evaluator** will role-play as the Non-Licensed Operator for the entire evolution.

SAT / UNSAT START TIME: _____

_____ 2. If the Diesel was started locally, place DIESEL CONTROL TRANSFER in REMOTE.

STANDARD: DIESEL CONTROL TRANSFER switch is in REMOTE.

COMMENTS: A remote startup of the Division 3-DG was reported in the Initial Condition summary; therefore, this step will not be applicable.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

 * 3. **Place SYNC SEL SWITCH in one of the following positions, as applicable:**

- a. TH1 – if Brkr EH1303; PREFERRED SOURCE BRKR, is closed.
- b. TH21 – if Brkr EH1302; ALTN PFD SOURCE BRKR, is closed.

STANDARD: SYNC SEL SWITCH is placed in the TH1 position, synchroscope is activated, synchroscope pointer begins rotating, and the synchroscope lights begin to flash on and off.

COMMENTS: The candidate should observe the current electrical lineup for Bus EH13 in order to determine which position the SYNC SEL SWITCH should be placed in.

SAT / UNSAT

 * 4. **Adjust DIESEL GEN VOLTAGE REGTR to match BUS EH13 VOLTS RUNNING, 1R22-R022C, with INCOMING, 1R22-R021C.**

STANDARD: BUS EH13 VOLTS RUNNING, 1R22-R022C, indication is matched with INCOMING, 1R22-R021C, indication using the DIESEL GEN VOLTAGE REGTR switch.

COMMENTS:

SAT / UNSAT

 * 5. **Adjust DIESEL GEN GOVERNOR such that SYNCHROSCOPE, 1E22-R022C, is moving slow in the FAST direction.**

STANDARD: SYNCHROSCOPE, 1E22-R022C, is moving slowly in the FAST (clockwise) direction.

COMMENTS: Candidate will have to significantly lower the speed of the Division 3-DG by holding the DIESEL GEN GOVERNOR switch in the LOWER position.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

 * 6. **With SYNCHROSCOPE, 1E22-R022C, moving slow in the FAST direction, at approximately the 2 minutes to 12 o'clock position, (synchroscope lights are the brightest), perform the following in succession:**

a. Take Brkr EH1301, DIESEL GEN BRKR, to close.

b. Take DIESEL GEN GOVERNOR to RAISE to achieve approximately 0.1 MW on DG LOADING MEGAWATTS, 1E22-R013C.

STANDARD: Red light ON for Brkr EH1301, DIESEL GEN BRKR, DG LOADING MEGAWATTS, 1E22-R013C, indicates 0.1 MW.

COMMENTS: Loading of Division 3-DG to 0.1 MW should be accomplished quickly in order to avoid a potential trip on reverse power.

SAT / UNSAT

 7. Place SYNC SEL SWITCH in OFF.

STANDARD: SYNC SEL SWITCH is in the OFF position, synchroscope is deactivated, and the synchroscope lights de-energize.

COMMENTS:

SAT / UNSAT

 * 8. **If it is desired to operate the Diesel Generator in parallel with the grid (for example, while performing loaded runs) exit this section and operate per Operations in Parallel with the Grid.**

STANDARD: Exit SOI-E22B, Section 5.1 and enter Section 5.3, Operations in Parallel with the Grid.

COMMENTS: Candidate references SOI-E22B, Section 5.3, Step 2 since the Division 3-DG is being operated remotely.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

 * 9. **Adjust Generator load using the DIESEL GEN GOVERNOR as necessary to achieve the desired DG LOADING MEGAWATTS, 1E22-R013C, maintaining between 0.1 and 2.8 MW.**

STANDARD: HPCS DG MW adjusted to 1 MW as indicated on meter DG LOADING MEGAWATTS, 1E22-R013C, using the DIESEL GEN GOVERNOR (2-minute wait period before next load adjustment).

COMMENTS: 1. Precaution and Limitation 2.0.13 directs loading/unloading the Division 3-DG in 1000 kW increments, with at least 2 minutes allowed for stabilization between each increment unless operating under emergency conditions, per an SVI, or per RSE direction.

2. Division 3 DG Trouble alarm will occur automatically when the candidate has loaded the Division 3-DG to approximately 0.95 MW.

SAT / UNSAT

 * 10. **Adjust Generator voltage using the DIESEL GEN VOLTAGE REGTR as necessary to obtain a 0.9 lagging power factor such that MVAR = MW x 0.5).**

STANDARD: HPCS DG MVAR adjusted to 500 MVAR, as indicated on meter DG LOADING MEGAVARS, 1E22-R012C, using the DIESEL GEN VOLTAGE REGTR.

COMMENTS: Candidate remains in SOI-E22B, Section 5.3, until it is desired to terminate parallel operations with the grid.

SAT / UNSAT

PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b

_____ 11. **Annunciator H13-P601-16 (D3), DIV 3 DIESEL GENERATOR TROUBLE is received.**

STANDARD: Consults ARI H13-P601-16 (D3), DIV 3 DIESEL GENERATOR TROUBLE, for expected operator actions to perform.

- COMMENTS:
1. There are no Immediate Operator Actions to be performed.
 2. The candidate contacts the Non-Licensed Operator to determine which local alarm has activated to cause the DIV 3 DIESEL GENERATOR TROUBLE alarm in the Control Room.
 3. The candidate should inform the Unit Supervisor of the 'unexpected' alarm.
 4. **As the Non-Licensed Operator, report that the local alarm at panel E22-P001 is HIGH WATER TEMPERATURE (window E1).**
 5. **If requested, as the Non-Licensed Operator, report that JACKET WATER OUT TEMPERATURE indicates 200 degrees F (and increasing) on the local Engine Monitoring Panel.**
 6. The candidate references ARI-E22-P001 (E1), HIGH WATER TEMPERATURE, for further guidance.
 7. **DG Trip Jacket Water Temp High alarm will occur automatically two minutes after the Div 3 Diesel Generator Trouble alarm is received.**

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

 * 12. **Annunciator H13-P601-16 (F2), DG TRIP JACKET WATER
TEMP HIGH, is received.**

STANDARD: Consults ARI H13-P601-16 (F2), DG TRIP JACKET WATER
TEMP HIGH, for expected operator actions to perform.

Concludes that the Division 3-DG should have tripped but did
not.

COMMENTS: 1. The candidate should inform the Unit Supervisor of the
 'unexpected' alarm.

 2. Immediate Operator Action is to shutdown DIESEL
 GENERATOR per SOI-E22B, if not required for adequate
 core cooling.

**3. As the Unit Supervisor, direct the
candidate to perform an Emergency
Shutdown of the Division 3-DG from
H13-P601 per SOI-E22B.**

4. Candidate enters SOI-E22B, Section 6.4, Emergency
Shutdown.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

 * 13. **For remote trip, at 1H13-P601:**

- a. Take Brkr EH1301, DIESEL GEN BRKR, to TRIP**
- b. Take DIESEL GENERATOR to STOP.**

STANDARD: Green light ON for Brkr EH1301, DIESEL GEN BRKR.

DIESEL GENERATOR switch placed in STOP momentarily
and then released back to AUTO.

- COMMENTS:**
- 1. The candidate should observe HPCS DG stator amps decrease to zero amps on meter 1E22-R015C, DG STATOR B ϕ AMPS.
 - 2. The candidate should observe DG stator volts decrease to zero volts on meter 1E22-R017C, DG STATOR A ϕ -B ϕ VOLTS.
 - 3. The candidate should observe DG field amps decrease to zero amps on meter 1E22-R010C, DG FIELD AMPS.
 - 4. The candidate should observe DG field volts decrease to zero volts on meter 1E22-R011C, DG FIELD VOLTS.
 - 5. The candidate should observe DG megawatts decrease to zero megawatts on meter 1E22-R013C, DG MEGAWATTS.
 - 6. The candidate should observe DG megavars decrease to zero megavars on meter 1E22-R012C, DG MEGAVARS
- 7. As the Unit Supervisor, inform the candidate another operator is being assigned to place the Division 3-DG in secured status.**

SAT / UNSAT STOP TIME:

TERMINATING CUES: Emergency shutdown of the Division 3 Diesel Generator is completed.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.b**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.b

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.b
Attachment #1**

- Initial Conditions:** A post-maintenance test (PMT) is in progress for the Division 3 DG. The Division 3 DG remote startup per SOI-E22B, Section 4.5, Manual Startup from Standby Readiness, has been completed. A Non-Licensed Operator (NLO) is on-station locally monitoring the operation of the Division 3 Diesel Generator.
- Initiating Cue:** The Unit Supervisor directs you to parallel the Division 3 DG to Bus EH13 and load the Division 3 DG to 2 MW for 1 hour in accordance with SOI-E22B, Division 3 Diesel Generator.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.c**

Facility: PERRY Task No: 239-527-01-01

JPM No: B.1.c

Task Title: Opening Main Steam Isolation Valves (MSIVs)

K/A Reference: 239001 A4.01 (4.2 / 4.0)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.c**

Task Standard: The MSIVs are opened in accordance with SOI-B21.

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: SOI-B21, Nuclear Steam Supply Shutoff, Automatic Depressurization, and Nuclear Steam Supply Shutoff Systems
Revision 6, PIC 11

Initial Conditions: The plant is in MODE 2. A surveillance error caused the MSIVs and inboard MSL drain valves to close 30 minutes ago. At the time of valve closure, reactor temperature was 360 degrees F. The NS4 System is back in Standby Readiness with the MSIV isolation signal reset per SOI-B21, Section 4.1, Nuclear Steam Supply Shutoff System Startup to Standby Readiness. The RFBP on the Low Flow Controller is available for reactor water level control. Main Condenser vacuum is being maintained by the Mechanical Vacuum Pumps. Reactor temperature is slowly heating up due to decay heat.

Initiating Cue: The Unit Supervisor directs you to open the Main Steam Isolation Valves (MSIVs) in accordance with SOI-B21.

Time Critical Task: YES/NO

X

Validation Time: 40 minutes

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PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. Verify NS4 in Standby Readiness.

STANDARD: NS4 confirmed to be in Standby Readiness per SOI-B21, Section 4.1.

COMMENTS: 1. Candidate references SOI-B21, Section 4.3.
 2. Nuclear Steam Supply Shutoff System Startup to Standby Readiness was reported as completed in the Initial Condition summary.

SAT / UNSAT START TIME: _____

_____ 2. Verify RPV Head Vent shifted to MSL A if a vacuum exists in the Main Condenser.

STANDARD: Confirm: Red light ON for B21-F005, RX HEAD TO MSL A VENT VALVE.
 Green light ON for B21-F002, RX HEAD TO DW FIRST VENT VALVE.
 Red and Green lights OFF for B21-F001, RX HEAD TO DW SECOND VENT VALVE.

COMMENTS: 1. RPV Head Vent was already lined to MSL A.
 2. B21-F001 is normally in the CLOSE position with its MCC disconnect OPEN.

SAT / UNSAT

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- * 3. If average RPV temperature, from ERIS or 1B33-R604, is greater than 200 degrees F, perform the following:
- a. Verify that a source of RPV makeup, RCIC or Feedwater is available.
 - b. Adjust the PRESS ST PT to 200-400 psig above reactor pressure not to exceed 920 psig (whichever is greater) to prevent opening Turbine Bypass Valves.

STANDARD: Average RPV temperature is confirmed to be greater than 200 degrees F and:

- a. Feedwater is confirmed to be available as a source of RPV makeup
- b. PRESS ST PT is properly adjusted to 200-400 psig above reactor pressure

- COMMENTS: 1. The availability of the Feedwater System was reported in the Initial Condition summary.
2. **NOTE: With RPV temperature > 200 degrees F, water in the RPV may flash into steam when MSIVs are opened. This has been observed to cause a 10" RPV level decrease with only a 10 psid differential.**
3. Candidate may use ICS P&ID B21/N11 (MN STM & DRNS) to assist with adjustment of PRESS ST PT. Screen provides a digital display of the Press Regulator Setpoint and Main Steam Line Sensed Pressure values.
3. Candidate observes that C85 Pressure Regulator Channel 'B' is in control.
4. **If candidate reports the REGTR ERROR to the Unit Supervisor, explain to the candidate that this is expected due to the MSIVs being closed and MSL 'sensed pressure' being downscale. The REGTR ERROR light will extinguish when the MSLs are re-pressurized (i.e., the MSIVs are re-opened.)**
5. Adjustment of the PRESS ST PT 200-400 psig above reactor pressure will prevent any Turbine Bypass Valve from opening when the MSIVs are opened (potential exists for a pressure surge).

SAT / UNSAT

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- _____ 4a. Open outboard MSIVs as follows:
- a. If RPV pressure is ≥ 15 psig, verify the inboard MSIVs closed.

STANDARD: a. Green light ON and control switch in CLOSE for:

- 1). MSL B INBD MSIV, 1B21-F022B
- 2). MSL D INBD MSIV, 1B21-F022D
- 3). MSL A INBD MSIV, 1B21-F022A
- 4). MSL C INBD MSIV, 1B21-F022C

COMMENTS:

SAT / UNSAT

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- _____ 4b. (Continued) Open outboard MSIVs as follows:
- b. Verify the following valves open:
- 1). MSL B SHUTOFF BEFORE SEAT DRN, 1N22-F420B
 - 2). MSL B SHUTOFF, 1N11-F020B
 - 3). MSL D SHUTOFF BEFORE SEAT DRN, 1N22-F420D
 - 4). MSL D SHUTOFF, 1N11-F020D
 - 5). MSL A SHUTOFF BEFORE SEAT DRN, 1N22-F420A
 - 6). MSL A SHUTOFF, 1N11-F020A
 - 7). MSL C SHUTOFF BEFORE SEAT DRN, 1N22-F420C
 - 8). MSL C SHUTOFF, 1N11-F020C

- STANDARD: b. Red light ON for:
- 1). MSL B SHUTOFF BEFORE SEAT DRN, 1N22-F420B
 - 2). MSL B SHUTOFF, 1N11-F020B
 - 3). MSL D SHUTOFF BEFORE SEAT DRN, 1N22-F420D
 - 4). MSL D SHUTOFF, 1N11-F020D
 - 5). MSL A SHUTOFF BEFORE SEAT DRN, 1N22-F420A
 - 6). MSL A SHUTOFF, 1N11-F020A
 - 7). MSL C SHUTOFF BEFORE SEAT DRN, 1N22-F420C
 - 8). MSL C SHUTOFF, 1N11-F020C

COMMENTS: All MSL SHUTOFF BEFORE SEAT DRN and MSL SHUTOFF valves are normally in the OPEN position.

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- * 4c. **(Continued) Open outboard MSIVs as follows:**
- c. Open the Outboard MSIVs by placing the following control switches in AUTO:**
- 1). MSL B OTBD MSIV, 1B21-F028B**
2). MSL D OTBD MSIV, 1B21-F028D
3). MSL A OTBD MSIV, 1B21-F028A
4). MSL C OTBD MSIV, 1B21-F028C

- STANDARD:** c. Red light ON and control switch in AUTO for:
- 1). MSL B OTBD MSIV, 1B21-F028B**
2). MSL D OTBD MSIV, 1B21-F028D
3). MSL A OTBD MSIV, 1B21-F028A
4). MSL C OTBD MSIV, 1B21-F028C

COMMENTS:

SAT / UNSAT

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- * 5a. **Open inboard MSIVs as follows:**
- a. **Hold INBD MSIV BEFORE SEAT WARMUP DRN, 1B21-F021, in CLOSE until closed.**
 - b. **Take MSL DRN & MSIV BYP INBD ISOL, 1B21-F016, to OPEN.**
 - c. **Take MSL DRN & MSIV BYP OTBD ISOL, 1B21-F019, to OPEN.**

- STANDARD:
- a. **Green light ON for INBD MSIV BEFORE SEAT WARMUP DRN, 1B21-F021.**
 - b. **Red light ON for MSL DRN & MSIV BYP INBD ISOL, 1B21-F016.**
 - c. **Red light ON for MSL DRN & MSIV BYP OTBD ISOL, 1B21-F019.**

- COMMENTS:
- 1. **RPV level will not reach Level 3 during this step.**
 - 2. **RPV level may reach Level 8 during this step.**

As the Unit Supervisor, inform the candidate that another Control Room Operator has been assigned to monitor RPV level and the Feedwater System.

- 3. **NOTE: At reactor pressures of > 150 psig, special restrictions are placed on the opening of 1B21-F016 and 1B21-F019. Refer to the Precautions and Limitations section for these restrictions.**

In accordance with Precaution and Limitation 9c:

Time = (RX/2) / (40 F/hour) where RX = temperature of the reactor at the time when the valves were closed.

Time = (360/2) / (40 F/hour) = (180/40) = 4.5 hours

Per the Initial Conditions, the valves were closed 30 minutes ago; therefore, they may be re-opened at this time.

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- * 5b. **(Continued) Open inboard MSIVs as follows:**
- d. If RPV pressure exceeds 15 psig, perform the following:**
- 1) Throttle MSIV BYP VLV FOR MST LINE WARM UP, 1B21-F020, as necessary to achieve a heatup rate of less than 100 degrees F/hr as determined on MSL A&B TEMP, 1N11-R065, and MSL C&D TEMP, 1N11-R060.**

STANDARD: d. Red and Green light ON for MSIV BYP VLV FOR MST LINE WARM UP, 1B21-F020.

- COMMENTS:** 1. **NOTE: When RPV pressure exceeds 15 psig, do not exceed 100 degree F/hr heat up rate.**
- MSL temperature will have only decreased from ~400 degrees F to ~ 320 degrees F since the MSIVs closed; therefore, this heat up rate limitation should not be exceeded.**
2. Candidate observes MSL temperature (~ 300-350 F) on recorders 1N11-R065, MSL A&B TEMP, and 1N11-R060, MSL C&D TEMP.

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- * 5c. **(Continued) Open inboard MSIVs as follows:**
- e. **When MAIN STEAM LINE PRESSURE A, B, C, or D; 1N11-R011A, B, C, or D; is within 50 psid of reactor pressure, perform the following:**
- 1) Open MSL B INBD MSIV, 1B21-F022B, by placing its control switch in AUTO.**
 - 2) Open MSL D INBD MSIV, 1B21-F022D, by placing its control switch in AUTO.**
 - 3) Open MSL A INBD MSIV, 1B21-F022A, by placing its control switch in AUTO.**
 - 4) Open MSL C INBD MSIV, 1B21-F022C, by placing its control switch in AUTO.**

- STANDARD: e. Red light ON for:
- 1). MSL B INBD MSIV, 1B21-F022B
 - 2). MSL D INBD MSIV, 1B21-F022D
 - 3). MSL A INBD MSIV, 1B21-F022A
 - 4). MSL C INBD MSIV, 1B21-F022C

- COMMENTS: 1. **NOTE: A differential pressure of 50 psid or less is required prior to opening the inboard MSIVs.**
2. Candidate observes MSL pressure on meters 1N11-R011A, B, C, and D, MAIN STEAM LINE PRESSURE A, B, C, and D.

SAT / UNSAT

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* 5d. (Continued) Open inboard MSIVs as follows:

- f. Hold MSIV BYP VLV FOR MST LINE WARMUP, 1B21-F020, in CLOSE until closed.
- g. Hold INBD MSIV BEFORE SEAT WARMUP DRN, 1B21-F021, in OPEN until open.

STANDARD: f. Green light ON for MSIV BYP VLV FOR MST LINE WARM UP, 1B21-F020.

g. Red light ON for INBD MSIV BEFORE SEAT WARMUP DRN, 1B21-F021.

COMMENTS:

SAT / UNSAT

* 6. **Adjust the PRESS ST PT to 150 psig or 25-50 psig above MN ST PRESS indication, 1C85-R715A or 1C85-R715B, for the channel selected, not to exceed 920 psig (whichever is greater).**

STANDARD: PRESS ST PT is properly adjusted to 25-50 psig above MN ST PRESS indication, 1C75-R715A.

COMMENTS: 1. Candidate observes that C85 Pressure Regulator Channel 'B' is in control.

2. Main Turbine Bypass Valves will remain closed because the PRESS ST PT is greater than reactor pressure.

3. **As the Unit Supervisor, inform the candidate that you will assign another Control Room Operator to monitor and control reactor pressure.**

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_____ 7. Perform independent verification of the required components.

STANDARD: Independent verification of the required components is performed.

COMMENTS: 1. Independent Verification form can be obtained from the file cabinet located by panel H13-P970.

2. As the Unit Supervisor, when the candidate has completed the first verification, then inform him that you will assign another Control Room Operator to complete the second verification.

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: Main Steam Isolation Valves (MSIVs) have been opened.

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VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.c

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.c
Attachment #1**

Initial Conditions: The plant is in MODE 2. A surveillance error caused the MSIVs and inboard MSL drain valves to close 30 minutes ago. At the time of valve closure, reactor temperature was 360 degrees F. The NS4 System is back in Standby Readiness with the MSIV isolation signal reset per SOI-B21, Section 4.1, Nuclear Steam Supply Shutoff System Startup to Standby Readiness. The RFBP on the Low Flow Controller is available for reactor water level control. Main Condenser vacuum is being maintained by the Mechanical Vacuum Pumps. Reactor temperature is slowly heating up due to decay heat.

Initiating Cue: The Unit Supervisor directs you to open the Main Steam Isolation Valves (MSIVs) in accordance with SOI-B21.

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JOB PERFORMANCE MEASURE B.1.d**

Facility: PERRY Task No: 068-502-01-01
068-503-01-01
068-508-04-01
068-524-04-01

JPM No: B.1.d

Task Title: Turbine Roll Following Turbine Trip
(Quick Restart) Faulted

K/A Reference: 245000 A3.02 (2.8 / 2.8) A4.06 (2.7 / 2.6)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

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Task Standard: The Main Turbine is manually tripped due to the failure of bearing #3 during a quick restart of the Main Turbine in accordance with SOI-N32/39/41/51.

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: SOI-N32/39/41/51, Main Turbine – Generator and Turning Gear System
Revision 0, PIC 22
ONI-N32, Turbine and/or Generator Trip
Revision 4, PIC 08

Initial Conditions: Plant startup is in progress. PTI-N32-P0003, Main Turbine Overspeed Test, was successfully completed 15 minutes ago. All actions for ONI-N32, Turbine and/or Generator Trip have been completed. ONI-N32 has been exited. The Main Turbine is coasting down. Plant Management has given permission to restart the Main Turbine.

Initiating Cue: The Unit Supervisor directs you to roll the Main Turbine to 1800 rpm in accordance with SOI-N32/39/41/51, Section 4.6, Turbine Roll Following Turbine Trip (Quick Restart). A Non-Licensed Operator is on station at the Turbine Front Standard to assist with the turbine roll.

NOTE: The Simulator Driver will be required to role-play as the Non-Licensed Operator for this JPM.

Time Critical Task: YES/NO

X

Validation Time: 40 minutes

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PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

- _____ 1. Verify the following initial conditions:
- a. The cause of the Turbine Trip has been determined and corrected.
 - b. Less than 3 hours have elapsed since the turbine trip and the turbine never went on the jack or stopped.
 - c. Turbine bearing oil temperature is greater than 90 degrees F as read on MAIN TURBINE LUBE OIL TEMP, 1N34-R135 (LUBE OIL FM COOLER).
 - d. Plant Management permission has been obtained to restart the Main Turbine.
 - e. Jack CLOSED light is on.
 - f. Motor Suction Oil Pump is operating and Main Shaft Suction Pressure is at least 25 psig as read at front standard on Shaft Driven Pmp Press Indicator, 1N34-R182.
 - g. Turbine bearing oil pressure is greater than 15 psig as read on TURBINE OIL PRESSURE BRG HD, 1N34-R121.
 - h. Local indication of oil flow at each journal bearing drain line.

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- STANDARD:
- a. Confirm cause of turbine trip was due to performance of PTI-N32-P0003, Turbine Overspeed Test, and has been positively corrected.
 - b. Confirm it has been less than 3 hours since the turbine trip and that the turbine never went on the jack or stopped as observed by Red light OFF above Main Turbine Turning Gear control switch 1N39-C002 and Main Turbine speed is > 0 rpm as indicated on meter N21-R713, ICS BOP Screen 'Main Turbine', or ICS BOP Screen 'Main Turbine Bearings'.
 - c. Confirm Turbine bearing oil temperature is greater than 90 degrees F as read on MAIN TURBINE LUBE OIL TEMP, 1N34-R135 (LUBE OIL FM COOLER).
 - d. Confirm Plant Management permission has been obtained to restart the Main Turbine.
 - e. Confirm Green light ON for Jack CLOSED light.
 - f. Confirm Red light ON for Motor Suction Oil Pump and Main Shaft Suction Pressure is at least 25 psig as read at front standard on Shaft Driven Pmp Press Indicator, 1N34-R182.
 - g. Confirm Turbine bearing oil pressure is greater than 15 psig as read on TURBINE OIL PRESSURE BRG HD, 1N34-R121.
 - h. Confirm local indication of oil flow at each journal bearing drain line.

- COMMENTS:
- 1. Candidate references SOI-N32/39/41/51, Section 4.6.
 - 2. Initial Condition a, b, and d was reported as completed in the Initial Condition summary.
 - 3. Simulator Driver will role-play as the Non-Licensed Operator for the entire evolution.
 - 4. **Non-Licensed Operator, when requested, will report that Main Shaft Suction Pressure is 27 psig as read on Shaft Driven Pmp Press Indicator, 1N34-R182.**
 - 5. **Non-Licensed Operator, when requested, will report that there is local indication of oil flow at each journal bearing drain line.**

SAT / UNSAT START TIME: _____

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- _____ 2. Station an operator at the Turbine Front Standard in communication with the Control Room operator.

STANDARD: Confirm an operator is stationed at the Turbine Front Standard in communication with the control room operator.

- COMMENTS:**
1. This was reported as completed in the Initial Condition summary.
 2. It is an Operations expectation to monitor the startup of important components in the field; therefore it is an equipment safety step.

SAT / UNSAT

- _____ 3. Press the TURBINE-TRIP button and verify the MECHANICAL TRIPPED and ELECTRICAL TRIPPED lights are on.

STANDARD: Press the Red TURBINE-TRIP button and confirm the Red lights ON for the MECHANICAL TRIPPED and ELECTRICAL TRIPPED lights.

- COMMENTS:**
1. The Main Turbine is already in the tripped condition; therefore, depressing the TURBINE TRIP button will have no effect.
 2. The candidate may observe, using the valve position meters that the TSVs, TCVs, IVs, and ISVs are in the CLOSE position.

SAT / UNSAT

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- * 4. Press and hold the TURBINE-RESET button until the RESET MECHANICAL and RESET ELECTRICAL lights are on, then release.**

STANDARD: Press and hold the black TURBINE-RESET button and verify the Green lights ON for the RESET MECHANICAL and RESET ELECTRICAL lights, then release the TURBINE-RESET button.

COMMENTS: 1. The RESET ELECTRICAL light will cycle several times before it finally remains on, then the candidate will release the TURBINE-RESET button.

- 2. If the candidate releases the TURBINE-RESET button prematurely, then the candidate may need to re-perform this step in order to accomplish the reset of the Main Turbine.**

As the Unit Supervisor, direct the candidate to re-perform the step and continue to press and hold the TURBINE-RESET button until the RESET MECHANICAL and RESET ELECTRICAL lights remain on.

3. The candidate may observe, using the valve position meters that the TSVs, TCVs, and IVs are in the CLOSE position and the ISVs are in the OPEN position.
4. The candidate may announce that alarm RPS TURB CONT V FAST CLOSE (H13-P680-5 (A5)) cleared (expected).
5. The candidate may observe the STARTING RATE-SLOW White light come on.

SAT / UNSAT

- * 5. Trip the Turbine Emergency Trip System (ETS) using the Manual Trip Handle (MTH) at the Turbine Front Standard.**

STANDARD: Contacts the Non-Licensed Operator to direct him to trip the Turbine Emergency Trip System (ETS) using the Manual Trip Handle (MTH) at the Turbine Front Standard.

COMMENTS: Simulator Driver will toggle RF TC05 to TRIP in order to trip the Main Turbine locally.

SAT / UNSAT

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<hr/>	* 6.	Verify the MECHANICAL TRIPPED and ELECTRICAL TRIPPED lights are on.
STANDARD:		Verify the Red lights ON for the MECHANICAL TRIPPED and ELECTRICAL TRIPPED lights.
COMMENTS:		<ol style="list-style-type: none">1. The candidate may observe, using the valve position meters that the TSVs, TCVs, IVs, and ISVs are in the CLOSE position.2. The candidate may announce that alarm RPS TURB CONT V FAST CLOSE (H13-P680-5 (A5)) annunciated (expected).3. The candidate may observe the STARTING RATE-SLOW White light go off.
SAT / UNSAT		
<hr/>		
<hr/>	* 7.	Reset the Manual Trip Handle.
STANDARD:		Contacts the Non-Licensed Operator to direct him to reset the Manual Trip Handle.
COMMENTS:		<ol style="list-style-type: none">1. Simulator Driver will toggle RF TC05 to RESET in order to reset the Manual Trip Handle. This action does not physically reset the Main Turbine; it only resets the Manual Trip Handle.2. Non-Licensed Operator will report that the Manual Trip Handle is reset.
SAT / UNSAT		
<hr/>		
<hr/>	* 8.	Turn the LOAD LIMIT SET potentiometer fully counter clockwise then position it to 10.
STANDARD:		Turns the LOAD LIMIT SET potentiometer fully counter clockwise and then positions it to 10.
COMMENTS:		Turning the LOAD LIMIT SET potentiometer fully counter clockwise before positioning it to 10 ensures that any remaining Load Limit Setbacks are reset.
SAT / UNSAT		

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_____ 9. Adjust the MAIN TURBINE LUBE OIL TEMP CONTROL, 1P41-R032, to 115 degrees F.

STANDARD: Confirms the MAIN TURBINE LUBE OIL TEMP CONTROL, 1P41-R032, is set to 115 degrees F.

COMMENTS: The MAIN TURBINE LUBE OIL TEMP CONTROL, 1P41-R032, is currently set to 115 degrees F.

SAT / UNSAT

_____ * 10. **Press and hold the TURBINE-RESET button until the RESET MECHANICAL and RESET ELECTRICAL lights are on, then release.**

STANDARD: Press and hold the black TURBINE-RESET button and verify the Green lights ON for the RESET MECHANICAL and RESET ELECTRICAL lights, then release the TURBINE-RESET button.

COMMENTS: 1. The RESET ELECTRICAL light will cycle several times before it finally remains on, then the candidate will release the TURBINE-RESET button.

2. **If the candidate releases the TURBINE-RESET button prematurely, then the candidate may need to re-perform this step in order to accomplish the reset of the Main Turbine.**

As the Unit Supervisor, direct the candidate to re-perform the step and continue to press and hold the TURBINE-RESET button until the RESET MECHANICAL and RESET ELECTRICAL lights remain on.

3. The candidate may observe, using the valve position meters that the TSVs, TCVs, and IVs are in the CLOSE position and the ISVs are in the OPEN position.

4. The candidate may announce that alarm RPS TURB CONT V FAST CLOSE (H13-P680-5 (A5)) cleared (expected).

5. The candidate may observe the STARTING RATE-SLOW White light come on.

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_____ 11. Verify the following:

- a. Main Stop Valves are closed.
- b. Turbine Control Valves are closed.
- c. Intercept Valves are closed.
- d. Intermediate Stop Valves are open.
- e. Exhaust Hood Sprays are available.

STANDARD: a. The Main Stop Valves are verified closed by observing position indication (0%) on meters N32-R704A-D.

 b. The Turbine Control Valves are verified closed by observing position indication (0%) on meters N32-R706A-D.

 c. The Intercept Valves are verified closed by observing position indication (0%) on meters N32-R709A-F.

 d. The Intermediate Stop Valves are verified open by observing position indication (100%) on meters N32-R708A-F.

 e. Directs the Non-Licensed Operator to verify that Exhaust Hood Sprays are available or asks the Unit Supervisor if Exhaust Hood Sprays are available.

COMMENTS: **As the Non-Licensed Operator or the Unit Supervisor, cue the candidate that Exhaust Hood Sprays are available.**

SAT / UNSAT

_____ 12. Reset the Standby System by pressing the STANDBY SIGNAL MATCH-RESET button. The STANDBY TRIPPED light should go off.

STANDARD: Resets the Standby System by pressing the STANDBY SIGNAL MATCH-RESET button. Verifies the Red light OFF for the STANDBY TRIPPED light.

COMMENTS: The Standby System is already in the RESET condition with the Red STANDBY TRIPPED light OFF.

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_____ 13. Reset the First Hit Detector on EHC Cabinet, 1H13-P821, by pressing both FIRST HIT RESET buttons simultaneously and observing all tripped conditions go off.

STANDARD: Resets the First Hit Detector on EHC Cabinet, 1H13-P821, by pressing both FIRST HIT RESET buttons simultaneously and observing all tripped conditions go off.

COMMENTS: **1. Panel 1H13-P821 does not exist in the simulator. Candidate is expected to simulate his presence at this panel by going to the Simulator Instructor Station and requesting that the First Hit Detector be reset.**

A Remote Function does not exist to reset the First Hit Detector.

2. Simulator Driver will cue the candidate that the First Hit Detector on EHC Cabinet, 1H13-P821 has been reset and all tripped conditions are off.

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_____ 14. On the Turbine Supervisory Recorder Panel, 1H13-P823, place the TURBINE BEARING VIBRATION recorder, 1N31-R002, to FAST.

STANDARD: The TURBINE BEARING VIBRATION recorder, 1N31-R002, is placed in FAST at Turbine Supervisory Recorder Panel, 1H13-P823.

COMMENTS:

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- _____ 15. Observe the following vibration limitations for all journal bearings during rolling:

Speed	Acceptable _____ mils	Trip IMMEDIATELY if mils is exceeded	Trip if _____ mils is exceeded for _____ mins.	
LESS THAN 800 RPM	NA	8	NA	
800-1400 RPM	7	12	10	2 mins
1400-1800 RPM	5	12	10	15 mins

STANDARD: Observes the vibration limitations for all journal bearing during rolling.

- COMMENTS:**
1. This step is more like a Note or Caution statement because there is no action to perform.
 2. **The vibration limits in this step will become critical when the actual turbine roll commences.**

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- * 16. Establish the starting rate as follows:
- a. Shell temperature greater than 350 degrees F; press the STARTING RATE-FAST button.
 - b. Shell temperature between 250 degrees F and 350 degrees F, press the STARTING RATE-MEDIUM button.
 - c. Observe the selected light comes on.
- STANDARD: STARTING RATE-MEDIUM button is selected with White light ON based on shell temperature.
- COMMENTS: 1. The candidate may observe shell temperature on Main Turbine Temperature & Expansion Recorder, 1N31-R001, Point 4, at back panel 1H13-P823, or on ICS BOP Screen 'Main Turbine'.
2. NOTE: The starting rate default is SLOW.
3. The candidate determines that shell temperature is ~ 307 degrees F, the correct starting rate is MEDIUM.

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17. During turbine acceleration, locally monitor the turbine for adequate oil flow from the journal bearings, unusual noises and rubbing.
- STANDARD: Contacts the Non-Licensed Operator to locally monitor the turbine for adequate oil flow from the journal bearings, unusual noises and rubbing during turbine acceleration.
- COMMENTS: **Simulator Driver – insert malfunction TC04C at 100% (bearing #3 metal failure) and verify that Remote Function TC06 is in BYPASS (high vibration trip).**

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- * 18. Determine the initial speed as follows:**
- a. If turbine speed is less than 100 rpm, press the SPEED SET RPM – 100 button. Continue to Step 19.**
 - b. If turbine speed is less than 1500 rpm:**
 - 1). Read the following temperatures from Generator Temp Recorder, 1N41-R110, on Electrical Recorder Panel, 1H13-P811:**

Point 8 – HOT AIR TO ALT CLR No. 1
Point 9 – HOT AIR TO ALT CLR No. 2
Point 18 – HOT AIR FROM COLLECTOR
 - 2). If Point 18 and the average of Points 8 and 9 are greater than 68 degrees F and MAIN LUBE OIL TEMP (FM COOLER), is greater than 100 degrees F, press the SPEED SET RPM – 1800 button.**
 - 3). If the limits in 2) are not met, press the SPEED SET RPM – 1500 button.**
 - c. If turbine speed is greater than 1500 rpm, press the SPEED SET RPM – 1800 button.**

STANDARD: Proper SPEED SET RPM is selected with White light ON based on actual turbine speed and generator temperature.

COMMENTS:

- 1. The candidate may observe turbine rpm on meter 1N32-R713 or on ICS BOP Screen 'Main Turbine', or ICS BOP Screen 'Main Turbine Bearings'.**
- 2. Points 8 and 9 should read ~71 degrees F, Point 18 should read ~ 72 degrees F, and MAIN LUBE OIL TEMP (FM COOLER) is > 100 degrees F; therefore, the candidate should select 1800 RPM based on meeting the temperature criteria above.**

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- _____ 19. Observe the following:
- a. SPEED SET RPM – CLOSED VALVES light goes off.
 - b. SPEED SET RPM – 100 (1500) (1800) light comes on for the selected speed.
 - c. SPEED MONITORING – SPEED INCREASING light comes on.
 - d. MAIN STOP VALVES open.
 - e. COMBINED INTERMEDIATE VALVES open.
 - f. TURBINE CONTROL VALVES No. 1 thru No. 4 open.

- STANDARD:
- a. SPEED SET RPM – CLOSED VALVES Green light OFF.
 - b. SPEED SET RPM – 100 (1500) (1800) White light ON for the selected speed.
 - c. SPEED MONITORING – SPEED INCREASING White light On.
 - d. Main STOP VALVES are verified open by observing position indication (100%) on meters N32-R704A-D.
 - e. COMBINED INTERMEDIATE VALVES are verified open by observing position indication (100%) on meters N32-R708A-F and N32-R709A-F.
 - f. TURBINE CONTROL VALVES are verified open by observing position indication on meters N32-R706A-D.

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- COMMENTS:
1. As turbine speed increases, bearing #3 metal temperature and vibration will begin to increase. All other bearings will indicate normal temperature and vibration.
 2. **It is expected that the following alarms will occur prior to completing the evolution:**
 - **MN TURB BRG METAL TEMP P823 (H13-P680-7-B9)**
 - **TURB/GEN/EXCTR VIB P823 (H13-P680-7-B13)**

Proceed to Steps 28 and 29 to evaluate the candidate's response to these alarms.

Candidate may also decide to trip the Main Turbine before the vibration limits specified in Step 15 are exceeded based on operator judgement. Proceed directly to Step 30.

3. The candidate may announce that alarm RPS TURB STOP VLV CLOSURE (H13-P680-5 (A4)) cleared (expected).
4. The opening of Turbine Control Valves No. 1 – No.4 may not be perceptible on meters N32-R706A-D. The candidate may observe Turbine Control Valve position using ICS BOP Screen 'Main Turbine'.

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_____ 20. Monitor turbine bearing temperatures on TURBINE BEARING METAL TEMPERATURE, N31-R005, on 1H13-P823.

STANDARD: Monitors turbine bearing temperatures on TURBINE BEARING METAL TEMPERATURE, N31-R005, on 1H13-P823.

Reports that Bearing #3 metal temperature is increasing.

COMMENTS: 1. An increase in Bearing #3 vibration and oil temperature from bearing outlet can also be noted on ICS BOP Screen 'Main Turbine Bearings'.
2. From this step on, candidate should be making periodic reports to the Unit Supervisor and asking for direction on whether to continue the turbine roll.

It is recommended that the Examiner wait until at least the MN TURB BRG METAL TEMP P823 alarm annunciates before contemplating any orders to trip the Main Turbine.

3. When MN TURB BRG METAL TEMP P823 alarm annunciates, proceed to Step 28.

Steps 21-27 can be marked as N/A if a particular step was not performed.

4. If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).

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- _____ 21. On Process Computer MAIN CONDENSER/TURBINE EXHAUST Screen, confirm EXH HOOD TEMPS are less than 175 degrees F.
- STANDARD: Confirm EXH HOOD TEMPS are less than 175 degrees F. on Process Computer MAIN CONDENSER/TURBINE EXHAUST Screen.
- COMMENTS: 1. Exhaust Hood temperatures will show no significant increase.
2. If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).

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- * _____ 22. With turbine speed greater than 100 RPM, reset the AUXILIARY SPEED SIGNAL on P821 by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously.
- STANDARD: Resets the AUXILIARY SPEED SIGNAL on EHC Cabinet, 1H13-P821, by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously.
- COMMENTS: 1. Panel 1H13-P821 does not exist in the simulator. Candidate is expected to simulate his presence at this panel by going to the Simulator Instructor Station and requesting that the AUXILIARY SPEED SIGNAL be reset by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously.
2. Simulator Driver will toggle RF TC07 to RESET in order to reset the AUXILIARY SPEED SIGNAL.
3. Simulator Driver will cue the candidate that the AUXILIARY SPEED SIGNAL on EHC Cabinet, 1H13-P821, has been reset.
4. The candidate may observe that the Red ELECTRICAL MALFUNCTION light is OFF on panel 1H13-P680.
5. If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).

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- * 23. When turbine RPM is at the selected speed, the SPEED MONITORING – AT SET SPEED light should come on and the SPEED INCREASING light should go off.**
- a. If operating at 1500 RPM, select 1800 RPM.**
 - 1). Average HOT TO COOLER No. 1 and No. 2 temperature is greater than 68 degrees F, and**
 - 2). HOT AIR FROM COLLECTOR temperature is greater than 68 degrees , and**
 - 3). MAIN TURBINE LUBE OIL TEMP (LUBE OIL FM COOLER) temperature is greater than 100 degrees F.**
 - b. If operating at 100 RPM, return to Step 18.b.**
- STANDARD:** When the turbine is at the previously selected speed, the next proper SPEED SET RPM is selected with White light ON based on actual turbine speed and generator temperature.
- COMMENTS:**
- 1. The candidate observes Red light ON for the SPEED MONITORING – AT SET SPEED and White light OFF for the SPEED INCREASING.**
 - 2. The candidate may observe turbine rpm on meter 1N32-R713 or on ICS BOP Screen 'Main Turbine', or ICS BOP Screen 'Main Turbine Bearings'.**
 - 3. Points 8 and 9 will read ~ 70 degrees F and Point 18 will read ~ 70 degrees F, therefore, the candidate should select 1800 RPM, if not previously selected.**
 - 4. There is a typo in Step 22.a.2) of the SOI – the step should read HOT AIR FROM COLLECTOR vice HOT AIR ALTERNATOR COOLER. (Ref: see Step 25 in Section 4.4)**
 - 5. If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).**

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 * 24. **At 1800 RPM, reset the EHC Power Monitor by pressing the PMG-RESET button on P821. Confirm that the PMG IN CONTROL light is on.**

STANDARD: At 1800 RPM, resets the EHC Power Monitor by pressing the PMG RESET button on panel 1H13-P821. Confirms that the PMG IN CONTROL light is on.

COMMENTS: 1. **Panel 1H13-P821 does not exist in the simulator. Candidate is expected to simulate his presence at this panel by going to the Simulator Instructor Station and requesting that the EHC POWER MONITOR be reset by pressing the PMG RESET button.**

A Remote Function does not exist to reset the EHC Power Monitor.

 2. **Simulator Driver will cue the candidate that the EHC Power Monitor on EHC Cabinet, 1H13-P821, has been reset and the PMG IN CONTROL light is on.**

 3. **If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).**

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- * 25. Reset the POWER SYSTEM MALFUNCTION and SYSTEM FAULT lights by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously on P821.**
- STANDARD:** At 1800 RPM, resets the POWER SYSTEM MALFUNCTION and SYSTEM FAULT lights on EHC Cabinet, 1H13-P821, by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously.
- COMMENTS:** **1. Panel 1H13-P821 does not exist in the simulator. Candidate is expected to simulate his presence at this panel by going to the Simulator Instructor Station and requesting that the POWER SYSTEM MALFUNCTION and SYSTEM FAULT lights be reset by pressing both ELECTRICAL MALFUNCTION RESET buttons simultaneously.**
- 2. Simulator Driver will toggle RF TC07 to RESET in order to reset the POWER SYSTEM MALFUNCTION and SYSTEM FAULT lights.**
- 3. Simulator Driver will cue the candidate that the POWER SYSTEM MALFUNCTION and SYSTEM FAULT lights have been reset and all trip and malfunction status lights on panel 1H13-P821 are off.**
- 4. If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).**
- 5. The candidate may observe that the Red SYSTEM FAULT light is off on panel H13-P680.**

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_____ 26. Shift the TURBINE BEARING VIBRATION recorder, N31-R002, on P823 to SLOW.

STANDARD: The TURBINE BEARING VIBRATION recorder, N31-R002, on P823 is shifted to SLOW.

COMMENTS: **If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).**

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_____ 27. Perform Resetting the Generator Gas Monitoring System section per this SOI.

STANDARD: The Generator Gas Monitoring System is reset.

COMMENTS:

1. Candidates references Section 7.12 of SOI-N32/39/41/51.
2. Resetting the Generator Gas Monitoring System cannot be performed in the simulator.
3. **Panel 1H13-P864 does not exist in the simulator. Candidate is expected to simulate his presence at this panel by going to the Simulator Instructor Station and requesting that the Generator Gas Monitoring System be reset.**
4. **Simulator Driver will override alarm H13-P680-9 (E3) to OFF to reset the Generator Gas Monitoring System.**
5. **Simulator Driver will cue the candidate that the Generator Gas Monitoring System has been reset.**
6. The candidate may announce that the GENERATOR CORE MON alarm is clear on panel 1H13-P680.
7. **If requested, the Non-Licensed Operator can report that oil flow from the #3 journal bearing is decreasing but has not stopped (reason unknown).**

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 * 28. **Annunciator H13-P680-7 (B9), MN TURB BRG METAL
TEMP P823 alarm is received.**

STANDARD: Consults ARI H13-P680-7 (B9), MN TURB BRG METAL TEMP
P823, for expected operator actions to perform.

COMMENTS: 1. The candidate should inform the Unit Supervisor of the
 'unexpected' alarm.

 2. There are no Immediate Operator Actions to be performed.

 3. If requested, the Non-Licensed Operator can report that
 oil flow from the #3 journal bearing is decreasing but
 has not stopped (reason unknown).

 4. The candidate may observe #3 journal bearing
 temperature is greater than 225 degrees F on TURBINE
 BEARING METAL TEMPERATURE recorder N31-R005,
 at panel H13-P823.

 5. The candidate may decide to trip the Main
 Turbine before the vibration limits
 specified in Step 15 are exceeded.

**As the Unit Supervisor, cue the candidate
to perform the Immediate Actions of ONI-
N32, Turbine and/or Generator Trip.**

Proceed to Step 30.

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 * 29. **Annunciator H13-P680-7 (B13), TURB/GEN/EXCTR VIB
P823 alarm is received.**

STANDARD: Consults ARI H13-P680-7 (B13), TURB/GEN/EXCTR VIB
P823, for expected operator actions to perform.

Concludes that the Main Turbine should have tripped but did
not.

COMMENTS: 1. **The candidate should inform the Unit Supervisor of the
‘unexpected’ alarm.**

2. **The candidate should trip the Main Turbine without
direction from the Unit Supervisor.**

3. **If the candidate asks for guidance from
the Unit Supervisor, then the Unit
Supervisor should ask the candidate for
recommendation(s).**

Proceed to Step 30.

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- * 30. **Trip the main turbine by depressing the TURBINE TRIP pushbutton and verify the following:**
- a. **MAIN STOP VALVES, CONTROL VALVES, and COMBINED INTERMEDIATE VALVES shut.**
 - b. GEN BRKR S-610-PY-TIE and S-611-PY-TIE trip.
 - c. GEN FIELD BREAKER trips.

STANDARD: Press the Red TURBINE-TRIP button and verify:

- a. MAIN STOP VALVES, CONTROL VALVES, and COMBINED INTERMEDIATE VALVES shut.
- b. GEN BRKR S-610-PY-TIE and S-611-PY-TIE are tripped.
- c. GEN FIELD BREAKER is tripped.

COMMENTS:

- 1. Candidate enters ONI-N32, Turbine and/or Generator Trip.
- 2. The candidate observes, using the valve position meters that the TSVs, TCVs, IVs, and ISVs are in the CLOSE position.
- 3. The candidate may observe the Red lights ON for the MECHANICAL TRIPPED and ELECTRICAL TRIPPED lights.
- 4. **GEN BRKR S-610-PY-TIE and S-611-PY-TIE were not required to trip because they were already open.**
- 5. **GEN FIELD BREAKER was not required to trip because it was already open.**
- 6. The candidate may announce that alarm RPS TURB STOP VLV CLOSURE (H13-P680-5 (A4)) annunciated (expected).
- 7. The candidate may announce that alarm RPS TURB CONT V FAST CLOSE (H13-P680-5 (A5)) annunciated (expected).

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_____ 31. When the turbine is tripped, confirm the station loads are supplied by the Startup Transformer.

STANDARD: Confirms the station loads are supplied by the Startup Transformer.

COMMENTS: 1. Station loads did not transfer because they were already on the Startup Transformer.

2. The candidate reports that the Immediate Actions of ONI-N32 are completed.

3. **As the Unit Supervisor, inform the candidate that another operator will be assigned to monitor the turbine shutdown.**

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: The Main Turbine is manually tripped due to the failure of bearing #3 during a quick restart of the Main Turbine.

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VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.d

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.d
Attachment #1**

Initial Conditions: Plant startup is in progress. PTI-N32-P0003, Main Turbine Overspeed Test was successfully completed 15 minutes ago. All actions for ONI-N32, Turbine and/or Generator Trip have been completed. ONI-N32 has been exited. The Main Turbine is coasting down. Plant Management has given permission to restart the Main Turbine.

Initiating Cue: The Unit Supervisor directs you to roll the Main Turbine to 1800 rpm in accordance with SOI-N32/39/41/51, Section 4.6, Turbine Roll Following Turbine Trip (Quick Restart). A Non-Licensed Operator is on station at the Turbine Front Standard to assist with the turbine roll.

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Facility: PERRY Task No: 315-501-01-01

Task Title: Startup to Intermittent Mode JPM No: B.1.e

K/A Reference: 288000 A4.01 (3.1 / 2.9)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

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Task Standard: **Containment Vessel and Drywell Purge (CVDWP)
Train 'A' is operating in the Intermittent Mode in
accordance with SOI-M14.**

Required Materials: **None**

General References: **SOI-M14, Containment Vessel and Drywell Purge
System (CVDWP)
Revision 11, PIC 7**

Initial Conditions: **Plant startup is in progress. Primary Containment
integrity is set. The drywell purge supply
ducting is filled. Health Physics has requested the
startup of the M14 System for 'air quality
considerations for personnel entry'. The expected
duration of M14 operation will be 2 hours. The
time is 1300.**

Initiating Cue: **The Unit Supervisor directs you to startup M14
Train 'A' in the Intermittent mode in accordance
with SOI-M14.**

**Note: The candidate should be informed if the Evaluator
will role play as Chemistry, Health Physics, and the Non-
Licensed Operator, otherwise the candidate is expected
to demonstrate normal plant communication practices.**

Time Critical Task: **YES/NO**

X

Validation Time: **15 minutes**

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PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. If outside air temperature is ≤ -20 °F, do not perform this section.

STANDARD: Verifies outside ambient air temperature is > -20 °F and proceeds with task.

COMMENTS: 1. Candidate references SOI-M14, Section 4.1.
2. Candidate should reference either the ICS BOP 'Meteorological Data' or ICS Group Point Display '@METDAT' screens to obtain current outside air temperature.
3. The **Evaluator** will role-play as the Non-Licensed Operator, Chemistry Unit, and Health Physics Unit for the entire evolution.

SAT / UNSAT START TIME: _____

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- _____ 2. If in MODES 1, 2, or 3, verify the drywell purge supply ducting is filled.

STANDARD: Confirms the drywell purge supply ducting is filled.

- COMMENTS: 1. The fill of the drywell purge supply ducting was reported as completed in the Initial Condition summary.
2. Filling of the drywell purge supply ducting is a Tech Spec requirement in MODES 1, 2, and 3.

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- _____ 3. If either the containment equipment hatch is removed or a containment personnel air lock has been overridden with both doors open, open Breaker #27 in K-1-D, 1R25-S053, to place the supply fans in flow control mode.

STANDARD: Confirms the containment equipment hatch is not removed and the containment personnel air locks have not been overridden with both doors open.

- COMMENTS: 1. Primary Containment integrity was reported as set in the Initial Condition summary.

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- _____ 4. Notify the Chemistry Unit to sample per REC-0104.

STANDARD: Contacts the Chemistry Unit to inform them of impending startup of M14 Train A in the Intermittent mode and the need to sample per REC-0104.

- COMMENTS: 1. Sample does not need to be completed before the system startup is performed. However, the sample must be completed before the system can be shutdown.
2. This sample is an ODCM requirement; therefore it is important that the Chemistry Unit be notified.

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_____ 5. Notify the Health Physics Unit of the expected duration of M14 operation.

STANDARD: Contacts the Health Physics Unit to inform them that expected duration of M14 operation will be 2 hours.

COMMENTS: It is a good operating practice to notify the Health Physics Unit whenever any type of Containment evolution is performed which may cause radiological conditions to change.

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_____ * 6. **Verify system fan settings adjusted per Attachment 8, Intermittent and Refuel Mode Fan Settings.**

STANDARD: Contacts Non-Licensed Operator to direct him to verify the M14 Train A fan settings are adjusted to the proper Intermittent Mode fan settings per Attachment 8, Intermittent and Refuel Mode Fan Settings.

COMMENTS: The Simulator IC already contains the correct Intermittent Mode flow settings. However, if the candidate asks the Non-Licensed Operator for the specific M14 Train A flow settings, they are:

M14 Train A Supply Fan	5,250 cfm
M14 Train A Exhaust Fan	5,500 cfm

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- * 7. **Take the following valve control switches to OPEN:**
- a. **CNTMT PURGE EXH BYP SECOND ISOL DMPR,
1M14-F200**
 - b. **CNTMT PURGE EXH BYP FIRST ISOL DMPR,
1M14-F205**
 - c. **CNTMT & DW EXH OTBD ISOL DMPR,
1M14-F090**
 - d. **CNTMT PURGE SUPP BYP FIRST ISOL DMPR,
1M14-F190**
 - e. **CNTMT PURGE SUPP BYP SECOND ISOL DMPR,
1M14-F195**
 - f. **CNTMT PURGE SUPP OTBD ISOL DMPR,
1M14-F040**

STANDARD: Red light ON for:

- a. CNTMT PURGE EXH BYP SECOND ISOL DMPR,
1M14-F200
- b. CNTMT PURGE EXH BYP FIRST ISOL DMPR,
1M14-F205
- c. CNTMT & DW EXH OTBD ISOL DMPR,
1M14-F090
- d. CNTMT PURGE SUPP BYP FIRST ISOL DMPR,
1M14-F190
- e. CNTMT PURGE SUPP BYP SECOND ISOL DMPR,
1M14-F195
- f. CNTMT PURGE SUPP OTBD ISOL DMPR,
1M14-F040

COMMENTS: All valves are normally in the CLOSE position when the system is not in operation.

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JOB PERFORMANCE MEASURE B.1.e**

- * 8. **Take the following fan control switch to START:**
- **CNTMT & DW PURGE EXH FAN A, 1M14-C003A**
- STANDARD: Red light ON for CNTMT & DW PURGE EXH FAN A,
 1M14-C003A.
- COMMENTS: 1. Candidate was directed to startup M14 Train A per the
 Initiating Cue.
2. **NOTE: Startup of the Purge Exhaust Fan may cause the
Containment Vacuum Breaker(s) to lift until the system
startup is completed. This is an expected occurrence
and need not be reported. The event(s) should be
recorded in the Plant Narrative Log.**
3. The following alarm(s) may annunciate, and then clear in
approximately 5 minutes, when the M14 system shifts to the
d/p mode:
- CNTMT VAC RLF CHECK VLV 1A NOT CLOSED
(H13-P800-2 (A2)).
 - CNTMT VAC RLF CHECK VLV 2A NOT CLOSED
(H13-P800-2 (A3)).
 - CNTMT VAC RLF CHECK VLV 1B NOT CLOSED
(H13-P800-2 (F2)).
 - CNTMT VAC RLF CHECK VLV 2B NOT CLOSED
(H13-P800-2 (F3)).

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**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.e**

- | | |
|------------------------------------|--|
| <p><u> </u> * 9.</p> | <p>Take the following fan control switch to START:</p> <ul style="list-style-type: none"> • CNTMT PURGE SUPPLY FAN A, 1M14-C001A |
| <p>STANDARD:</p> | <p>Red light ON for CNTMT PURGE SUPPLY FAN A, 1M14-C001A.</p> |
| <p>COMMENTS:</p> | <ol style="list-style-type: none"> 1. Candidate was directed to startup M14 Train A per the Initiating Cue. 2. Note: After approximately 5 minutes of supply fan operation, its control mode will automatically shift from flow to d/p control. |

SAT / UNSAT

10. If necessary, adjust flow rates per Attachment 8, Intermittent and Refuel Mode Fan Settings.
- STANDARD: If required contacts Non-Licensed Operator to direct him to verify the M14 Train A fan settings are adjusted to the proper Intermittent Mode fan settings per Attachment 8, Intermittent and Refuel Mode Fan Settings.
- COMMENTS: 1. **The candidate should wait at least 5 minutes for any Containment Vacuum Breaker alarm(s) on panel H13-P800 to clear before he directs the Non-Licensed Operator to adjust any fan settings.**
- All open Containment vacuum breakers did re-close in approximately 5 minutes.**
2. The Simulator IC already contains the correct Intermittent Mode flow settings. However, if the candidate asks the Non-Licensed Operator for the specific M14 Train A flow settings, they are:
- | | |
|-------------------------|-----------|
| M14 Train A Supply Fan | 5,250 cfm |
| M14 Train A Exhaust Fan | 5,500 cfm |

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.e**

_____ 11. If required, verify temperature controller 1M14-R022A is set to maintain Containment temperature > 60 °F (normally set at 65 °F).

STANDARD: Contacts Non-Licensed Operator to verify temperature controller 1M14-R022A is set at 65 °F.

COMMENTS: Non-Licensed Operator will report that temperature controller 1M14-R022A is set to 65 °F.

SAT / UNSAT

_____ 12. Verifies the Chemistry Unit has taken a sample(s) per REC-0104.

STANDARD: Contacts the Chemistry Unit to determine if a sample has been taken per REC-0104.

COMMENTS:

1. Sample does not need to be completed before the system startup is performed. However, the sample must be completed before the system can be shutdown.
2. This sample is an ODCM requirement.
3. As a Chemistry Unit Supervisor, inform the candidate that the M14 sample has been taken per REC-0104.

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: Containment Vessel and Drywell Purge (CVDWP)
Train 'A' is operating in the Intermittent Mode.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.e**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.e

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.e
Attachment #1**

Initial Conditions: Plant startup is in progress. Primary Containment integrity is set. The drywell purge supply ducting is filled. Health Physics has requested the startup of the M14 System for 'air quality considerations for personnel entry'. The expected duration of M14 operation will be 2 hours. The time is 1300.

Initiating Cue: The Unit Supervisor directs you to startup M14 Train 'A' in the Intermittent mode in accordance with SOI-M14.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

Facility: PERRY Task No: 212-505-05-01

Task Title: Pulling Scram Fuses JPM No: B.1.f

K/A Reference:	<u>295037</u>	<u>EA1.01 (4.6/4.6)</u>	<u> </u>
	<u>295015</u>	<u>EA1.01 (4.0/4.2)</u>	<u> </u>
	<u>212000</u>	<u>A4.01 (4.6 / 4.6)</u>	<u> </u>

Examinee: Examiner:

Facility Evaluator: Date:

Method of testing:

Simulated Performance Actual Performance X

Classroom Simulator X Plant

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

Task Standard: All scram solenoids were de-energized resulting in the inward movement of control rods in accordance with PEI-SPI 1.1

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: PEI-SPI 1.1, Pulling Scram Fuses
Revision 0

Initial Conditions: A reactor scram signal and alternate rod insertion (ARI) signal have been generated and control rods have failed to insert. The Group A SCRAM SOLENOID VLVS status lights on H13-P680 are still energized. PEI-B13, RPV Control (ATWS) has been entered.

Initiating Cue: The Unit Supervisor directs you to insert control rods by pulling scram fuses to de-energize the scram solenoids in accordance with PEI-SPI 1.1.

Time Critical Task: YES/NO

X

Validation Time: 10 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

- * 1. **IF any SCRAM SOL VLVS status lights are energized:
THEN INSERT a scram as follows:**

REMOVE the following fuses to open scram valves:

Panel		Fuse	
MPL	Bay	Block (Clip)	Wire
H13-P694	B	F22 (F18D)	C71A106X1
H13-P694	B	F23 (F18H)	C71A107X1
H13-P691	A	F25 (F18A)	C71A10X1
H13-P691	A	F26 (F18E)	C71A101X1
H13-P692	A	F30 (F18B)	C71A102X1
H13-P692	A	F31 (F18F)	C71A103X1
H13-P693	B	F30 (F18C)	C71A104X1
H13-P693	B	F31 (F18G)	C71A105X1

STANDARD: Each fuse is correctly identified and removed. All SCRAM SOL VLVS status lights are de-energized on H13-P680.

- COMMENTS:**
- 1. The candidate may remove the specified fuses in any order.**
 - All fuses are located in the PEI-SPI panel in the simulator.
 - The candidate is expected to locate the appropriate back panels for the specified fuses to be removed. Instructions inside of each back panel will direct the candidate to the PEI-SPI panel where the fuses are located.
 - The candidate is expected to observe proper electrical safety precautions when working inside energized panels (i.e., removal of all metallic or loose objects such as rings, watches, pens, etc that could come in contact with exposed electrical circuits.
 - Electrical safety gloves are not required.

SAT / UNSAT START TIME: _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

- * 2. **REMOVE the following fuses to close SDV vent and drain valves:**

Panel		Fuse	
MPL	Bay	Block (Clip)	Wire
H13-P692	A	F17 (F17B)	C71A0615X1
H13-P691	A	F20 (F17A)	C71A0515X1

STANDARD: Each fuse is correctly identified and removed. SDV vent and drain valve Green CLOSED lights are ON at H13-P680.

- COMMENTS:**
- 1. All control rods may not fully insert. A hydraulic lock may occur once all the scram solenoids are de-energized. However, some inward rod motion will be observed.**
 - 2. The candidate should return to H13-P680 and verify:**
 - All inward rod motion has stopped.**

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

- * 3. **WHEN all inward rod motion is stopped,
THEN REPLACE fuses as follows:**

REPLACE the following fuses to close scram valves:

Panel		Fuse	
MPL	Bay	Block (Clip)	Wire
H13-P694	B	F22 (F18D)	C71A106X1
H13-P694	B	F23 (F18H)	C71A107X1
H13-P691	A	F25 (F18A)	C71A10X1
H13-P691	A	F26 (F18E)	C71A101X1
H13-P692	A	F30 (F18B)	C71A102X1
H13-P692	A	F31 (F18F)	C71A103X1
H13-P693	B	F30 (F18C)	C71A104X1
H13-P693	B	F31 (F18G)	C71A105X1

STANDARD: Each fuse is correctly identified (20 amp) and reinstalled.

COMMENTS: Fuses used in the simulator may not be the same amperage rating as used in the Control Room.

The fuses in this step are 20 amp.

Refer to electrical drawing B208-040, Sheet A04 (or A10), if desired to determine the correct amperage rating.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

- * 4. **REPLACE the following fuses to open SDV vent and drain valves:**

Panel		Fuse	
MPL	Bay	Block (Clip)	Wire
H13-P692	A	F17 (F17B)	C71A0615X1
H13-P691	A	F20 (F17A)	C71A0515X1

STANDARD: Each fuse is correctly identified (5 amp) and reinstalled.

COMMENTS: 1. Fuses used in the simulator may not be the same amperage rating as used in the Control Room.

The fuses in this step are 5 amp.

Refer to electrical drawing B208-040, Sheet A04 (or A05, Line 49 and A06, Line 49), if desired to determine the correct amperage rating.

2. If all rods are not full in:

As the Unit Supervisor, inform the candidate that another operator will be assigned to perform PEI-SPI 1.1 again.

SAT / UNSAT STOP TIME:

TERMINATING CUES: All scram solenoids were de-energized resulting in the inward movement of control rods.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.f**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.f

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.f
Attachment #1

Initial Conditions: **A reactor scram signal has been generated and control rods have failed to insert. The SCRAM SOLENOID VLVS status lights on H13-P680 are still energized. PEI-B13, RPV Control (ATWS) has been entered.**

Initiating Cue: **The Unit Supervisor directs you to insert control rods by pulling scram fuses to de-energize the scram solenoids in accordance with PEI-SPI 1.1.**

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

Facility: PERRY Task No: 217-503-04-01

Task Title: RCIC Manual Initiation from Standby (Faulted) JPM No: B.1. g

K/A Reference: 217000 K4.06 (3.5/3.5) A2.01 (3.8/3.7)
A4.04 (3.6/3.6)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

Task Standard: **The Reactor Core Isolation Cooling System (RCIC) is manually started and is injecting into the reactor vessel in accordance with SOI-E51.**

Required Materials: Simulator setup is per specified instructions for this NRC exam.

General References: SOI-E51, Reactor Core Isolation Cooling System
Revision 7, PIC 9
SOI-P42, Emergency Closed Cooling System
Revision 7 PIC 7
SOI-P45/49, Emergency Service Water System
Revision 2 PIC 21
SOI-M32, ESWPH Ventilation
Revision 6 PIC 1

Initial Conditions: **PEI-B13, RPV Control, has been entered due to RPV level less than 178 inches. RPV level is slowly lowering.**

Initiating Cue: **The Unit Supervisor directs you to manually initiate the Reactor Core Isolation Cooling System (RCIC) from standby readiness and establish an injection rate of 700 gpm to the reactor vessel.**

Note: The candidate should be informed if the Evaluator will role play as the Secondary Alarm Station (SAS) Operator and Chemistry, otherwise the candidate is expected to demonstrate normal plant communication practices.

Time Critical Task: YES/NO

X

Validation Time: 30 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. Initiate evacuation of any personnel from the Reactor Building Annulus and Containment.

STANDARD: Plant announcement is made for personnel to evacuate the Reactor Building Annulus and Containment due to RCIC system operation.

COMMENTS: 1. Candidate references SOI-E51, Section 4.3.

2. **Candidate is expected to perform a 'manual initiation of RCIC' from memory per the Operations Section Expectations Handbook. However, if the situation permits (i.e., RPV level is slowly lowering), the candidate is allowed to reference the SOI.**

3. If asked, inform student that a manual startup of ECC and ESW is not required prior to manually initiating RCIC.

ECC and ESW will automatically startup.

4. **Candidate may also request that SAS perform a security check to verify if anyone is in the Reactor Building Annulus and Containment.**

SAT / UNSAT START TIME: _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

 * 2. **Arm and depress RCIC MAN INIT pushbutton, 1E51A-S37.**

STANDARD: Candidate recognizes failure of RCIC to manually initiate from standby readiness (fault).

Candidate informs the Unit Supervisor that RCIC did not initiate.

COMMENTS: 1. RCIC MAN INITIATION SWITCH ARMED alarm (H13-P601-21(B5)) is received indicating 1E51A-S37 has been armed.

2. If required, as the Unit Supervisor, inform candidate to 'manually startup RCIC from standby readiness' in accordance with SOI-E51.

3. The candidate is expected to perform the remainder of this task using the operating instructions. The candidate should not feel that the situation is so urgent that the operating instructions should not be used.

SAT / UNSAT

 3. Initiate evacuation of any personnel from the Reactor Building Annulus and Containment.

STANDARD: Plant announcement is made for personnel to evacuate the Reactor Building Annulus and Containment due to RCIC system operation.

COMMENTS: 1. Candidate references SOI-E51, Section 4.4.

2. Candidate is not required to repeat this evacuation since it was previously performed in Step 1 above.

3. Next step will have candidate refer to SOI-P42, which will send candidate to SOI-P45/49, and then to SOI-M32.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
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JOB PERFORMANCE MEASURE B.1.g**

- * 4. **Take ESW PMP HOUSE VENT SUPP FAN 1A, 1M32-C0001A, control to START.**

STANDARD: Red light ON for ESWPH Fan A.

COMMENTS: Candidate references SOI-M32, Section 4.3.

SAT / UNSAT

5. Verify ESW PMP HOUSE EXH LOUVER 70A, 1M32-F070A, opens.

STANDARD: Red light ON for ESWPH EXH LOUVER F70A.

COMMENTS: Candidate returns to SOI-P45/49, Section 4.2 for next step.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

- _____ 6. Notify Chemistry to perform the following:
- a. Obtain Tech Spec samples of flow through the RHR Heat Exchangers.
 - b. Place the ESW Chlorination System in operation for Division 1 per SOI-P48.

STANDARD: Candidate notifies Chemistry of impending ESW startup.

- COMMENTS:
1. **NOTE: If plant conditions require rapid initiation of flow, notification of Chemistry should be made as soon as possible following initiation of flow.**
 2. This is not a critical step because the NOTE allows the notification of Chemistry to be delayed.

SAT / UNSAT

- _____ 7. Verify RHR A HX'S ESW INLET VALVE, 1P45-F014A is OPEN.

STANDARD: Red light ON for RHR A HX'S INLET VALVE, 1P45-F014A.

COMMENTS: Valve is normally in the OPEN position.

SAT / UNSAT

- _____ 8. Verify RHR A HX'S ESW OUTLET VALVE, 1P45-F068A is OPEN.

STANDARD: Red light ON for RHR A HX'S OUTLET VALVE, 1P45-F068A.

COMMENTS: Valve is normally in the OPEN position.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

- * 9. **Take ESW PUMP A, 1P45-C001A control switch to START, and observe:**
- a. ESW PUMP A DISCH VALVE, 1P45-F130A, starts opening.**
 - b. When the discharge valve reaches 5% open, ESW PUMP A, 1P45-C001A, starts.**
 - c. ESW PUMP A DISCH VALVE, 1P45-F130A, opens fully.**

- STANDARD:**
- 1. Red and Green light ON for ESW PUMP A DISCH VALVE, 1P45-F130A.**
 - 2. Red light ON for ESW PUMP A, 1P45-C001A.**
 - 3. Red light ON for ESW PUMP A DISCH VALVE, 1P45-F130A.**

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

- COMMENTS:
1. Candidate will not be able to observe when ESW PUMP A DISCH VALVE, 1P45-F130A, is at the 5% open position.
 2. The following alarms will annunciate and clear immediately after ESW PUMP A DISCH VALVE, 1P45-F130A, is fully open:
 - a. ESW TO DIESEL HEAT EXCHANGER FLOW LOW (H13-P877-1 (D1)).
 - b. ESW FROM ECC HX A FLOW LOW (H13-P601-20 (F1)).
 - c. ESW TO RHR A HX'S FLOW LOW (H13-P601-20 (H5)).
 - d. ESW PUMP A DISCHARGE PRESSURE LOW (H13-P601-20 (G1)).
 2. The candidate should observe initial pump starting current and normal pump current (less than 102 amps) on meter P45-R010, ESW PUMP A AMPS.
 3. The candidate should observe normal pump discharge pressure (62-90 psig) on meter P45-R102A, ESW A PUMP DISCH PRESS.
 4. The candidate should observe normal system flowrate (1000-1050 gpm) on meter P45-R074A, ESW DG FLOW, (2600-2730 gpm) on meter P45-R054A, ESW TO ECC HX A FLOW, and (7300-7500) on meter E12-R602A, ESW A RHR A HX FLOW

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

_____ 10. Record ESW A total flow and individual component flows in the Narrative Log.

STANDARD: Candidate records ESW A total and individual component flows in the Narrative Log.

COMMENTS: 1. The computerized Narrative Log is not available in the simulator, the candidate will use the hard copy Narrative Log maintained by the Operator at the controls.

2. **As the Unit Supervisor, you may direct the candidate to record flows at the completion of the evolution in order to expedite injection into the RPV.**

SAT / UNSAT

_____ 11. De-icing operation is required per IOI-15, Seasonal Variations, whenever service water inlet temperature falls below 34 degrees F.

STANDARD: Candidate determines that de-icing operation per IOI-15, Seasonal Variations, is not required based on a service water inlet temperature that is above 34 degrees F as read on Recorder P41-R417.

COMMENTS: Candidate returns to SOI-P42, Section 4.4 for next step.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

 * 12. **Take ECC PUMP A, 1P42-C001A, control switch to START.**

STANDARD: Red light ON for ECC Pump A.

COMMENTS: 1. The candidate should observe normal pump discharge pressure (110-110 psig) on meter P42-R096A, ECC A PUMP DISCH PR.

 2. The candidate should observe normal system flowrate (1850-2200 gpm) on meter P42-R043A, ECC A HDR FLOW.

The candidate may inform the Unit Supervisor that ECC A HDR FLOW is only 1800-1850 gpm.

As the Unit Supervisor, direct the candidate to continue with the evolution.

 3. Candidate returns to SOI-E51, Section 4.4 for remainder of task.

SAT / UNSAT

 13. Verify RHR A HEAD SPRAY ISOL, 1E12-F023, shut.

STANDARD: Green light ON for RHR A HEAD SPRAY ISOL, 1E12-F023.

COMMENTS: Valve is normally in the CLOSE position.

SAT / UNSAT

 14. Verify RCIC PUMP CST SUCTION VALVE, 1E51-F010, open.

STANDARD: Red light ON for RCIC PUMP CST SUCTION VALVE, 1E51-F010.

COMMENTS: Valve is normally in the OPEN position.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

 * 15. **Take RCIC TURBINE GLAND SEAL COMP, 1E51-C004, to START.**

STANDARD: Red light ON for RCIC TURBINE GLAND SEAL COMP, 1E51-C004.

COMMENTS: Gland Seal Compressor is normally not running (OFF).

SAT / UNSAT

 * 16. **Take RCIC STEAM SHUTOFF, 1E51-F045, to OPEN to roll the RCIC Turbine.**

STANDARD: Red light ON for RCIC STEAM SHUTOFF, 1E51-F045.

COMMENTS: 1. Alarm RCIC PUMP DISCHARGE FLOW LO (H13-P601-20 (F3)) will annunciate and clear immediately after RCIC INJECTION VALVE, 1E51-F013, is fully open.
 2. Valve is normally in the CLOSE position.

SAT / UNSAT

 17. Ensure RCIC PUMP MIN FLOW VALVE, 1E51-F019, opens if RCIC flow is less than 120 gpm and the RCIC Pump discharge pressure is greater than 125 psig.

STANDARD: Red light ON for RCIC PUMP MIN FLOW VALVE, 1E51-F019.

COMMENTS: 1. Valve is normally in the CLOSE position and will automatically open.
 2. RCIC injection flow to the RPV is 0 gpm until the RCIC Injection Valve, 1E51-F013, is opened in Step 19.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

- _____ 18. Verify the following valves automatically close after RCIC STEAM SHUTOFF, 1E51-F045 is open:
- a. RCIC TURB CNDS TO CRW FIRST SHUTOFF, 1E51-F004.
 - b. RCIC TURB CNDS TO CRW SECOND SHUTOFF, 1E51-F005.
 - c. RHR & RCIC ST SUPP FIRST DRN SHUTOFF, 1E51-F025.
 - d. RHR & RCIC ST SUPP SECOND DRN SHUTOFF, 1E51-F026.

STANDARD: Green light ON for:

- a. RCIC TURB CNDS TO CRW FIRST SHUTOFF, 1E51-F004.
- b. RCIC TURB CNDS TO CRW SECOND SHUTOFF, 1E51-F005.
- c. RHR & RCIC ST SUPP FIRST DRN SHUTOFF, 1E51-F025.
- d. RHR & RCIC ST SUPP SECOND DRN SHUTOFF, 1E51-F026.

COMMENTS: Valves 1E51-F004, F025, and F026 are normally in the OPEN position and valve 1E51-F005 is normally in the CLOSED position when RCIC is in Standby.

SAT / UNSAT

PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g

_____* 19. **Take RCIC INJECTION VALVE, 1E51-F013, to OPEN.**

STANDARD: Red light ON for RCIC INJECTION VALVE, 1E51-F013.

COMMENTS: 1. Alarm RCIC PUMP DISCHARGE FLOW LO (H13-P601-20 (F3)) will annunciate and clear immediately after RCIC INJECTION VALVE, 1E51-F013, is fully open:

 2. Candidate should observe RCIC PUMP MIN FLOW VALVE, 1E51-F019, automatically closes when RCIC pump flow is > 120 gpm and RCIC pump discharge pressure is > 125 psig.

 3. Valve is normally in the CLOSE position.

SAT / UNSAT

_____* 20. Check RCIC INJ CHECK VALVE, 1E51-F066, valve disc open.

STANDARD: Red light ON for RCIC INJ CHECK VALVE, 1E51-F066.

COMMENTS: 1. Valve is normally in the CLOSE position.

2. It is acceptable if RPV water level increases above RPV Level 8 (>220 inches) during the performance of the next step.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
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JOB PERFORMANCE MEASURE B.1.g**

_____ 21. Using RCIC PUMP FLOW CONTROL, 1E51-R600, adjust flow until the desired flow is reached.

STANDARD: Candidate verifies the RCIC PUMP FLOW CONTROL, 1E51-R600, is in the AUTO mode with a setpoint of 700 gpm.

COMMENTS:

1. The candidate should observe normal system flowrate (700 gpm max) on meter 1E51-R606, RCIC PUMP FLOW.
2. The candidate should observe RCIC pump discharge pressure (less than 100 psig above reactor pressure) on meter 1E51-R601, RCIC PUMP DISCH PRESS.
3. The candidate should observe RCIC pump suction pressure (25-30 psig from CST) on meter 1E51-R604, RCIC PUMP SUCTION PRESS.
4. The candidate should observe RCIC turbine exhaust pressure (0-10 psig) on meter 1E51-R603, RCIC TURB EXH PRESS.
5. The candidate should observe RCIC turbine speed (2000-4550 rpm) on meter 1E51R607, RCIC TURB RPM.
6. The candidate should observe RCIC turbine pressure (per reactor pressure) on meter 1E51-R602, RCIC TURB PRESS.

7. As the Unit Supervisor, inform the candidate that you will assign another operator to monitor RCIC operation and RPV water level.

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: The RCIC System is injecting water into the reactor vessel.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.1.g**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.1.g

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.1.g
ATTACHMENT 1**

Initial Conditions: PEI-B13, RPV Control, has been entered due to RPV level less than 178 inches. RPV level is slowly lowering.

Initiating Cue: The Unit Supervisor directs you to manually initiate the Reactor Core Isolation Cooling System (RCIC) from standby readiness and establish an injection rate of 700 gpm to the reactor vessel.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.a**

Facility: PERRY Task No: 205-574-05-01

Task Title: RHR C Runout Injection JPM No: B.2.a

K/A Reference: 203000 A4.01 (4.1 / 4.1)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

CAUTION

This JPM is a simulation. The student shall not physically manipulate plant equipment. If necessary, remind the student that this JPM is a simulation, not an actual performance.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.a**

Task Standard: LPCI C Injection Valve 1E12-F042C seal-in logic has been defeated with MCC EF1D07 Compartment Y cubicle energized.

Required Materials: Working copy of PEI-SPI 6.5, RHR C Runout Injection Pictures of local MCC EF1D07 Compartment Y

General References: PEI-SPI 6.5, RHR C Runout Injection Revision 0

Initial Conditions: An ATWS has occurred. The plant is being operated in accordance with PEI-B13, RPV Control (ATWS). Preparation for controlled injection into the RPV inside the shroud with RHR C is in progress. The LPCI 'C' LOGIC BYP E12-F021 keylock switch has been placed in BYPASS at Control Room panel H13-P618.

Initiating Cue: The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to defeat the seal-in logic for the LPCI C Injection Valve, E12-F042C, in accordance with PEI-SPI 6.5, RHR C Runout Injection.

Time Critical Task: YES/NO

X

Validation Time: 15 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.a**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#

_____ 1. Obtains copy of PEI-SPI 6.5, RHR C Runout Injection, to be used in the field during task performance.

STANDARD: PEI-SPI 6.5 obtained from OSC PEI File Cabinet located outside of the OSC at Control Complex 599'.

COMMENTS: 1. When candidate has located the OSC PEI File Cabinet, inform the candidate that he is not to break the locking tab on the PEI-SPI file cabinet.

Provide candidate with a copy of PEI-SPI 6.5.

2. If the OSC PEI File Cabinet locking tab is broken, inform the Perry examination representative so that a new locking tab can be installed.

3. Candidate should verbalize the tools that are required in the field to perform this task as listed in PEI-SPI 6.5 (one flathead screwdriver, one capture screwdriver, and one pair of gloves).

SAT / UNSAT START TIME: _____

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JOB PERFORMANCE MEASURE B.2.a**

_____ 2. Contact the Control Room.

STANDARD: Verifies the Control Room Operator is ready for the in-plant actions to be performed.

COMMENTS: **1. As the Control Room Operator, inform the candidate that Step 1.1 is completed.**

2. The completion of Step 1.1 was indirectly reported as completed in the Initial Condition summary.

3. All task steps will be performed at Control Complex 620', Division 2 Switchgear Room at MCC EF1D07 Compartment Y.

SAT / UNSAT

_____ * 3. **OPEN Compartment Y disconnect switch.**

STANDARD: Locates the correct disconnect switch; describes action required to open the disconnect switch; and, stating the final position of the disconnect switch (open), operates the disconnect switch in the downward direction.

COMMENTS: 1. All PEI MCC Compartments in the field are identified with a plastic placard consisting of an orange background with white lettering.

2. Cue the candidate that MCC EF1D07 Compartment Y disconnect switch for valve E12-F042C is open.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
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JOB PERFORMANCE MEASURE B.2.a**

 * **4. OPEN Compartment Y door.**

STANDARD: Locates the correct compartment door; describes action required to open the compartment door; and opens the compartment door.

COMMENTS: **1. Cue the candidate that MCC EF1D07 Compartment Y door is open.**

2. For safety considerations, the candidate will not actually open the compartment door.

3. Use the enclosed picture (EF1D07 #2) for internal operations of MCC EF1D07 Compartment Y in the next step.

SAT / UNSAT

 * **5. REMOVE terminal strip cover concealing terminal 4, terminal 6, and terminal 8.**

STANDARD: Locates the correct terminal strip concealing terminals 4, 6, and 8; describes action to remove the terminal strip cover; and removes the terminal strip cover.

COMMENTS: **1. The candidate is expected to observe proper electrical safety precautions when working inside energized panels (i.e., removal of all metallic or loose objects such as rings, watches, pens, etc that could come in contact with exposed electrical circuits, use of electrical safety gloves, etc.)**

2. Cue the candidate that the terminal strip cover is removed.

3. Use the enclosed picture (EF1D07 #3) for internal operations of MCC EF1D07 Compartment Y in the next step.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
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JOB PERFORMANCE MEASURE B.2.a**

- * 6. **PLACE both wires 1E12A3405C on a spare terminal as follows:**
- 1. REMOVE both wires 1E12A3405C from terminal 4.**
 - 2. CONNECT both wires 1E12A3405C to terminal 8.**
- STANDARD: Locates both wires 1E12A3405C on terminal 4; describes action to remove both wires from terminal 4; describes action to connect both wires to terminal 8; and removes both wires from terminal 4 and connects both wires to terminal 8.
- COMMENTS: 1. Terminal 8 is a spare terminal.
2. PEI wires can be identified by wire markers consisting of a red background with white lettering.
3. **Cue the candidate that both wires 1E12A3405C have been removed from terminal 4 and connected to terminal 8.**
4. **Use the enclosed picture (EF1D07 #3) for internal operations of MCC EF1D07 Compartment Y in the next step.**

SAT / UNSAT

- * 7. **REMOVE wire 1E12A3419A from terminal 6.**
- STANDARD: Locates wire 1E12A3419A on terminal 6; describes action to remove wire from terminal 6; describes action to insulate the exposed of the wire; and removes wire from terminal 6 and insulates the exposed end of the wire.
- COMMENTS: **Using the enclosed picture (EF1D07 #4) for internal operations of MCC EF1D07 Compartment Y, cue the candidate that wire 1E12A3419A has been removed from terminal 6 and the exposed wire has been insulated.**

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.a**

 * 8. **Close Compartment Y door.**

STANDARD: Locates the correct compartment door; describes action required to close the compartment door; and closes the compartment door.

COMMENTS: **Cue the candidate that MCC EF1D07 Compartment Y door is closed.**

SAT / UNSAT

 * 9. **CLOSE Compartment Y disconnect switch.**

STANDARD: Locates the correct disconnect switch; describes action required to close the disconnect switch; and, stating the final position of the disconnect switch (close), operates the disconnect switch in the upward direction.

COMMENTS: 1. Prior to closing the disconnect switch, the candidate should inform the Control Room.

 2. **Cue the candidate that MCC EF1D07 Compartment Y disconnect switch for valve E12-F042C is closed.**

SAT / UNSAT

 10. **Contacts the Control Room.**

STANDARD: Notifies the Control Room Operator that Step 1.2 for PEI-SPI 6.5 has been completed.

COMMENTS: **As the Control Room Operator, inform the candidate to return to the Control Room.**

SAT / UNSAT STOP TIME:

TERMINATING CUES: **LPCI C Injection Valve 1E12-F042C seal-in logic has been defeated with MCC EF1D07 Compartment Y cubicle energized.**

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.a**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.a

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.2.a
Attachment #1**

- Initial Conditions:** An ATWS has occurred. The plant is being operated in accordance with PEI-B13, RPV Control (ATWS). Preparation for controlled injection into the RPV inside the shroud with RHR C is in progress. The LPCI 'C' LOGIC BYP E12-F021 keylock switch has been placed in BYPASS at Control Room panel H13-P618.
- Initiating Cue:** The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to defeat the seal-in logic for the LPCI C Injection Valve, E12-F042C, in accordance with PEI-SPI 6.5, RHR C Runout Injection.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

Facility: PERRY Task No: 264-551-04-01

Task Title: Division 2 Diesel Restoration (ONI-R10) JPM No: B.2.b

K/A Reference: 295003 EA1.02 (4.2/4.3)
264000 A2.09 (3.7 / 4.1)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

CAUTION

This JPM is a simulation. The student shall not physically manipulate plant equipment. If necessary, remind the student that this JPM is a simulation, not an actual performance.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

Task Standard: Division 2 Diesel Generator is aligned for a local startup attempt, including reset of the Engine Overspeed Trip Mechanism, per ONI-R10, Attachment 9, Division 2 Diesel Restoration.

Required Materials: ONI-R10, Attachment 9, Division 2 Diesel Restoration
SOI-R43, Division 1 and 2 Diesel Generator System
Pictures of local Division 2 Diesel components

General References: ONI-R10, Attachment 9, Division 2 Diesel Restoration
Revision 4, PIC 16
SOI-R43, Division 1 and 2 Diesel Generator System
Revision 8, PIC 16

Initial Conditions: ONI-R10, Loss of AC Power, has been entered due to a Station Blackout. The Division 2 Diesel Generator started but tripped. Override of Division 2 Diesel Generator Non-LOCA Trips was not performed. Brkr EF1C07 was confirmed to be in the close position. The Diesel System Responsible System Engineer (RSE) has been directed to report to the Division 2 Diesel Generator Room as soon as possible to provide engineering support.

Initiating Cue: The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to restart Division 2 Diesel Generator in accordance with ONI-R10, Attachment 9, Division 2 Diesel Restoration. Steps 1 through 6 have been completed. You will be relieved as soon as a Non-Licensed Operator becomes available.

Time Critical Task: YES/NO

X

Validation Time: 20 minutes

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CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#	
_____ 1.	Obtains copy of ONI-R10, Attachment 9, Division 2 Diesel Restoration, to be used in the field during task performance.
STANDARD:	Copy of ONI-R10, Attachment 9, Division 2 Diesel Restoration, obtained
COMMENTS:	<div>1. Candidate would obtain copy of ONI-R10, Attachment 9, Division 2 Diesel Restoration from the Control Room before proceeding to the Division 2 Diesel Generator Room.</div> <div style="text-align: center;">Provide candidate with a copy of ONI-R10.</div> <div>2. Candidate should not require a copy of SOI-R43 until Step 4 below when he confirms that the Engine Overspeed Trip Mechanism is tripped.</div>
SAT / UNSAT	START TIME: _____

_____ 2.	Contact the Control Room.
STANDARD:	Verifies the Control Room Operator is ready for the in-plant actions to be performed.
COMMENTS:	<div>1. As the Control Room Operator, inform the candidate that ONI-R10, Attachment 9, Steps 1 through 6 are completed.</div> <div style="text-align: center;">This information was reported in the Initial Cue.</div> <div>2. An I&C Technician is not required for the in-plant steps.</div>
SAT / UNSAT	

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

_____ 3a. Align Division 2 Diesel Generator as follows:

- a. At Brkr EH1201, DIESEL GEN BRKR, reset LOCKOUT RELAY 86G.
- b. At Brkr EH1201, DIESEL GEN BRKR, reset LOCKOUT RELAY 86G1.

STANDARD: a. LOCKOUT RELAY 86G is reset as indicated by black flag at Brkr EH1201, DIESEL GEN BRKR.
 b. LOCKOUT RELAY 86G1 is reset as indicated by black flag at Brkr EH1201, DIESEL GEN BRKR.

COMMENTS: 1. LOCKOUT RELAYS 86G and 86G1 are normally in the RESET condition.

2. If candidate asks about the status of LOCKOUT RELAYS 86G and 86G1, then cue the candidate that the relay flags indicate the RESET condition.

- 3. LOCKOUT RELAYS 86G and 86G1 are located at Brkr EH1201 in the Division 2 Switchgear Room, Control Complex, 620'.

SAT / UNSAT

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CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

 * 3b. (Continued) Align Division 2 Diesel Generator as follows:

- c. On the engine, verify that the Engine Overspeed Trip Mechanism is reset.**

STANDARD: Confirms that the Division 2 Diesel Generator is tripped due to overspeed as indicated by the Overspeed Vent Valve Lever in the 'up/fuel off' position.

COMMENTS: 1. **Checking the status of the Engine Overspeed Trip Mechanism/Overspeed Vent Valve Lever would require the candidate to climb onto the diesel front standard.**

For safety reasons, the candidate will not be allowed to climb onto the diesel front standard.

2. **The Evaluator will ask the candidate to identify the approximate location on the diesel engine where he would verify the status of the Engine Overspeed Trip Mechanism/Overspeed Vent Valve Lever.**

As viewed from the west end of the engine, the candidate will point to a location in the middle of the engine front standard between the Engine Driven Fuel Oil Pump and the twin Fuel Oil Filters.

3. **The Evaluator will then show the candidate a picture. The candidate must correctly identify that the Engine Overspeed Trip Mechanism is tripped as indicated by the Overspeed Vent Valve Lever being in the 'up/fuel off' position.**
4. **If the candidate inquires, then inform the candidate that DIESEL GEN OVERSPEED / MAN EMERG TRIP alarm (window F3) is locked in on Panel 1H51-P054B.**

Provide candidate with a copy of ARI-H51-P054B (F3) if requested.

5. **As the Control Room Operator, inform the candidate to reset the Engine Overspeed Trip Mechanism.**

6. **All task steps will be performed at Diesel Generator Building 620', Division 2 Diesel Generator Room.**

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

_____ 4. Obtains copy of SOI-R43, Division 1 and 2 Diesel Generator System, to be used in the field during task performance.

STANDARD: Copy of SOI-R43, Division 1 and 2 Diesel Generator System, obtained.

COMMENTS: 1. Candidate would obtain copy of SOI-R43, Division 1 and 2 Diesel Generator System, from the Control Room.

There is no controlled copy of SOI-R43 normally stored in the Division 2 Diesel Generator Room.

Provide candidate with a copy of SOI-R43.

2. Candidate proceeds to SOI-R43, Section 7.9, Overspeed Trip Reset.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

 * 5a. **Reset the overspeed trip as follows:**

a. Reset the Overspeed Vent Valve Lever, 1R43-F506B.

STANDARD: a. Identifies the general location of the Overspeed Vent Valve Lever, 1R43-F506B and, stating the desired final position of the Overspeed Vent Valve Lever (RESET), positions it to the RESET (down/fuel on) position.

COMMENTS: 1. **Checking the status of the Overspeed Vent Valve Lever would require the candidate to climb onto the diesel front standard.**

For safety reasons, the candidate will not be allowed to climb onto the diesel front standard.

2. The Evaluator will ask the candidate to identify the approximate location on the diesel engine where he would verify the position of the Overspeed Vent Valve Lever, 1R43-F506B.

As viewed from the west end of the engine, the candidate will point to a location in the middle of the engine front standard between the Engine Driven Fuel Oil Pump and the twin Fuel Oil Filters.

3. The Evaluator will then show the candidate a picture. The candidate must correctly identify that the Overspeed Vent Valve Lever is reset as indicated by the Overspeed Vent Valve Lever being in the 'down/fuel on' position.

4. If the candidate has correctly repositioned the Overspeed Vent Valve Lever, 1R43-F506B, then:

Cue the candidate that the Overspeed Vent Valve Lever, 1R43-F506B, is in the RESET position.

SAT / UNSAT

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CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b

- * 5b. (Continued) Reset the overspeed trip as follows:
- b. Position the Overspeed Reset Valve, 1R43-F552B, to the "reset" position.

STANDARD: b. Identifies the general location of the Overspeed Reset Valve, 1R43-F552B and, stating the desired position of the Overspeed Reset Valve (RESET), positions it to the RESET position.

COMMENTS: 1. Checking the position of the Overspeed Reset Valve, 1R43-F552B, would require the candidate to climb onto the diesel front standard.

For safety reasons, the candidate will not be allowed to climb onto the diesel front standard.

2. The Evaluator will ask the candidate to identify the approximate location on the diesel engine where he would verify the position of the Overspeed Reset Valve.

As viewed from the west end of the engine, the candidate will point to a location in the middle of the engine front standard approximately 4 feet above the Engine Driven Fuel Oil Pump and to the right of a 12-inch jacket water pipe.

3. The Evaluator will show the candidate a picture. The candidate must correctly identify the RESET position for the Overspeed Reset Valve.
4. If the candidate has correctly repositioned the Overspeed Reset Valve, 1R43-F552B, then:

Cue the candidate that the Overspeed Reset Valve, 1R43-F552B, is in the RESET position.

SAT / UNSAT

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CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

- * 5c. **(Continued) Reset the overspeed trip as follows:**
- c. **When air venting stops, position the Overspeed Reset Valve, 1R43-F552B, to the “normal” position.**
- STANDARD: c. When air venting stops, states the desired final position of the Overspeed Reset Valve (NORMAL), and positions it to the ‘NORMAL’ position.
- COMMENTS: 1. Candidate previously described the location of the Overspeed Reset Valve, 1R43-F552B, in Step 5b above.
2. **If the candidate has successfully completed Steps 5a and 5b, then:**
- Cue the candidate that air venting has stopped.**
2. **If the candidate has correctly repositioned the Overspeed Reset Valve, 1R43-F552B, then:**
- Cue the candidate that Overspeed Reset Valve, 1R43-F552B is in the NORMAL position.**
3. If the candidate inquires, then inform the candidate that the DIESEL GEN OVERSPEED / MAN EMERG TRIP alarm (window F3) has cleared on Panel 1H51-P054B.

SAT / UNSAT

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CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

- * 5d. **(Continued) Reset the overspeed trip as follows:**
- d. Ensure the following valves have opened by observing the valve indicating mark on the valve stem:**
- 1). Right Bank Air Butterfly Valve, 1R43-F524B.**
2). Left Bank Air Butterfly Valve, 1R430F525B.
- STANDARD: d. Identifies the location of Right Bank Air Butterfly Valve, 1R43-F524B, and confirms that the valve has re-opened by observing the valve indicating mark on the valve stem (i.e., the valve stem is retracted).
- Identifies the location of Left Bank Air Butterfly Valve, 1R43-F525B, and confirms that the valve has re-opened by observing the valve indicating mark on the valve stem (i.e., the valve stem is retracted).
- COMMENTS: 1. There are new valve tags on 1R43-F524B and 1R43-F525B. They are identified as 'Combustion Air Strangulation Valve'; however, the steps in SOI-R43, Section 7.9 still contain the old valve names.
- 2. If the candidate has successfully completed Steps 5a, 5b, and 5c, then:**
- Cue the candidate that Right Bank Air Butterfly Valve, 1R43-F524B, has re-opened.**
- Cue the candidate that Left Bank Air Butterfly Valve, 1R43-F525B, has re-opened.**

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

_____ 6. Perform independent verification of the required components.

STANDARD: Independent verification of the required components is performed.

COMMENTS: **1. As the Unit Supervisor, when the candidate has completed the first verification, then inform him that you will assign another operator to complete the second verification and that he should continue with the task.**

2. Candidate exits SOI-R43, Section 7.9, and returns to ONI-R10, Attachment 9.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

- * 7. **(Continued) Align Division 2 Diesel Generator as follows:**
- d. At Generator Control Panel, 1H51-P055B, place DIESEL GENERATOR CONTROL TRANSFER in LOCAL.**
 - e. At Generator Control Panel, 1H51-P055B, verify DIESEL GENERATOR VOLTAGE REGULATOR MODE SELECTOR in AUTO.**
 - f. Place the DIESEL GENERATOR switch handle at 1H13-P877 in AUTO**

- STANDARD:**
- d. DIESEL GENERATOR CONTROL TRANSFER switch is placed in the LOCAL position.**
 - e. DIESEL GENERATOR VOLTAGE REGULATOR MODE SELECTOR switch is in AUTO.**
 - f. Contacts the Control Room Operator to place the DIESEL GENERATOR switch handle at 1H13-P877 in AUTO.**

- COMMENTS:**
- 1. Step 7 is a continuation of Step 3 above.
 - 2. Candidate references ONI-R10, Attachment 9.
 - 3. Cue the candidate that the DIESEL GENERATOR CONTROL TRANSFER switch is in the LOCAL position.**
 - 4. The DIESEL GENERATOR CONTROL TRANSFER switch is normally in the REMOTE position.
 - 5. Cue the candidate that the DIESEL GENERATOR VOLTAGE REGULATOR MODE SELECTOR switch is in AUTO.**
 - 6. The DIESEL GENERATOR VOLTAGE REGULATOR MODE SELECTOR switch is normally in the AUTO position.
 - 7. As the Control Room Operator, cue the candidate that the DIESEL GENERATOR switch handle at 1H13-P877 is in the AUTO position.**
 - 8. Inform the candidate that a Non-Licensed Operator has arrived and that he will complete the remainder of Attachment 9.**

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: Division 2 Diesel Generator is aligned for a local startup attempt, including reset of the Engine Overspeed Trip Mechanism.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.b**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.b

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.2.b
Attachment #1**

Initial Conditions: ONI-R10, Loss of AC Power, has been entered due to a Station Blackout. The Division 2 Diesel Generator started but tripped. Override of Division 2 Diesel Generator Non-LOCA Trips was not performed. Brkr EF1C07 was confirmed to be in the close position. The Diesel System Responsible System Engineer (RSE) has been directed to report to the Division 2 Diesel Generator Room as soon as possible to provide engineering support.

Initiating Cue: The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to restart Division 2 Diesel Generator in accordance with ONI-R10, Attachment 9, Division 2 Diesel Restoration. Steps 1 through 6 have been completed. You will be relieved as soon as a Non-Licensed Operator becomes available.

We are working on
either 1) simplifying the

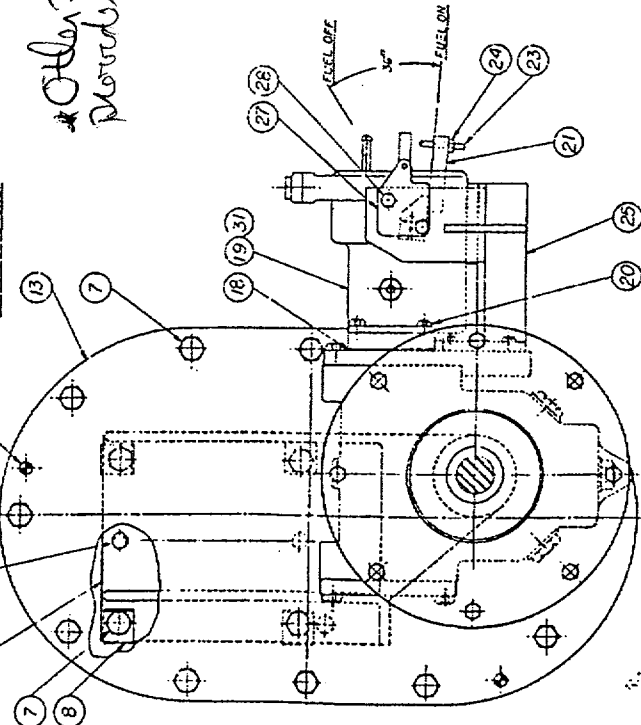
3) pictures on

2) obtaining an
actual photograph

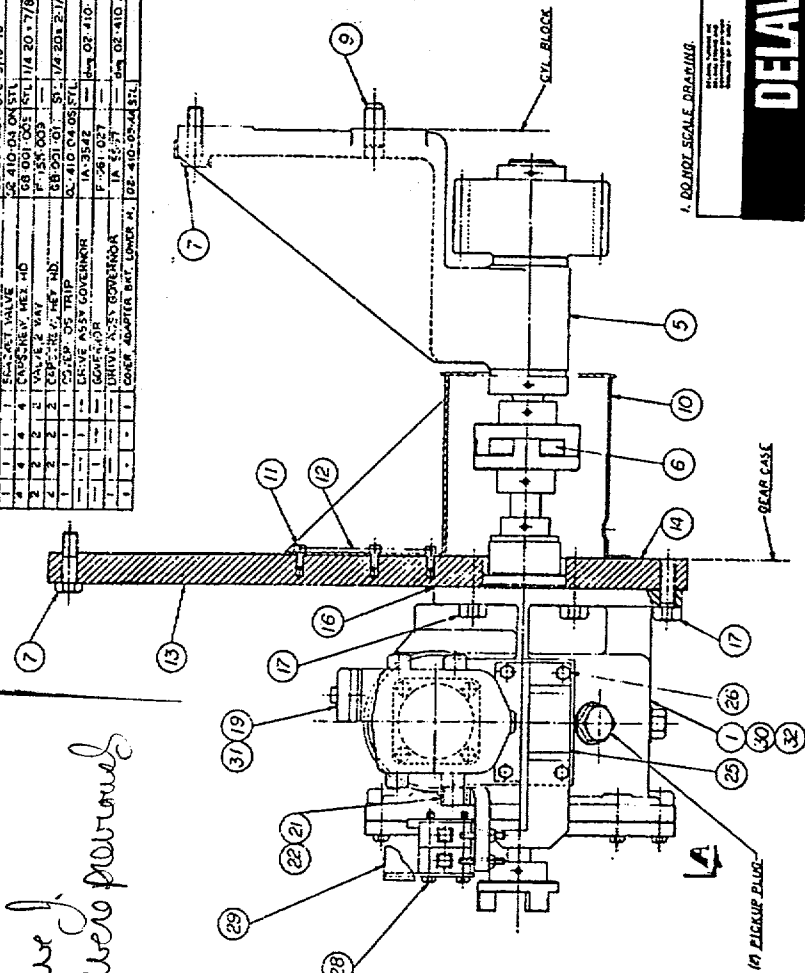
Bar J
Other pictures were provided

9 AFTER ALIGNMENT OF ACCESSORY DRIVE ASST
1033/64 PHILL. 2-1/2 DEEP
2-5/8 BORE CLEAN 2 DEEP
IN CRANKSET, BLOCK
255/1520 REIN. 1 DEEP
IN BRACKET ONLY

15 AT ASST AFTER COUPLING
RISING FULL 2-1/2 DEEP
255/1520 REIN. 2 DEEP
IN CRANKSET, BLOCK
255/1520 REIN. 1 DEEP
IN BRACKET ONLY



SECTION A-A



1. DO NOT SCALE DRAWING

DELAVAL

OVERSPEED TRIP ASSEMBLY

MATERIAL AND HARDNESS
SEE DRAWING
SCALE 1/2" = 1"

02-410-06

11-1

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

Facility: PERRY Task No: 201-565-05-01

Task Title: CRD Alternate Injection – (Start Second CRD Pump) JPM No: B.2.c

K/A Reference: 295031 EA1.10 (3.6/3.7)
201001 A2.08 (2.8 / 2.8)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

READ TO THE EXAMINEE

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

CAUTION

This JPM is a simulation. The student shall not physically manipulate plant equipment. If necessary, remind the student that this JPM is a simulation, not an actual performance.

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

Task Standard: CRD Pump B Minimum Flow Isolation Valve is closed, the CRD Pump Suction Filter is bypassed, and both Drive Water Filters are in service, in preparation for startup of the second CRD Pump in accordance with PEI-SPI 4.1.

Required Materials: Working copy of PEI-SPI 4.1, CRD Alternate Injection

General References: PEI-SPI 4.1, CRD Alternate Injection
Revision 0

Initial Conditions: The plant is being operated in accordance with PEI-B13, RPV Control (Non-ATWS). CRD Alternate Injection using a single CRD Pump has been performed. CRD Pump A is currently operating. A scram signal is present. The CRD HYDRAULICS FLOW CONTROL, 1C11-R600, is in MANUAL with its output set to 100%. The CRD DRIVE PRESS CONTROL VALVE, C11-F003, is full open. CRD Pump A Minimum Flow Isolation Valve, 1C11-F015A, has been unlocked and closed.

Initiating Cue: The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to raise CRD injection flow by starting the second CRD Pump in accordance with PEI-SPI 4.1, CRD Alternate Injection.

Time Critical Task: YES/NO

X

Validation Time: 15 minutes

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

PERFORMANCE INFORMATION

Critical steps are denoted with an asterisk (*) to the left of the step number and appear in **BOLD** letters. Failure to meet the standards for a critical step constitutes failure of the Job Performance Measure. The sequence of steps is assumed unless denoted in the Comments section of this JPM.

Step#	
_____ 1.	Obtains copy of PEI-SPI 4.1, CRD Alternate Injection, to be used in the field during task performance.
STANDARD:	PEI-SPI 4.1 obtained from OSC PEI File Cabinet located outside of the OSC at Control Complex 599'.
COMMENTS:	<div style="margin-left: 20px;">1. When candidate has located the OSC PEI File Cabinet, inform the candidate that he is not to break the locking tab on the PEI-SPI file cabinet.</div> <div style="margin-left: 40px;">Provide candidate with a copy of PEI-SPI 4.1.</div> <div style="margin-left: 20px;">2. If the OSC PEI File Cabinet locking tab is broken, inform the Perry examination representative so that a new locking tab can be installed.</div> <div style="margin-left: 20px;">3. Candidate should verbalize the tools that are required in the field to perform this task as listed in PEI-SPI 4.1 (one medium valve hook, one wirecutter, and two red valve locking tabs.</div>
SAT / UNSAT	START TIME: _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

_____ 2. Contact the Control Room.

STANDARD: Verifies the Control Room Operator is ready for the in-plant actions to be performed.

COMMENTS: **1. As the Control Room Operator, cue the candidate that Steps 1.0 through 8.5 are completed.**

2. The completion of Steps 1.0 through 8.5 was indirectly reported as completed in the Initial Condition summary.

3. All task steps will be performed at Intermediate Building 574', CRD Pump Room.

SAT / UNSAT

_____ * 3. **UNLOCK and CLOSE Pump B Minimum Flow Isolation 1C11-F015B.**

STANDARD: Locates the correct valve; describes action to cut the locking tab; and, stating the desired final position of the valve (closed), operates the valve in the clockwise direction.

COMMENTS: **1. All PEI valves in the field are identified with a metal valve tag consisting of a gold background with black lettering.**

2. Cue the candidate that Pump B Minimum Flow Isolation Valve, 1C11-F015B, is unlocked and closed.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

 * 4. **Verify the following valves are open:**

- **Pump Suction Filter Bypass 1C11-F116**
- **Pump Suction Filter Bypass 1C11-F117**

STANDARD: Locates the correct valves and, stating the desired final position of the valves (open), operates the valves in the counter clockwise direction.

COMMENTS: 1. Candidate may address the use of the valve hook in order to operate these valves.

 2. **Cue the candidate that Pump Suction Filter Bypass Valves, 1C11-F116 and 1C11-F117, are open.**

 3. Pump Suction Filter Bypass Valves, 1C11-F116 and 1C11-F117, are normally closed.

SAT / UNSAT

 * 5. **Verify the following valves are open:**

- **Drive Water Fltr A Inlet Isolation 1C11-F020A**
- **Drive Water Fltr A Outlet Isolation 1C11-F021A**
- **Drive Water Fltr B Inlet Isolation 1C11-F020B**
- **Drive Water Fltr B Outlet Isolation 1C11-F021B**

STANDARD: Locates the correct valves and, stating the desired final position of the valves (open), operates the valves in the counter clockwise direction.

COMMENTS: 1. Candidate may address the use of the valve hook in order to operate these valves.

 2. **Cue the candidate that:**

Drive Water Fltr A Inlet Isolation, 1C11-F020A, is open

Drive Water Fltr A Outlet Isolation, 1C11-F021A, is open

Drive Water Fltr B Inlet Isolation, 1C11-F020B, is open

Drive Water Fltr B Outlet Isolation, 1C11-F021B, is open

 3. During normal operation, either Drive Water Filter A or B is in operation with the other Drive Water Filter (B or A) isolated.

SAT / UNSAT

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

_____ 6. Contact the Control Room.

STANDARD: Notifies the Control Room Operator that Steps 8.6.1 and 8.6.2 for PEI-SPI 4.1 have been completed.

COMMENTS: **As the Control Room Operator, inform the candidate to return to the Control Room.**

SAT / UNSAT STOP TIME: _____

TERMINATING CUES: **CRD Pump B Minimum Flow Isolation Valve is closed, the CRD Pump Suction Filter is bypassed, and both Drive Water Filters are in service, in preparation for startup of the second CRD Pump in accordance with PEI-SPI 4.1.**

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
CONTROL ROOM SYSTEMS AND FACILITY WALKTHROUGH
JOB PERFORMANCE MEASURE B.2.c**

VERIFICATION OF COMPLETION

Job Performance Measure No. B.2.c

Examinee's Name: _____

Examiner's Name: _____

Date performed: _____

Results: Circle One SAT UNSAT

Time to complete: _____

Examiner's signature and date: _____ / _____

**PERRY NRC INITIAL LICENSE 2000-01 EXAM
JOB PERFORMANCE MEASURE B.2.c
Attachment #1**

- Initial Conditions:** The plant is being operated in accordance with PEI-B13, RPV Control (Non-ATWS). CRD Alternate Injection using a single CRD Pump has been performed. CRD Pump A is currently operating. A scram signal is present. The CRD HYDRAULICS FLOW CONTROL, 1C11-R600, is in MANUAL with its output set to 100%. The CRD DRIVE PRESS CONTROL VALVE, C11-F003, is full open. CRD Pump A Minimum Flow Isolation Valve, 1C11-F015A, has been unlocked and closed.
- Initiating Cue:** The Unit Supervisor directs you, as an in-plant operator, to coordinate with the Control Room to raise CRD injection flow by starting the second CRD Pump in accordance with PEI-SPI 4.1, CRD Alternate Injection.