

INITIAL SUBMITTAL OF THE ADMINISTRATIVE JPMS

FOR THE PRAIRIE ISLAND INITIAL EXAMINATION

THE WEEKS OF SEPTEMBER 10 AND 17, 2001

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: VERIFY SAFEGUARD COMPONENT ALIGNMENT IN THE CONTROL ROOM FOLLOWING SI

JPM NUMBER: 2001 NRC EXAM RO REV. 0
A.1.A

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: CRO 0000110501

K/A NUMBERS: 2.1.31

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☐ Actual Performance: ☒

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☒ Control Room: ☐

Other: ☐

Time for Completion: 12 Minutes Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 5/21/01

APPROVED BY: *J. Smut* **DATE:** 7-19-01

PERFORMANCE RESULTS:

SAT: ☐

UNSAT: ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

VERIFY SAFEGUARD COMPONENT ALIGNMENT IN THE CONTROL ROOM FOLLOWING SI		
JPM Element:	Number:	Remarks:
Total number of elements:	11	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	5	
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	6	
Critical steps	4	
Operational decisions required by candidate	2	Determines that RNO actions are required (twice)
Alternate paths required	0	
Consequences for not performing task correctly		
Failure to start 12 CS pump could result in exceeding containment design pressure since the opposite train containment spray system is inoperable. Failure to manually isolate containment may also contribute to increased leakage to the environment.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- 11 Containment Spray pump is tagged out of service for maintenance.
- A large Break LOCA has occurred.
- E-0 has been entered and completed through step 4.


INITIATING CUES:

- The Shift Supervisor directs you to **complete** step 5 of E-0.

The following windows below are **NOT** lit on the Control Board:


- 44103:B8
- 44103:C8
- 44104:D2
- 44104:A4
- 44104:A9
- 44104:A11-D11
- 44104:A15, B15

	A	B	C	D	E
1	11 SI PUMP RUNNING	12 SI PUMP RUNNING	RAVTSI 8803A OPEN	RAVTSI 8803B OPEN	
2	D1 RUNNING	D2 RUNNING	11 AFW PUMP RUNNING	12 AFW PUMP RUNNING	
3	11 RHR PUMP RUNNING	12 RHR PUMP RUNNING	RH TO RV 8803A OPEN	RH TO RV 8803B OPEN	
4	AFW TO 11 SG ISOL VLV OPEN	AFW TO 12 SG ISOL VLV OPEN	11 CC PUMP RUNNING	12 CC PUMP RUNNING	12 CL PUMP RUNNING
5	11 CNTNMT FAN COIL RUNNING	12 CNTNMT FAN COIL RUNNING	13 CNTNMT FAN COIL RUNNING	14 CNTNMT FAN COIL RUNNING	22 CLO PUMP RUNNING
6	121 CL HDR VLV C CLOSED	121 CL HDR VLV D CLOSED	11/12 FOU CLOWTR ORF B-P OPEN	12/14 FOU CLOWTR ORF B-P OPEN	
7	CLXOVER VLV A CLOSED	CLXOVER VLV B CLOSED			
8	11 CNTNMT SPRAY SYS RUNNING	12 CNTNMT SPRAY SYS RUNNING	CA TO CS 319+1 OPEN	CA TO CS 3193B OPEN	
9	CLOWTR TO 11 CC HX OPEN	CLOWTR TO 12 CC HX OPEN	11 CC DSC H VLV CLOSED	12 CC DSC H VLV CLOSED	
10	121 AX BD SPEC VENT RUNNING	122 AX BD SPEC VENT RUNNING			
11	11 SHIELD BLDG VENT RUNNING	12 SHIELD BLDG VENT RUNNING			
12			NOT USED		NOT USED

SI ACTIVE 

44103

	A	B	C	D	E
1	PRT TO GA 8125 CLOSED	PRT TO GA 8125 CLOSED	N2 TO PRT 8125 CLOSED	AM TO CNTNMT 1-8125 CLOSED	
2	LTDN ORIF 8140A CLOSED	LTDN ORIF 8140B CLOSED	LTDN ORIF 8141 CLOSED	LTDN ISOL 8147 CLOSED	
3	EX LTDN 8100A CLOSED	EX LTDN 8100B CLOSED			N2 TO ACC 8820 CLOSED
4	RCDT GA 8158A CLOSED	RCDT GA 8158B CLOSED	RCDT VENT 8158A CLOSED	RCDT VENT 8158B CLOSED	
5	RCDT DRS 8170A CLOSED	RCDT DRS 8170B CLOSED	SMP A DRS 8152A CLOSED	SMP A DRS 8152B CLOSED	
6	1 REAC BD INSTR AIR CLOSED	11 SOB DR HDR VLV CLOSED	12 SOB DR HDR VLV CLOSED	11 SOB ISOL VLV CLOSED	12 SOB ISOL VLV CLOSED
7	11 CNTNMT VAC BKR	12 CNTNMT VAC BKR	FW TO 11 SG ISOL VLV CLOSED	FW TO 12 SG ISOL VLV CLOSED	
8	11 PR STM SMP L/ISOL V CLOSED	11 PR LQ SMP L/ISOL V CLOSED	11 RC HOT LEO SMP L V CLOSED	11 SG SMP L/ISOL V CLOSED	12 SG SMP L/ISOL V CLOSED
9	CC TO EXC LTDN HX 1 V CLOSED		1 IN-SERV PRGE VLVs CLOSED		
10	1R11/1R12 SPLY VLS CLOSED	1R11/1R12 RET VLS CLOSED			
11	PERSONNEL OUTR AIR LK OPEN	PERSONNEL INER AIR LK OPEN	MAINT OUTR AIR LK OPEN	MAINT INER AIR LK OPEN	
12					
13					
14					
15	AFW TO 11 SG ISOL VLV CLOSED	AFW TO 12 SG ISOL VLV CLOSED		SMP A DSC AER SMP TH CLOSED	ANN DSC 10 CNT SMP OPEN

CONTAINMENT ISOLATION WASTE DISPOSAL 

44104

JPM PERFORMANCE INFORMATION

Required Materials:

General References: E-0 rev. 18

Task Standards: Manually align components as necessary to establish proper safeguard component alignment.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step:
Critical _____

Verify Safeguard Component Alignment:

- "SI NOT READY" lights – NOT LIT

Standard:

Candidate determines that all "SI NOT READY" lights are not lit with exception of previously out of service 11 CS pump.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:
Critical _____

Verify Safeguard Component Alignment:
"SI ACTIVE" lights – LIT – STATE ANY EXCEPTIONS

Standard:

Candidate states the following exceptions:
• 44103:B8 – "12 CNTNMT SPRAY SYS RUNNING"
• 44103:C8 – "CA TO CS 31941 OPEN"

Evaluator Cue:

WHEN the candidate states the exceptions, **THEN repeat** the exceptions back **AND direct** the candidate to continue implementing the step.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step:
Critical _____

Manually or locally align components, as necessary.
• Manually **open** CV-31941 "CAUSTIC STANDPIPE TO CNTMT SPRAY SUCTION".

Standard:

CV-31941 manually opened using CS-46124.

Evaluator Note:

This step is NOT critical since an adequate parallel flow path exists through CV-31938.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step:
Critical X

Manually or locally align components, as necessary.
• Manually **start** 12 Containment Spray Pump.

Standard:

12 Containment Spray Pump manually started using CS-46009.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: Critical _____	Verify Safeguard Component Alignment: "CONTAINMENT ISOLATION" lights – LIT – STATE ANY EXCEPTIONS
Standard:	Candidate states the following exceptions: <ul style="list-style-type: none">• 44104:D2 "LTDN ISOL CLOSED"• 44104:A4 "RCDT GA CLOSED"• 44104:A9 "CC TO EXC LTDN HX IV CLOSED"• 44104:A11-D11 "PERSONNEL AND MAINT AIRLOCK OPEN"• 44104:A15, B15 "AFW O 11/12 SG ISOL V CLOSED"
Evaluator Note:	44104:A11-D11 "PERSONNEL AND MAINT AIRLOCK OPEN" AND 44104:A15, B15 "AFW O 11/12 SG ISOL V CLOSED" are normal exceptions for this condition. The remainders are not in the normal lineup and should be closed manually.
Evaluator Cue:	<u>WHEN</u> the candidate states the exceptions, <u>THEN repeat</u> the exceptions back <u>AND direct</u> the candidate to continue implementing the step.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: Critical <u> X </u>	Manually or locally align components, as necessary. <ul style="list-style-type: none">• Close CV-31339 "LTDN LINE CNTMT ISOL" using CS-46166.
Standard:	CV-31339 "LTDN LINE CNTMT ISOL" closed using CS-46166 .
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step:

Critical X

Manually or locally align components, as necessary.

- **Close** CV-31545 "RCDT GAS ANLZR HDR ISOL" using **CS-46235**.

Standard:

CV-31545 "RCDT GAS ANLZR HDR ISOL" closed using **CS-46235**.

Performance:

SATISFACTORY **UNSATISFACTORY**

Comments:

Performance Step:

Critical X

Manually or locally align components, as necessary.

- **Close** MV-32095/CV-31252 "EXCESS LTDN HX CC INLT/OUTL" using **CS-46030**.

Standard:

MV-32095/CV-31252 "EXCESS LTDN HX CC INLT/OUTL" closed using **CS-46030**.

Performance:

SATISFACTORY **UNSATISFACTORY**

Comments:

Performance Step:

Critical

Verify Safeguard Component Alignment:
Category I doors – CLOSED

Standard:

Category I doors verified closed on "A" panel.

Performance:

SATISFACTORY **UNSATISFACTORY**

Comments:

Performance Step:
Critical _____

Verify Safeguard Component Alignment:
Check Operations Log for any ventilation openings that must be closed
within 6 minutes.

Standard:

Operations Log on RO desk checked for openings.

Evaluator Note:

There are no ventilation openings.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step:
Critical _____

Verify Safeguard Component Alignment:
Check Cooling Water Pressure, Loop A AND Loop B – Greater than 65
PSIG.

Standard:

Loop A and B Cooling Water pressure verified > 65 psig on "A" panel.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Terminating Cues: When Cooling Water Pressure is verified greater than 65 psig.

Stop Time: _____

SIMULATOR SETUP

Instructor Guide:

- **Initialize** simulator to IC-10.
- **Place** the simulator in RUN AND **allow** ERCS to initialize.
- **Enter** pre-existing malfunctions (**Relative order of 0**).
- **Place** 11 CS pump in PULLOUT using **CS-46008** AND hang an information card on the control switch.
- **Enter** the large break LOCA malfunction (**Relative order of 1, Trigger 1**).
- **Throttle** AFW to 100 gpm from each AFW pump to prevent low discharge pressure trip during JPM administration. DO NOT close AFW to SG MVs completely as this will generate another SI NOT READY light.
- **Reset** Train A AND B Containment Isolation Using **CS-46083** AND **CS-46084**.
- **Enter** the CI Annunciator override (**Relative Order 2, Trigger 2**).
- **Open** CV-31339 "LTDN LINE CNTMT ISOL" using **CS-46166**.
- **Open** CV-31545 "RCDT GAS ANLZR HDR ISOL" using **CS-46235**.
- **Open** MV-32095/CV-31252 "EXCESS LTDN HX CC INLT/OUTL" using **CS-46030**.
- IF desired, THEN **snap** to an available IC.
- **Place** the simulator in FREEZE.
- **Peer-check** the simulator setup.
- **Conduct** turnover.
- **Place** the simulator in RUN.
- **Administer** JPM.

SIMULATOR SETUP

<i>Relative Order</i>	<i>System or Panel Drawing</i>	<i>TYPE</i>	<i>CODE</i>	<i>Severity or Value</i>	<i>Event Trigger</i>	<i>TIMING</i>	<i>DESCRIPTION</i>
0	SIMCS01	Malfunction	CS03B	Insert			12 CS Pump fails to auto start.
0	SIMCS01	Malfunction	CS02B	Insert			CV-31941 fails to auto open
0	A-A3B	AO Override	AO-1PR:717:P1	16			Control board cont. press = 28
0	A-A3B	AO Override	AO-1PR:718:P1	16			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101401	94			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101403	94			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101501	94			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101402	49			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101502	49			Control board cont. press = 28
0	A-A3A	AO Override	AO-4101503	49			Control board cont. press = 28
0		ERCS Pt. Ovrld	CP-1P1010A	28			ERCS cont. press =28
0		ERCS Pt. Ovrld	CP-1P1011A	28			ERCS cont. press =28
0		Override LO	LO-44007G	OFF			Simulate discharge MV OOS
0		Override LO	LO-44007R	OFF			Simulate discharge MV OOS
1		Malfunction	RC08B	100	1		Large Break LOCA
2	B1-B23	Annun Malfunction	M47018:0505W	ON	2		Containment Isolation Annunciator On

TURNOVER SHEET

INITIAL CONDITIONS:

- 11 Containment Spray pump is tagged out of service for maintenance.
- A large Break LOCA has occurred.
- E-0 has been entered and completed through step 4.

INITIATING CUES:

- The Shift Supervisor directs you to **complete** step 5 of E-0.

Number: 1E-0	Title: REACTOR TRIP OR SAFETY INJECTION	Revision Number: REV. 18
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STEP	ACTION/EXPECTED RESPONSE	RESPONSE NOT OBTAINED
5	<p>Verify Safeguard Component Alignment:</p> <ul style="list-style-type: none"> • "SI NOT READY" lights - NOT LIT • "SI ACTIVE" lights - LIT - STATE ANY EXCEPTIONS • "CONTAINMENT ISOLATION" lights - LIT - STATE ANY EXCEPTIONS • Category I doors - CLOSED • Check Operations Log for any ventilation openings that must be closed within 6 minutes • Check Cooling Water Pressure, Loop A <u>AND</u> Loop B - GREATER THAN 65 PSIG 	<p>Manually or locally align components, as necessary. Refer to ATTACHMENT G for containment isolation valve locations.</p> <ul style="list-style-type: none"> • Restore cooling water pressure per C35 AOP1, LOSS OF PUMPING CAPACITY OR SUPPLY HEADER WITH SI.
6	<p>Check If Main Steamlines are Isolated:</p> <ul style="list-style-type: none"> a. MSIVs <u>AND</u> bypasses - CLOSED b. Containment instrument air valves, (CV-31740 <u>AND</u> CV-31741) - CLOSED 	<ul style="list-style-type: none"> a. Check if MSIV isolation is required. <u>IF</u> required, <u>THEN</u> close MSIVs <u>AND</u> bypass valves. <u>IF NOT</u>, <u>THEN</u> go to Step 7. b. <u>IF</u> containment pressure is - GREATER THAN 17 psig, <u>THEN</u> close instrument air valves .

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: DETERMINE TS OPERABILITY OF EQUIPMENT DURING
PERFORMANCE OF SURVEILLANCE PROCEDURE.

JPM NUMBER: 2001 NRC EXAM RO **REV.** 0
A.1.B

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: 0080030201000

K/A NUMBERS: 2.1.33

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☐ Actual Performance: ☒

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☒ Control Room: ☐

Other: ☐

Time for Completion: 15 Minutes Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/22/01

APPROVED BY: *DS* **DATE:** 7-19-01

PERFORMANCE RESULTS:

SAT: ☐

UNSAT: ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

DETERMINE TS OPERABILITY OF EQUIPMENT DURING PERFORMANCE OF SURVEILLANCE PROCEDURE.		
JPM Element:	Number:	Remarks:
Total number of elements:	20	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	7	
Verifiable actions directed to be taken by the candidate	1	
System status verification elements requiring no actions	12	
Critical steps	5	
Operational decisions required by candidate	4	<ul style="list-style-type: none"> • Candidate must determine that stroke times fall within accepted range (3 times) • Candidate must determine that the Pump performance is in the action range.
Alternate paths required	0	
Consequences for not performing task correctly		
If the candidate fails to identify that the CC pump is in the action range, the system will remain in an unidentified degraded condition. This could result in inadequate system performance during a design base accident condition.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- It is the third quarter of 2001
- You are an extra Reactor Operator assigned to this shift.
- SP-1155 "Component Cooling Water System Quarterly Test" is scheduled for this shift.

INITIATING CUES:

- The Shift Supervisor directs you to take 10-15 minutes to **review** SP-1155 in preparation for performance of this SP. (This will substitute for the pre-job brief per step 7.1)
- Once your review is complete, you are to **continue** with SP-1155 beginning at step 7.3.2.
- **Report** your results to the Shift Supervisor.

Note: Consider the stopwatch provided to be properly calibrated.

JPM PERFORMANCE INFORMATION

Required Materials: Calibrated Stopwatch, SP-1155 completed up to step 7.3.2, completed white copy of Form 17-4048, CALIBRATED TOOL USAGE, attached to procedure

General References: SP-1155 rev. 55

Task Standards: Correctly identify the inoperable status of 11 CC Pump.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step:

(Step 7.3.2)

Critical _____

Verify the following valves are OPEN:

MV-32200, 11 CC SURGE TNK TO 11 CC PUMP

MV-32201, 11 CC SURGE TNK TO 12 CC PUMP

Standard:

Candidate checks control board red light "ON" and green light "OFF" for MV-32200 and MV-32201 and indicates by initialing step.

Performance:

SATISFACTORY _____

UNSATISFACTORY _____

Comments:

Performance Step:

(Step 7.3.3)

Critical _____

Verify the following pumps are OFF:

11 RHR Pump

12 RHR Pump

Standard:

Candidate checks control board green light "ON" and red light "OFF" for 11 and 12 RHR Pump and indicates by initialing step.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:

(Step 7.3.4)

Critical _____

Record the flow from 4100803, 11 CC HX OUTL FI.

_____ gpm

Standard:

Candidate checks indicator 4100803 on control board and records reading of 2700 +/- 50 gpm.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

NOTE:

CLOSING MV-32201 may result in the following alarms:

- 47016-0403, 12 RHR PUMP CC WTR LO FLOW
- 47018-0402, 12 SI PUMP CC WTR LO FLOW
- 47019-0402, 12 CS PUMP CC WTR LO FLOW

Performance Step:

Critical X

(Step 7.3.5)

Time MV-32201, 11 CC SURGE TNK TO 12 CC PUMP, CLOSING
using CS-46035.

Reference Time: 9.1 sec

Reference Range: 6.8 to 11.4 sec. CLOSE time: _____ sec

Max time: 20 sec.

CLOSE time within the Reference Range: YES/NO (Circle One)

Remote and local valve indications are in agreement (First quarter, **NA** other quarters).
YES/NO/NA (Circle One)

Standard:

Candidate times MV-32201 closing time within the reference range, records time and circles "YES". Candidate circles "NA" for local indication since this is the 3rd quarter.

Evaluator Note:

- Successful timing of MV-32201 within the max time is required to satisfy this critical step.
- IF the first timing does not fall within the reference range, THEN the candidate should retest the valve immediately per step 1.2.2 of SP-1155 and the system engineer notified.
- Some low CC flow Annunciators will alarm during the performance of this step. These are expected alarms.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:

Critical X

(Step 7.3.6)

Record the flow from 11 CC HX OUTL FI, a minimum of 260 gpm ensures **CC-3-3** is OPEN.

4100803: _____ gpm

Min flow: 260 gpm

Greater than or equal to Minimum flow: YES/NO (**Circle One**)

Standard:

Candidate checks indicator 4100803 on control board, records reading of 2650 +/- 50 gpm and circles YES.

Evaluator Note:

Successful identification of flow greater than the minimum flow (260 gpm) is required to satisfy this critical step.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:

Critical X

(Step 7.3.7)

Time MV-32201, 11 CC SURGE TNK TO 12 CC PUMP, OPENING using **CS-46035**.

Reference Time: 9.4 sec

Reference Range: 7.1 to 11.8 sec. OPEN time: _____ sec.

Max time: 20 sec.

OPEN time within the Reference Range: YES/NO (**Circle One**)

Remote and local valve indications are in agreement (First quarter, **NA** other quarters). YES/NO/NA (**Circle One**)

Standard:

Candidate times MV-32201 opening time within the reference range, records time and circles "YES". Candidate circles "NA" for local indication since this is the 3rd quarter.

Evaluator Note:

- Successful timing of MV-32201 within the max time is required to satisfy this critical step.
- IF the first timing does not fall within the reference range, THEN the candidate should retest the valve immediately per step 1.2.2 of SP-1155 and the system engineer notified.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:
Critical _____

(Step 7.3.8)
Perform Independent Verification that **MV-32201** is OPEN.

Standard:

Candidate asks for Independent Verification of MV-32201.

Evaluator Cue:

When asked to IV MV-32201, **repeat** back the request, **initial step 7.3.8** and then **state** "The IV of MV-32201 has been completed".

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:
Critical _____

(Step 7.3.9)
Time MV-32088, 11 CC SURGE TANK VENT, CLOSING using
CS-46024.

Reference time: 7.0 sec.
CLOSE time: _____ sec.

Standard:

Candidate times MV-32088 closing and records this time on SP-1155.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:

(Step 7.3.10)

Critical _____

Time MV-32088, 11 CC SURGE TANK VENT, OPENING using
CS-46024.

Reference time: 7.8 sec.

OPEN time: _____ sec.

Standard:

Candidate times MV-32088 opening and records this time on SP-1155.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:

(Step 7.3.11)

Critical _____

Time MV-32375, RX M-U TO 11 CC SURGE TNK, CLOSING using
CS-46025.

Reference time: 7.3 sec.

CLOSE time: _____ sec.

Standard:

Candidate times MV-32375 closing and records this time on SP-1155.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step:
Critical _____

(Step 7.3.12)

Time MV-32375, RX M-U TO 11 CC SURGE TNK, OPENING
using CS-46025.

Reference time: 7.8 sec.
OPEN time: _____ sec.

Standard:

Candidate times MV-32375 opening and records this time on SP-1155.

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step:
Critical _____

(Step 7.3.13)

Verify 11 CC Pump has been RUNNING for at least five (5)
minutes, then **record** the following data:

11 CC Pump Disch Press	PI-11261: _____ psi
11 CC Pump Suct Press	PI-11637: _____ psi
11 CC HX OUTL FLOW	4100803: _____ gpm
11 CC Hx Outlet Flow ERCS	1F0619A: _____ gpm

Standard:

Candidate asks the local operator to take 11 CC pump data, takes control board data and
records results on SP-1155.

PI-11261: 111 psi
PI-11637: 36 psi
4100803: 2670 +/- 50 gpm
1F0619A: 2670 +/- 50 gpm

Evaluator Cue:

When the candidate requests local readings, **THEN report** as the Aux. Building Operator
that:

PI-11261 = 111 psi
PI-11637 = 36 psi

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: (Step 7.3.14)
Critical _____ **Subtract (PI-11637) from (PI-11261) and plot that psi and the gpm from (ERCS 1F0619A) on Figure 1, 11 Component Cooling Pump Performance Curve.**

Standard: Candidate performs calculation and plots point on Figure 1 within the range indicated on page 12 of this JPM.

Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: (Step 7.3.15)
Critical X **Check that the plot on Figure 1 is in the Acceptable Range.**

Standard: Candidate determines that the plot on Figure 1 is **NOT** within the Acceptable Range and circles "NO".

Evaluator Note: Successful identification of the plot falling in the action range is required to satisfy this critical step.

Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: Report condition to the Shift Supervisor so the actions of step 1.2.6 can be initiated.
Critical X (step 1.2.6)
IF the head & flow of a centrifugal pump is within the action range, **THEN**:

- Declare the pump inoperable and enter applicable Tech Spec LCO.
- Notify the system engineer.
- Issue a WO.

Standard: Condition reported to the Shift Supervisor.

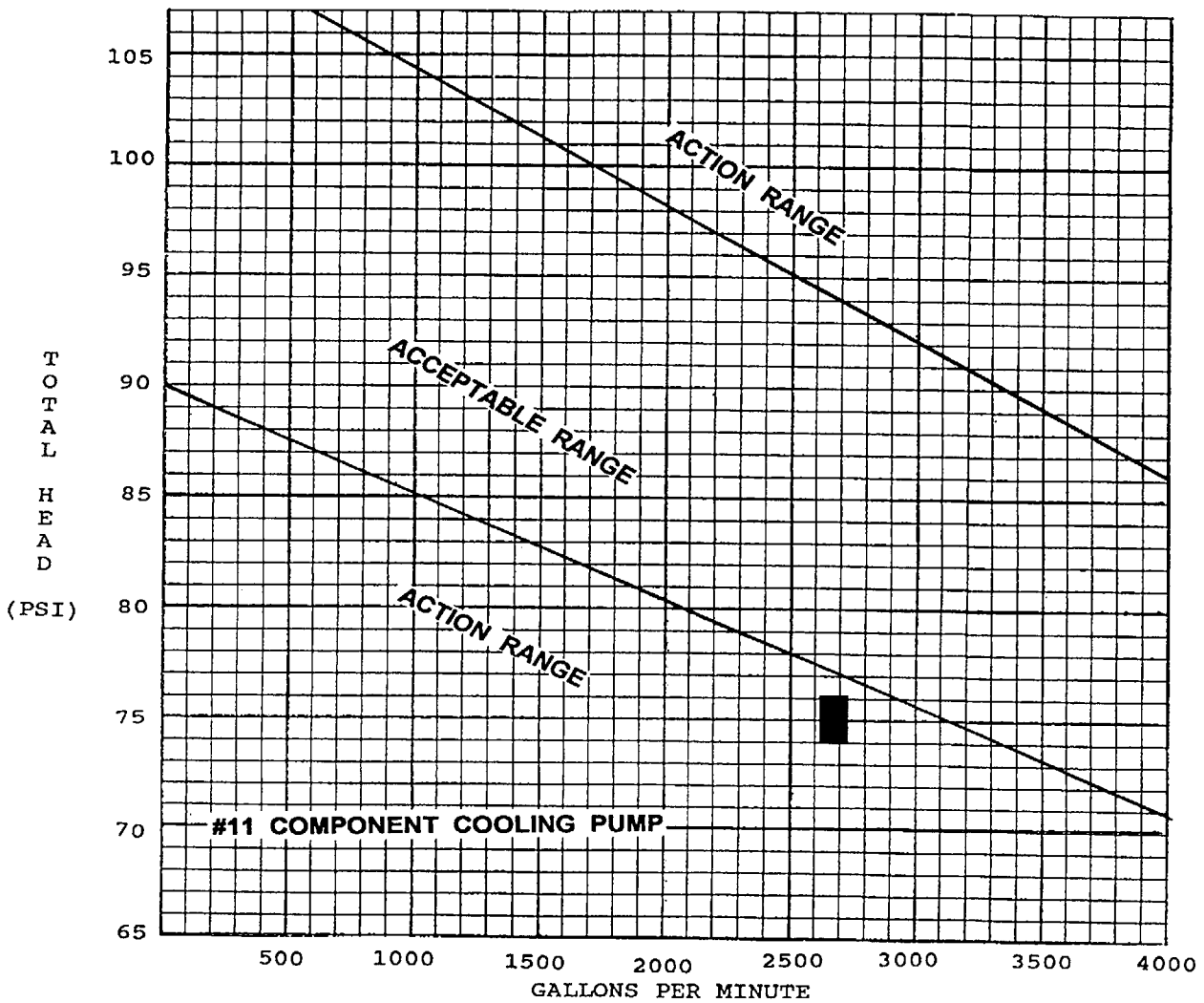
Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____

Comments: _____

Terminating Cues: When the pump flow condition of 11 CC pump has been reported to the Shift Supervisor.

Stop Time: _____

Figure 1: 11 Component Cooling Pump Performance Curve



SIMULATOR SETUP

Instructor Guide:

- **Reset** the simulator to IC-10, **place** in RUN, AND **verify** the following conditions.
 - a. RCS boron display = 814 ppm.
 - b. MOC ΔI displayed.
 - c. Bank D step counters at 218, all others 228.
 - d. All charts advanced and cleared of previous trends.
 - e. ERCS is on-line and functional with alarms acknowledged/cleared.
- **Input** relative order of 0 simulator actions.
- **Verify** a stopwatch is available and in working order.
- **Start** 11 CC pump using **CS-46036**.
- **Verify** the associated CC HX cooling water inlet valve OPENS: (**MV-32145**)

NOTE:

WHEN the CC pump is stopped, THEN hold the control switch in the "STOP" position until CC System pressure stabilizes above 75 psig.

- **Stop** 12 CC pump using **CS-46307**.
- **Close** the associated CC HX cooling water inlet valve **MV-32146** using **CS-46047**.
- **Place** the following ERCS points on display on the "G" panel:

11 RHR HX CC INLT FLOW	1F0610A
11 RHR HX CC OUTL FLOW	1F0611A
12 RHR HX CC INLT FLOW	1F0612A
12 RHR HX CC OUTL FLOW	1F0613A
11 CC OUTL FLOW	1F0619A
12 CC OUTL FLOW	1F0620A
- **Initial** steps of SP-1155 up to and including step 7.3.1. AND **Record** the following values in the appropriate steps.
 - Step 6.8 = 1800 gpm.
 - Step 7.2.2 = 90 deg F.
 - Step 7.2.6 = 14.8 sec and circle "YES".
 - Step 7.2.7 = 2.7 sec.
- **Peer-check** simulator setup.
- **Conduct** turnover with candidate and allow him/her 10-15 minutes to review SP-1155.
- **Administer** JPM.
- IF JPM is to be used for subsequent candidates, THEN **verify** the existing conditions meet the desired initial conditions AND **administer** the JPM without resetting the simulator.

SIMULATOR SETUP

[illegible]

TURNOVER SHEET

INITIAL CONDITIONS:

- It is the third quarter of 2001
- You are an extra Reactor Operator assigned to this shift.
- SP-1155 "Component Cooling Water System Quarterly Test" is scheduled for this shift.

INITIATING CUES:

- The Shift Supervisor directs you to take 10-15 minutes to **review** SP-1155 in preparation for performance of this SP. (This will substitute for the pre-job brief per step 7.1)
- Once your review is complete, you are to **continue** with SP-1155 beginning at step 7.3.2.
- **Report** your results to the Shift Supervisor.

- ***Note: Consider the stopwatch provided to be properly calibrated.***

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: PREPARE AN ISOLATION FOR A LEAKING HEAT EXCHANGER

JPM NUMBER: 2001 NRC EXAM RO A.2 **REV.** 0

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: CRO 1190120301000

K/A NUMBERS: 2.2.13 / 2.1.24 / 2.1.29

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 15 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 7/19/01

APPROVED BY: *D. Smith* **DATE:** 7/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

PREPARE AN ISOLATION FOR A LEAKING HEAT EXCHANGER		
JPM Element:	Number:	Remarks:
Total number of elements:	8	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	8	Documentation of the 8 valves involved.
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	0	
Critical steps	4	All 4 valves associated with the RCS and CC sides of the HX are required to be closed to adequately isolate the HX.
Operational decisions required by candidate	0	
Alternate paths required	0	
Consequences for not performing task correctly		
Failure to properly isolate the Heat Exchanger could result in personnel injury or equipment damage.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Unit 1 is at 98% power.
- An RCS leak has developed in 11 Letdown Heat Exchanger.
- The location of the leak has been determined by the operating crew per 1C4 AOP1.
- Normal Letdown has been isolated and Excess Letdown has been established per C12.1 AOP2.

INITIATING CUES:

- The Shift Supervisor directs you to **prepare** an isolation of 11 Letdown Heat Exchanger and **document** using the form below: (SOMS is out of service).
- **Inform** the Shift Supervisor when you are ready to prepare the cards for the isolation.

Component ID	Component Description	Normal Status	Isolation Status	Card Number
*VC-7-3	11 LTDN HX INLET	Open	Closed	1
*VC-7-4	11 LETDOWN HEAT EXCH – OUTLET	Open	Closed	2
*CC-12-4	11 LTDN HX CC OUTL	Open	Closed	7
*CC-12-3	11 LTDN HX CC INLT	Open	Closed	8

* Denotes critical valve.

JPM PERFORMANCE INFORMATION

Required Materials: Flow Diagrams X-HIAW-1-39 and NF-39245-2 (Make sure the drawings are legible)

General References: 1C4 AOP1, C12.1 AOP2, 5AWI 3.10.0

Task Standards: Both sides of 11 Letdown Heat Exchanger (CC and VC) are adequately isolated as indicated on the form on the turnover page.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

NOTE: This JPM involves conducting an isolation of a plant component and includes an example of an adequate isolation of this particular component. It is possible to satisfy the isolation using alternate isolations than those indicated. If this occurs, the isolation should be evaluated to determine it's adequacy and credit given if adequate.

NOTE: Once the candidate locates the correct P&ID, provide him with a laminated clean copy to ensure the valve numbers are legible.

Performance Step: Critical <u> X </u>	Determine isolation: Isolate Letdown to and from 11 Letdown Heat Exchanger.
Standard:	Flow diagram XH-1-39 referenced and letdown isolated by indicating VC-7-3 and VC-7-4 "CLOSED" on attached form.
Evaluator Note:	An alternate adequate isolation would also satisfy this critical step
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: Critical _____	Determine isolation: Isolate Letdown side of Heat Exchanger to the Drain Header
Standard:	Flow diagram XH-1-39 referenced and letdown side of HX isolated by indicating VC-29-4, VC-29-5, VC-29-6 and VC-29-7 "CLOSED" on attached form.
Evaluator Note:	This part of the isolation is not critical since these drains are tied to the non-aerated drain tank (atmospheric pressure) and it may be desirable to leave this valves untagged to later allow for draining of the HX.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: Critical <u> X </u>	Determine isolation: Isolate Component Cooling to and from 11 Letdown Heat Exchanger.
Standard:	Flow diagram NF-39245-2 referenced and Component Cooling isolated by indicating CC-12-3 and CC-12-4 "CLOSED" on attached form.
Evaluator Note:	An alternate adequate isolation would also satisfy this critical step. CC vent and drain valves within the boundary may be added but are not critical. They may be left untagged to later allow for draining of the HX.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Terminating Cues: When the candidate informs the Shift Supervisor that he/she is ready to prepare the cards for this isolation.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is at 98% power.
- An RCS leak has developed in 11 Letdown Heat Exchanger.
- The location of the leak has been determined by the operating crew per 1C4 AOP1.
- Normal Letdown has been isolated and Excess Letdown has been established per C12.1 AOP2.

INITIATING CUES:

- The Shift Supervisor directs you to **prepare** an isolation of 11 Letdown Heat Exchanger and **document** using the form below: (SOMS is out of service).
- **Inform** the Shift Supervisor when you are ready to prepare the cards for the isolation.

Component ID	Component Description	Normal Status	Isolation Status	Card Number

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: PREPARE FOR AN EMERGENCY CONTAINMENT ENTRY

JPM NUMBER: 2001 NRC EXAM RO A.3 REV. 0

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: CRO 1190100301

K/A NUMBERS: 2.3.10

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 15 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/26/01

APPROVED BY: *D. Smith* **DATE:** 7/20/01

PERFORMANCE RESULTS: SAT: ☐ UNSAT: ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

PREPARE FOR AN EMERGENCY CONTAINMENT ENTRY		
JPM Element:	Number:	Remarks:
Total number of elements:	10	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	10	Verified by documentation of the entry requirements on the turnover sheet.
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	0	
Critical steps	3	<ul style="list-style-type: none"> • Entry team equipped with dosimeters, TLD's, and a beta-gamma survey instrument. • Entry into the RC loops permission obtained from the Superintendent of Radiation Protection and Chemistry or his designee. • Entry made with the use of a MSA Ultralite II.
Operational decisions required by candidate	0	
Alternate paths required	0	
Consequences for not performing task correctly		
Failure to identify any one of the three critical requirements for this containment entry could result in personnel exceeding the 10CFR20 exposure limits.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Unit 1 is at 25% during startup.
- A 2.0 gpm RCS leak has been detected during the performance of the daily leak rate surveillance.
- Reactor power is being maintained at 25%.
- It is suspected that RC-1-1 and RC-1-2 are leaking by their seats into the RCDT.
- R-11 and R-12 are alarming **on-scale**.
- A team is being assembled to enter containment to attempt isolation of the leak (**located in A Loop RCP vault**)

INITIATING CUES:

- The Shift Supervisor directs you to **prepare** for an emergency containment entry per **F-2**.
- You are to **list** all requirements that must be met prior to containment entry.

[illegible]

JPM PERFORMANCE INFORMATION**Required Materials:****General References:** F-2 rev. 20**Task Standards:** At least 8 containment entry requirements identified**Start Time:** _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Requirements:	Yes	No
1. Entry team equipped with dosimeters, TLD's, and a beta-gamma survey instrument.		
2. Entry into the RC loops permission obtained from the Superintendent of Radiation Protection and Chemistry or his designee.		
3. Confirm that there is not flux mapping or incore detector movement in progress		
4. Confirm that the Shield Building Ventilation Systems are secured.		
5. Confirm that both the personnel and the maintenance airlocks are unlocked.		
6. One shield building door at each entry closed at all times.		
7. Pre-job briefing conducted.		
8. Personnel entering containment check in with the Control Room.		
9. Guidelines for heat stress reviewed		
10. Entry made with the use of a MSA Ultralite II.		

Items in bold are critical.

Performance Step:**Critical** _____**9.3.2 Emergency Entry (Mode 1 & 2)**

Emergency entry is defined as non-routine entry for inspection or operation such as a fire alarm or a limit switch position check.

A. Refer to the general requirements in this procedure Section 9.2.

Standard:

Candidate reads step.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:****Critical** X **9.2 Requirements**

Specific requirements for containment entry while at hot standby and power are spelled out in these procedures.

9.2.1

The entry team **SHALL** be equipped with dosimeters, TLD's, and a beta-gamma survey instrument.

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step:**Critical** X **9.2 Requirements****9.2.2**

Entry into the RC loops and Reactor Cavity **SHALL NOT** be permitted without permission from the Superintendent of Radiation Protection and Chemistry or his designee.

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** **UNSATISFACTORY** **Comments:**_____**Performance Step:****Critical** **9.2 Requirements****9.2.3**

Prior to containment entry, contact the Shift Supervisor to confirm the following:

- A. There is not flux mapping or incore detector movement in progress. Very high radiation dose rates and possible overexposures can be caused by the incore detectors.
- B. The Shield Building Ventilation Systems are secured.
- C. Both the personnel and the maintenance airlocks are unlocked.

Standard:

Candidate determines that these requirements apply and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** **UNSATISFACTORY** **Comments:**_____

Performance Step:**9.2 Requirements****Critical** _____**9.2.4**

If the unit is above cold shutdown, one shield building door at each entry **SHALL** be closed at all times.

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:****9.2 Requirements****Critical** _____**9.2.5**

Before entry, a pre-job briefing **SHALL** be conducted with those entering and Control Room personnel, as appropriate. This pre-job briefing **SHALL** include a discussion of all tour/work locations and anticipated radiation levels (PINGP 1112).

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step:**9.2 Requirements****Critical** _____**9.2.6**

All personnel entering the containment **SHALL** check in with the Control Room, or the designated person at the airlock, if posted.

When contacting Control Room prior to Containment entry at power, **ensure** all personnel are wearing a TLD and Electronic Dosimeter (ED) and the ED is turned on (number and mRem indicated within the window).

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**9.2 Requirements****Critical** _____**9.2.7**

All personnel should use discretion when temperatures are above 85 degrees. The guidelines for heat stress in the NSP PINGP Safety Manual should be reviewed. Backup teams and stay times may be required.

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**9.2 Requirements****Critical** _____**9.2.8**

When all personnel are out of the containment, the personnel and maintenance airlock hatches **SHALL** be locked.

Standard:

Candidate determines that this requirement applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:****9.3.2 Emergency Entry (Mode 1 & 2)****Critical** X

B. If R-11 and R-12 of the appropriate unit are:

1. Not alarming and normal readings, entry may be made without any respiratory protection.
2. **Alarming on scale, entry may be made with the use of a MSA Ultralite II.**
3. Alarming off scale, no entry may be made without the Supt. Rad Protection or designee appraisal and approval.

Standard:

Candidate determines that requirement (2) applies and documents by listing on the turnover sheet.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step:

9.3.2 Emergency Entry (Mode 1 & 2)

Critical _____

C. Observe the requirements of the Radiation Work Permit.

Standard:

Candidate reads step.

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:** _____**Terminating Cues:** When the candidate determines all F-2 requirements are listed.**Stop Time:** _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is at 25% during startup.
- A 2.0 gpm RCS leak has been detected during the performance of the daily leak rate surveillance.
- Reactor power is being maintained at 25%.
- It is suspected that RC-1-1 and RC-1-2 are leaking by their seats into the RCDT.
- R-11 and R-12 are alarming **on-scale**.
- A team is being assembled to enter containment to attempt isolation of the leak (**located in A Loop RCP vault**)

INITIATING CUES:

- The Shift Supervisor directs you to **prepare** for an emergency containment entry per **F-2**.
- You are to **list** all requirements that must be met prior to containment entry.

[illegible]

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: DETERMINE IMPACT OF FIRE OUTSIDE OF THE CONTROL ROOM

JPM NUMBER: 2001 NRC EXAM RO A.4 REV. 1

**RELATED PRA INFORMATION
(SEE PITC 2.3):** Fire in 715' of Aux Bldg (FA 59) / CDF 3.0%

TASK NUMBERS: CRO 0000670501000

K/A NUMBERS: 2.4.27

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 10 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☒ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/30/01

APPROVED BY: *D. Smart* **DATE:** 7/20/01

PERFORMANCE RESULTS: SAT: ☐ UNSAT: ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

DETERMINE IMPACT OF FIRE OUTSIDE OF THE CONTROL ROOM		
JPM Element:	Number:	Remarks:
Total number of elements:	8	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	1	References correct procedure
Verifiable actions directed to be taken by the candidate	7	
System status verification elements requiring no actions	0	
Critical steps	7	All directed actions are critical
Operational decisions required by candidate	3	<ul style="list-style-type: none"> Reactor trip Close MSIVs Isolate IA to Containment / disable head vent SVs.
Alternate paths required	0	
Consequences for not performing task correctly		
This is a PRA significant task that will result in failure of instrument air to containment and FRVs. It also results in a loss of main feedwater and the PRZR PORVs for feed and bleed. Additionally, fire in the DC panels could cause spurious opening of several RCS vent solenoids resulting in a small leak from the RCS. If the candidate fails to perform the critical tasks associated with this event, the plant could remain in, or progress to a degraded condition based on the expected failures.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Unit 1 and Unit 2 are at 100%
- A fire is occurring in a cable tray in the Aux Bldg 715' Unit 1 side. (Zone 19/Fire Area 59)
- Fire fighting efforts are underway per F5.
- The Unit 1 Lead is carrying out the actions specified in C47022-0611

INITIATING CUES:

- You are an extra operator who has been called to the control room to assist the Unit 1 Lead.
- Your examiner will act as the Unit 1 Shift Supervisor.
- The Unit 1 Lead asks you to **determine** the Impact of the fire per F5 Appendix D AND **make** recommendations to the Shift Supervisor based on your findings.

JPM PERFORMANCE INFORMATION

Required Materials: F5 Appendix D

General References: C47022-0611
F5 App D

Task Standards: Recommendations made to the SS to:

- Trip Unit 1
- Close MSIVs
- Turn OFF listed electrical supplies

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: Critical _____	Refer to F5 Appendix D, IMPACT OF FIRE OUTSIDE CONTROL/RELAY ROOM for guidance for continued plant operation.
Standard:	Procedure located (Control Room/Simulator) and Zone 19 (Fire Area 59) referred to.
Performance:	SATISFACTORY _____ UNSATISFACTORY _____
Comments:	_____

Performance Step: Trip Unit 1 and **CLOSE** MSIVs, **CV-31098** & **CV-31099** as the fire may cause a loss of remote closure capability.
Critical X

Standard: Recommendation made to the Unit 1 SS to trip Unit 1 and **CLOSE** MSIVs, **CV-31098** & **CV-31099**.

Evaluator Note: Acknowledge recommendation as Unit 1 SS.

Evaluator Cue: "Unit 1 is tripped. Both MSIVs are closed."

Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: Turn OFF the following RHR valve breakers to prevent spurious operation:
Critical X

- ❖ **MCC 1LA1-B2**, 1 RCS LP A HOT LEG RHR SPLY (OUTSIDE) MV-32165.
- ❖ **MCC 1LA2-C2**, 1 RCS LP B HOT LEG RHR SPLY (OUTSIDE) MV-32231.

Standard: Recommendation made to the Unit 1 SS to turn off breakers.

Evaluator Note: Acknowledge recommendation as Unit 1 SS.

Evaluator Cue: "MCCs 1LA1-B2 and 1LA2-C2 are turned off."

Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____

Comments: _____

Performance Step: Turn OFF the following DC Panel switches to isolate Instrument Air to Unit 1 containment and de-energize head vent solenoid power:
Critical X
❖ PNL 11, CKT 18, 125VDC PANEL 191.
❖ PNL 16, CKT 18, 125VDC PANEL 162.

Standard: Recommendation made to Unit 1 SS to turn off DC Panel switches.

Evaluator Note: Acknowledge recommendation as Unit 1 SS.

Evaluator Cue: "PNL 11, CKT 18 and PNL 16 CKT 18 are turned OFF"

Performance: SATISFACTORY _____ UNSATISFACTORY _____

Comments: _____

Terminating Cues: Switches on DC panel are turned off.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 and Unit 2 are at 100%
- A fire is occurring in a cable tray in the Aux Bldg 715' Unit 1 side. (Zone 19/Fire Area 59)
- Fire fighting efforts are underway per F5.
- The Unit 1 Lead is carrying out the actions specified in C47022-0611

INITIATING CUES:

- You are an extra operator who has been called to the control room to assist the Unit 1 Lead.
- Your examiner will act as the Unit 1 Shift Supervisor.
- The Unit 1 Lead asks you to **determine** the Impact of the fire per F5 Appendix D AND **make** recommendations to the Shift Supervisor based on your findings.

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: EVALUATE SHIFT STAFFING OPTIONS

JPM NUMBER: 2001 NRC EXAM SRO **REV.** 0
A.1.A

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: 355.ATI.13

K/A NUMBERS: 2.1.4

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 15 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☐ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/7/01

APPROVED BY: *D. Smart* **DATE:** 7/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

EVALUATE SHIFT STAFFING OPTIONS		
JPM Element:	Number:	Remarks:
Total number of elements:	5	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	0	
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	0	
Critical steps	5	Each option needs to be evaluated independently, however only one correct option needs to be identified to satisfy the critical task. Identifying an incorrect option will result in failure of this JPM.
Operational decisions required by candidate	5	
Alternate paths required	0	
Consequences for not performing task correctly		
If the candidate chooses an incorrect option, then NRC work hour restrictions will be exceeded without the proper approval. The NRC work hour restrictions are in place to help prevent human performance related events. Exceeding these restrictions increases the probability that human performance events will occur.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- It is 1700 on a Wednesday evening.
 - As the Unit 1 Shift Supervisor, you receive a phone call from the Reactor Operator who is scheduled for the night shift. He informs you that he is sick and will not be able to report to work.
 - The off-going (day shift) Reactor Operator (John Smith) had the duty since 0600 Wednesday morning and is scheduled for vacation tomorrow. It is his last shift of a three day run.
 - Your efforts to find a replacement Reactor Operator leave you with the following options: (All potential replacement RO's have declared themselves fit for duty)
1. **Jane Doe** ⇨ Had been on vacation for 5 days and can come in at 2300. The off-going (day shift) Reactor Operator (John Smith) has agreed to extend his shift until 2300.
 2. **Joe Blow** ⇨ Had just completed his 15th consecutive night shift this morning at 0600 and has agreed to come in immediately to take the duty.
 3. **Jim Jones** ⇨ Was in simulator training this morning from 0700-1000 and has agreed to come in immediately to take the duty. Prior to Wednesday morning, Jim had been on vacation for one week.
 4. **Jenny McCarthy** ⇨ Is a member of the Ops support pool who had worked today (0700-1500) and has agreed to come in immediately to take the duty. Jenny had worked 8 hour days on Monday and Tuesday (0700-1500)
 5. **Jack Stuff** ⇨ Is a member of the Ops support pool who has been at work since 1500 this afternoon and has agreed to take the duty. Jack had worked 8 hour afternoons on Monday and Tuesday (1500-2300).

INITIATING CUES:

- Using 5AWI 3.15.0 section 6.4 You are to **evaluate** each option AND **determine** which option(s) will prevent exceeding NRC work hour restrictions.
- **Inform** the examiner of your option(s) when complete.

JPM PERFORMANCE INFORMATION**Required Materials:** None**General References:** 5 AWI 3.15.0 Section 6.4

Task Standards: Determine that the only choices are option #3 (Jim Jones) **OR** option #5 (Jack Stuff) to fill the shift without exceeding NRC work hour restrictions. (Task is satisfied if only one option is correctly identified)

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Evaluator Note:

It is expected that the candidate will evaluate each option using the criteria listed in section 6.4.2 of 5 AWI 3.15. This section states:

Adequate shift coverage **SHALL** be maintained without routine heavy use of overtime. The objective **SHALL** be to have operating personnel work a nominal forty (40) hour week, while the plant is operating. However, in the event that unforeseen problems require substantial amounts of overtime to be used, or during extended periods of shutdown for refueling, major maintenance, or major plant modifications (design changes), on a temporary basis, the following NRC guidelines **SHALL** be followed:

- a. An individual should not be permitted to work more than sixteen (16) hours straight, excluding shift turnover time.
- b. Overtime should be limited for all nuclear plant (site) staff, including contract and contractor, personnel so that total work time does not exceed:
 1. Sixteen (16) hours in any twenty-four (24) hour period, excluding shift turnover time.
 2. Nor more than twenty-four (24) hours in any forty-eight (48) hour period, excluding shift turnover time.
 3. Nor more than eighty-four (84) hours in any seven (7) day period, excluding shift turnover time.
- c. Individuals should not be required to work more than fifteen (15) consecutive days without two (2) consecutive days off.
- d. A break of at least eight (8) hours, including shift turnover time, should be allowed between periods.
- e. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on shift.

Performance Step: 1**Critical** X

Evaluate option #1 using 5 AWI 3.15 section 6.4.2

Standard:

Candidate determines that option 1 will result in John Smith exceeding NRC work hour restrictions.

Evaluator Note:**The following table indicates criteria met or exceeded in this option:**

<i>Criteria:</i>	<i>John Smith:</i>	<i>Jane Doe:</i>
≤ 16 hours straight	No (17)	Yes (7)
≤ 16 hours in 24 hour period	No (17)	Yes (7)
≤ 24 hours in 48 hour period	No (29)	Yes(7)
≤ 84 hours in 7 day period	Yes (worst case 65)	Yes (worst case 31)
≤ 15 consecutive days	Yes (3)	Yes (1)
Break of ≥ 8 hours between periods	Yes (12)	Yes (120)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:****Performance Step: 2****Critical** X

Evaluate option #2 using 5 AWI 3.15 section 6.4.2

Standard:

Candidate determines that option 2 will result in Joe Blow exceeding NRC work hour restrictions.

Evaluator Note:**The following table indicates criteria met or exceeded in this option:**

<i>Criteria:</i>	<i>John Smith:</i>	<i>Joe Blow:</i>
≤ 16 hours straight	Yes (12)	Yes (12)
≤ 16 hours in 24 hour period	Yes (12)	Yes (12)
≤ 24 hours in 48 hour period	Yes (24)	Yes (24)
≤ 84 hours in 7 day period	Yes (36)	Yes (84)
≤ 15 consecutive days	Yes (3)	No (16)
Break of ≥ 8 hours between periods	Yes (12)	Yes (12)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step: 3**Critical** X

Evaluate option #3 using 5 AWI 3.15 section 6.4.2

Standard:Candidate determines that option #3 is a viable option that will **not** exceed any NRC work hour restrictions.**Evaluator Note:****The following table indicates criteria met or exceeded in this option:**

Criteria:	John Smith:	Jim Jones:
≤ 16 hours straight	Yes (12)	Yes (12)
≤ 16 hours in 24 hour period	Yes (12)	Yes (15)
≤ 24 hours in 48 hour period	Yes (24)	Yes (15)
≤ 84 hours in 7 day period	Yes (36)	Yes (15)
≤ 15 consecutive days	Yes (3)	Yes (2)
Break of ≥ 8 hours between periods	Yes (12)	Yes (8)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step: 4**Critical** X

Evaluate option #4 using 5 AWI 3.15 section 6.4.2

Standard:

Candidate determines that option #4 will result in Jenny McCarthy exceeding NRC work hour restrictions.

Evaluator Note:**The following table indicates criteria met or exceeded in this option:**

Criteria:	John Smith:	Jenny McCarthy:
≤ 16 hours straight	Yes (12)	Yes (12)
≤ 16 hours in 24 hour period	Yes (12)	No (20)
≤ 24 hours in 48 hour period	Yes (24)	No (28)
≤ 84 hours in 7 day period	Yes (36)	Yes (52)
≤ 15 consecutive days	Yes (3)	Yes (4)
Break of ≥ 8 hours between periods	Yes (12)	No (3)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step: 5**Critical** X

Evaluate option #5 using 5 AWI 3.15 section 6.4.2

Standard:Candidate determines that option #5 is a viable option that will **not** exceed any NRC work hour restrictions.**Evaluator Note:****The following table indicates criteria met or exceeded in this option:**

Criteria:	John Smith:	Jack Stuff:
≤ 16 hours straight	Yes (12)	Yes (15)
≤ 16 hours in 24 hour period	Yes (12)	Yes (15)
≤ 24 hours in 48 hour period	Yes (24)	Yes (23)
≤ 84 hours in 7 day period	Yes (36)	Yes (47)
≤ 15 consecutive days	Yes (3)	Yes (3)
Break of ≥ 8 hours between periods	Yes (12)	Yes (9)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

- Terminating Cues:**
- When the candidate states that option #3 (Jim Jones) OR option #5 (Jack Stuff) can be used to fill the shift without exceeding NRC work hour restrictions.
 - Identification of either option #3 OR option #5 is without incorrectly identifying another option will satisfy the critical criteria of this JPM.

Stop Time: _____

TURNOVER SHEET

INITIAL CONDITIONS:

- It is 1700 on a Wednesday evening.
 - As the Unit 1 Shift Supervisor, you receive a phone call from the Reactor Operator who is scheduled for the night shift. He informs you that he is sick and will not be able to report to work.
 - The off-going (day shift) Reactor Operator (John Smith) had the duty since 0600 Wednesday morning and is scheduled for vacation tomorrow. It is his last shift of a three day run.
 - Your efforts to find a replacement Reactor Operator leave you with the following options: (All potential replacement RO's have declared themselves fit for duty)
1. **Jane Doe** ⇨ Had been on vacation for 5 days and can come in at 2300. The off-going (day shift) Reactor Operator (John Smith) has agreed to extend his shift until 2300.
 2. **Joe Blow** ⇨ Had just completed his 15th consecutive night shift this morning at 0600 and has agreed to come in immediately to take the duty.
 3. **Jim Jones** ⇨ Was in simulator training this morning from 0700-1000 and has agreed to come in immediately to take the duty. Prior to Wednesday morning, Jim had been on vacation for one week.
 4. **Jenny McCarthy** ⇨ Is a member of the Ops support pool who had worked today (0700-1500) and has agreed to come in immediately to take the duty. Jenny had worked 8 hour days on Monday and Tuesday (0700-1500)
 5. **Jack Stuff** ⇨ Is a member of the Ops support pool who has been at work since 1500 this afternoon and has agreed to come in immediately to take the duty. Jack had worked 8 hour afternoons on Monday and Tuesday (1500-2300).

INITIATING CUES:

- Using 5AWI 3.15.0 section 6.4 You are to **evaluate** each option AND **determine** which option(s) will prevent exceeding NRC work hour restrictions.
- **Inform** the examiner of your option(s) when complete.

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: DETERMINE OPERABILITY OF EQUIPMENT DURING SURVEILLANCE
PROCEDURE REVIEW.

JPM NUMBER: 2001 NRC EXAM SRO **REV.** 0
A.1.B

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: 0080030201000

K/A NUMBERS: 2.1.33

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☐ Actual Performance: ☒

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

 Simulator: ☐ Control Room: ☐

 Other: ☒

Time for Completion: 20 Minutes Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☐ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/22/01

APPROVED BY: *JS* **DATE:** 3/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

DETERMINE OPERABILITY OF EQUIPMENT DURING SURVEILLANCE PROCEDURE REVIEW.		
JPM Element:	Number:	Remarks:
Total number of elements:	6	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	0	
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	6	
Critical steps	2	<ul style="list-style-type: none"> Identify 11 CC pump inoperable Identify need to analyze CV-31252
Operational decisions required by candidate	Numerous	<ul style="list-style-type: none"> Candidate must determine that stroke times fall within accepted range Candidate must determine that the Pump performance is in the action range. Candidate must determine operability of CV-31252
Alternate paths required	0	
Consequences for not performing task correctly		
If the candidate fails to identify that the CC pump is in the action range, the system will remain in an unidentified degraded condition. This could result in inadequate system performance during a design base accident condition.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Both units are at 100%.
- It is the third quarter of 2001.
- You are the Unit 1 Shift Supervisor.
- SP-1155 "Component Cooling Water System Quarterly Test" has just been completed.

INITIATING CUES:

- You are to **complete** a review of SP-1155 AND **report** your results to your examiner.

JPM PERFORMANCE INFORMATION

Required Materials: SP-1155 completed as indicated in JPM setup, completed white copy of Form 17-4048, CALIBRATED TOOL USAGE, attached to procedure

General References: SP-1155 rev. 55

Task Standards: Correctly identify the inoperable status of 11 CC Pump and identifies that CV-31252 (11 Excess Letdown HX CC Outlet CV) needs additional analysis within 96 hours or declared inoperable.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

JPM Setup:

1. Obtain a copy of the latest revision of SP-1155 "COMPONENT COLING WATER SYSTEM QUARTERLY TEST"
2. Fill in the following data in the appropriate steps of SP-1155:

- 6.8 = 1800 gpm
- 7.2.2 = 90 deg F
- 7.2.6 = 14.8 sec and circle "YES"
- 7.2.7 = 2.7 sec
- 7.3.4 = 2700 gpm
- 7.3.5 = 9.0 sec and circle "YES" & "NA"
- 7.3.6 = 2650 gpm and circle "YES"
- 7.3.7 = 9.2 sec and circle "YES" & "NA"
- 7.3.9 = 7.1 sec
- 7.3.10 = 7.7 sec
- 7.3.11 = 7.3 sec
- 7.3.12 = 7.7 sec
- 7.3.13
 - PI-11261 = 111 psi
 - PI-11637 = 36 psi
 - 4100803 = 2670 gpm
 - 1F0619A = 2670 gpm
- 7.3.19 = 26.0 sec and circle "YES" & "NA"
- 7.3.20 = 28.2 sec and circle "NA"

- 7.3.21 = 40.1 sec and circle "YES" & "NA"
- 7.3.23 = 0900
- 7.3.24 = 52.7 sec and circle "YES" & "NA"
- 7.3.25 = 55.3 sec and circle "YES" & "NA"
- 7.3.27 = 10.6 sec and circle "NA"
- 7.3.28 = 3.4 sec and circle "NA"
- 7.3.29 = 9.8 sec and circle "YES" & "NA"
- 7.3.30 = 2.9/3.1 sec and circle "NO" & "NA"
- 7.3.32 = 9.4 sec and circle "YES" & "NA"
- 7.3.33 = 2900 gpm and circle "YES"
- 7.3.34 = 2900 gpm and circle "YES"
- 7.3.35 = 9.6 sec and circle "NA"
- 7.3.36 = 8.0 sec and circle "YES" & "NA"
- 7.3.37 = 2900 gpm and circle "YES"
- 7.3.38 = 2900 gpm and circle "YES"
- 7.3.39 = 9.4 sec and circle "NA"
- 7.3.40 = 45.0 sec and circle "NA"
- 7.3.41 = 53.5 sec and circle "NA"
- 7.3.43 = 53.5 sec and circle "NA"
- 7.3.46
 - PI-11262 = 116 psi
 - PI-11639 = 36 psi
 - 4100903 = 2900 gpm
 - 1F0620A = 2900 gpm
- 7.3.48 = Circle "YES"
- 7.3.50 = Circle "YES"
- 7.3.52 = 28.3 sec and circle "NA"
- 7.3.53 = 27.8 sec and circle "YES" & "NA"
- 7.3.55 = 8.8 sec and circle "YES" & "NA"
- 7.3.56 = 2900 gpm and circle "YES"
- 7.3.57 = 9.4 sec and circle "YES" & "NA"
- 7.4.2 = 90 deg F
- 7.4.6 = 13.5 sec and circle "YES"
- 7.4.7 = 3.0 sec
- 7.5.1 = Circle "YES" twice
- 7.5.2 = Circle "YES" twice
- 7.6 = 205 gpm

3. Initial all remaining steps of SP-1155 with the following exceptions:

- 7.3.14 = Leave blank
- 7.3.15 = Do not circle anything
- 7.3.17 = Do not circle anything
- 7.9 = Leave blank
- 7.10 = Leave blank

4. Fill in the following data into Table 1 "11 CC PUMP & MOTOR VIBRATION DATA":

11

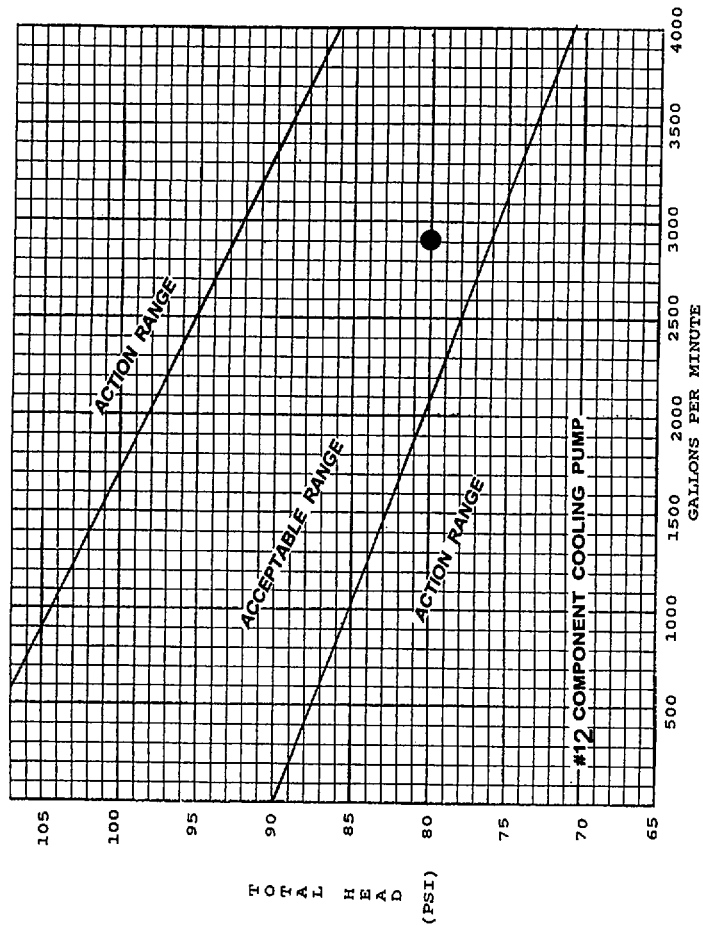
Bearing	Load		Full Flow
	Pickup Position		Actual
			in/sec
Outboard Motor	A	H	.04
		V	.03
		A	.04
Inboard Motor	B	H	.04
		V	.03
† Inboard Pump	C	H	.46
		V	.78
† Outboard Pump	D	H	.44
		V	.80
		A	.50

5. Fill in the following data into Table 2 "12 CC PUMP & MOTOR VIBRATION DATA":

12

Bearing	Load		Full Flow
	Pickup Position		Actual
			in/sec
Outboard Motor	A	H	.03
		V	.03
		A	.03
Inboard Motor	B	H	.03
		V	.04
† Inboard Pump	C	H	.12
		V	.07
† Outboard Pump	D	H	.11
		V	.07
		A	.18

6. **Leave** figure 1 "11 Component Cooling Pump Performance Curve" blank.
7. **Plot** data on figure 2 "12 Component Cooling Pump Performance Curve" as follows:



8. **Attach** completed white copy of Form 17-4048, CALIBRATED TOOL USAGE, to SP-1155.
9. **Sign** the "Performed By" block on the SP cover page AND **write** "Today's date" in the Date block.
10. **Administer** the JPM.

Performance Step: (Step 7.3.14)
Critical _____
Standard: Subtract (PI-11637) from (PI-11261) and plot that psi and the gpm from (ERCS 1F0619A) on Figure 1, 11 Component Cooling Pump Performance Curve.
Performance: Candidate performs calculation and plots point on Figure 1 within the range indicated on page 10 of this JPM.
Comments: SATISFACTORY _____ UNSATISFACTORY _____

Performance Step: (Step 7.3.15)
Critical X
Standard: Check that the plot on Figure 1 is in the Acceptable Range.
Evaluator Note: YES/NO (Circle One)
Candidate determines that the plot on Figure 1 is **NOT** within the Acceptable Range and circles "NO". Candidate states entry into 72-hour LCO action statement.
Successful identification of the 11 CC being inoperable per this step OR the next step is required to satisfy the critical step.
Performance: SATISFACTORY _____ UNSATISFACTORY _____
Comments: _____

Performance Step: (Step 7.3.17)
Critical X
Standard: Check that the asterisk data in Table 1 is in the Reference Range.
Evaluator Note: YES/NO (Circle One)
Candidate determines that the asterisk data in Table 1 is **NOT** within the Reference Range and circles "NO". Candidate states entry into 72-hour LCO action statement.
Successful identification of the 11 CC being inoperable per this step OR the previous step is required to satisfy the critical step.
Performance: SATISFACTORY _____ UNSATISFACTORY _____
Comments: _____

Performance Step: (Step 7.3.30)
Critical X **Time CV-31252**, 11 EXCS LTDN HX CC OUTL CV, CLOSING using the local valve pointer.

Standard: Candidate determines that CV-31252 needs to be analyzed within 96 hours or declared inoperable.

Evaluator Note: Successful identification of the 96-hour requirement or immediately declaring CV-31252 inoperable will satisfy this critical step. There are no Tech Specs associated with this valve.

Performance: **SATISFACTORY** **UNSATISFACTORY**

Comments: _____

Performance Step: (Step 7.9)
Critical **Perform** Independent Verification that **MCC 1K1-B4** is "OFF"

Standard: Candidate discovers missing IV initial.

Performance: **SATISFACTORY** **UNSATISFACTORY**

Comments: _____

Performance Step: (Step 7.10)
Critical **Perform** Independent Verification that **MCC 1K2-E2** is "OFF"

Standard: Candidate discovers missing IV initial.

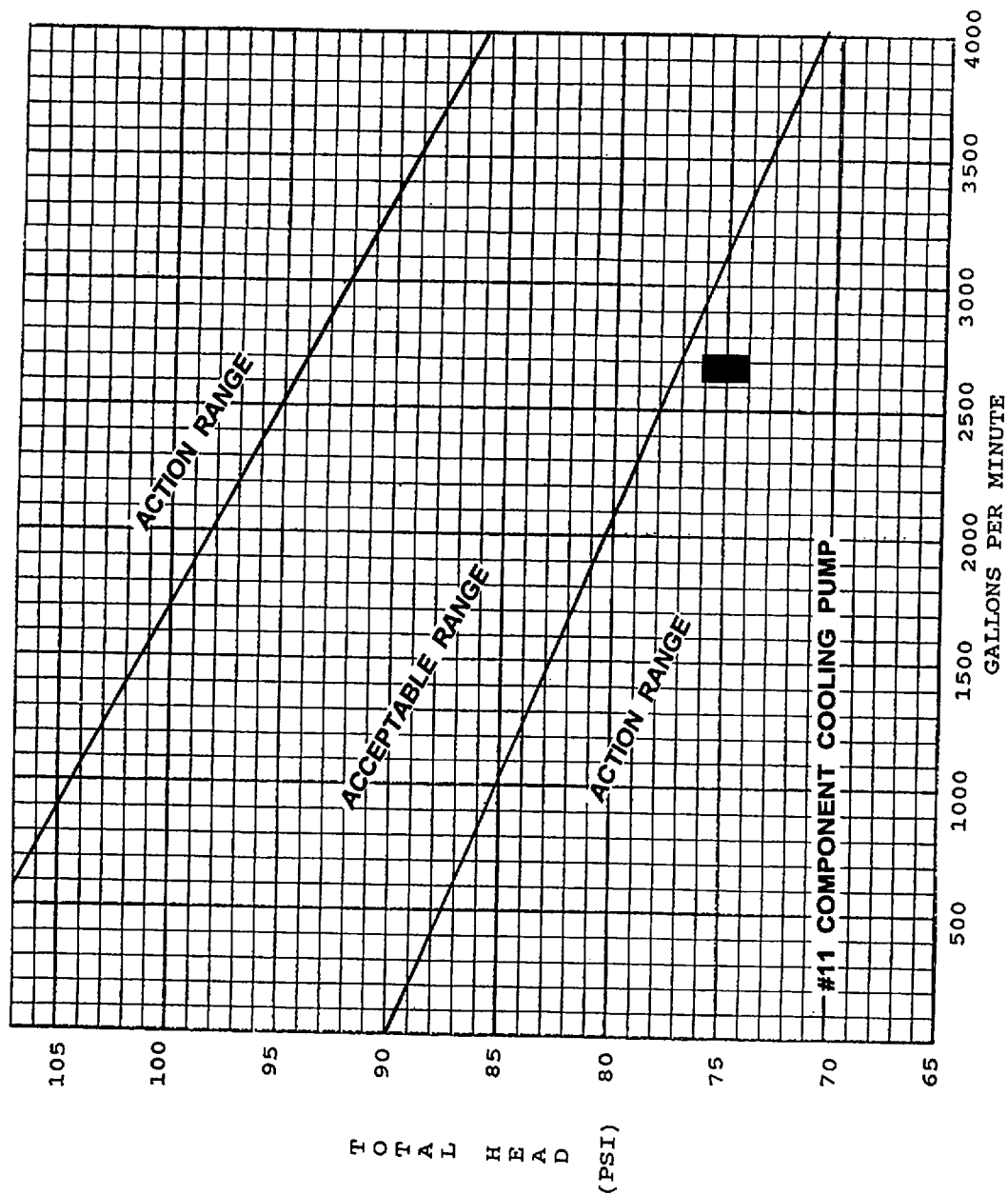
Performance: **SATISFACTORY** **UNSATISFACTORY**

Comments: _____

Terminating Cues: When the candidate reports the results of the review to the examiner.

Stop Time: _____

Figure 1: 11 Component Cooling Pump Performance Curve



TURNOVER SHEET

INITIAL CONDITIONS:

- Both units are at 100%.
- It is the third quarter of 2001.
- You are the Unit 1 Shift Supervisor.
- SP-1155 "Component Cooling Water System Quarterly Test" has just been completed.

INITIATING CUES:

- You are to **complete** a review of SP-1155 AND **report** your results to your examiner.

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: CONDUCT A SHUTDOWN SAFETY ASSESSMENT

JPM NUMBER: 2001 NRC EXAM SRO REV. 0
A.2

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: SS 342.ATI.030

K/A NUMBERS: 2.2.18

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☐ Actual Performance: ☒

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☒ Control Room: ☐

Other: ☐

Time for Completion: 20 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☐ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/12/01

APPROVED BY: *D. Smith* **DATE:** 3/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

CONDUCT A SHUTDOWN SAFETY ASSESSMENT		
JPM Element:	Number:	Remarks:
Total number of elements:	41	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	6	
Verifiable actions directed to be taken by the candidate	0	
System status verification elements requiring no actions	35	
Critical steps	3	
Operational decisions required by candidate	2	Determine that two of the key safety functions are in other than green condition.
Alternate paths required	0	
Consequences for not performing task correctly		
The outage planning team is required to ensure contingency plans are developed whenever any of the key safety functions enters an orange condition. Additionally, the operations committee shall review all contingency plan procedures. Failure to identify the orange condition would result in the plant being in a degraded condition without proper contingency plans.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Unit 1 is in Cold Shutdown for a refueling outage.
- Unit 1 Reactor is defueled and the Refueling cavity is flooded.
- The time to boiling for the Spent Fuel Pool has been determined to be 13 hours.
- All of PINGP 1102 (Shutdown Safety Assessment) with the exception of the Control Room portions of Power Availability have been completed.

INITIATING CUES:

- You are to **complete** the Control Room portions of the Power Availability section of PINGP 1102 (Shutdown Safety Assessment).
- **Co-sign** for completion of the Shutdown Safety Assessment. (Another SRO has already signed for completion of the non-Control Room portions.)
- **Report** your results to the Unit 1 Shift Supervisor.

JPM PERFORMANCE INFORMATION

Required Materials: PINGP 1102

General References: 5 AWI 3.15.4

Task Standards: Determine 4160-Volt system is in a yellow condition. Determine 120-Volt Instrument system is in an orange condition.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step:

POWER AVAILABILITY 4160 Volt

Critical

Determine Available Offsite Sources to Energized Bus 15

Yes

No

☐☐

CT-11 or CT-12

(0-1)

☐☐

1RY or 2RY

(0-1)

☐☐

Bustie to Bus 25

(0-1)

Standard:

Candidate determines CT-11 and 1RY are available to energized bus 15 (1 point each). The bustie to bus 25 is not available (0 points)

Performance:

SATISFACTORY _____

UNSATISFACTORY _____

Comments:

Performance Step:POWER AVAILABILITY 4160 Volt**Critical** _____

Determine Available Offsite Sources to Energized Bus 16

Yes

No

☐☐

CT-11 or CT-12

(0-1)

☐☐

1RY or 2RY

(0-1)

☐☐

Bustie to Bus 26

(0-1)

Standard:

Candidate determines CT-11 and 1RY and the bustie to bus 26 are available to energized bus 16 (1 point each).

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:POWER AVAILABILITY 4160 Volt**Critical** _____

Determine if D1 D/G is Available

Yes

No

☐☐

Capable of supplying power to Bus 15

(0-1)

Standard:

Candidate determines that D1 is available (1 point)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:POWER AVAILABILITY 4160 Volt**Critical** _____

Determine if D2 D/G is Available

Yes

No

☐☐

Capable of supplying power to Bus 16

(0-1)

Standard:

Candidate determines that D2 is NOT available (0 points)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:
Critical _____**POWER AVAILABILITY 4160 Volt**
Determine Sequencer Availability.**Bus 15 Sequencer** (Sequencer capable of automatically restoring voltage to Bus 15 and Train A required components.)

- | Yes | No | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | PLC light blinking |
| <input type="checkbox"/> | <input type="checkbox"/> | Bus 15 voltage restoration SW. in AUTO |
| <input type="checkbox"/> | <input type="checkbox"/> | No C.R. sequencer alarms or verify alarms not due to sequencer O.O.S |
| <input type="checkbox"/> | <input type="checkbox"/> | Annun. 47005-0508 17 Inverter Bypass – NOT LIT |
| <input type="checkbox"/> | <input type="checkbox"/> | Control power available to Bus 15 source and load breakers
(i.e. Switch Ind Lights lit.) |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Slide SW. on Pnl 1EMA in 17 Inv. Pos. |

Bus 16 Sequencer (Sequencer capable of automatically restoring voltage to Bus 16 and Train B required components.)

- | Yes | No | |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | PLC light blinking |
| <input type="checkbox"/> | <input type="checkbox"/> | Bus 16 voltage restoration SW. in AUTO |
| <input type="checkbox"/> | <input type="checkbox"/> | No C.R. sequencer alarms or verify alarms not due to sequencer O.O.S. |
| <input type="checkbox"/> | <input type="checkbox"/> | Annun. 47005-0608 18 Inverter Bypass – NOT LIT |
| <input type="checkbox"/> | <input type="checkbox"/> | Control power available to Bus 16 source and load breakers
(i.e. Switch Ind Lights lit.) |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Slide SW. on Pnl 1EMB in 18 Inv. Pos. |

(0-1)

Evaluator Note:

- **One point credit if all Bus 15 OR all of Bus 16 are YES.**
- **Some of this information is provided to the candidate on the form since it is verified outside of the Control Room.**

Standard:Candidate determines that **47005-0508** 17 Inverter Bypass is LIT and Bus 16 voltage restoration switch is NOT in AUTO (0 points)**Performance:****SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:POWER AVAILABILITY 4160 Volt**Critical** X

Determine Total Points for 4160 volt power availability.

Total Points "POWER AVAILABILITY" (4160 VOLTS)

Total (0-9)

Standard:

Candidate determines that there are 6 total points for 4160 volt power availability.

Evaluator Note:

- The candidate may chose to circle the yellow condition for 4160 volt power availability on the cover sheet at this time. This is acceptable.
- Determining the yellow condition satisfies the critical step. (may be accomplished later)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:****Performance Step:**POWER AVAILABILITY 480 Volt**Critical** _____

Determine if Bus 111 is Energized.

Yes

No

☐☐**CS46956**, Bkr 15-11 Bus 15 feed to 111M Xfmr CLOSED☐☐

Bus 111 Normal Voltage

(0-1)

Standard:

Candidate determines that Bus 111 is energized from bus 15. (1 point)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 480 Volt****Critical**

Determine if Bus 112 is Energized.

Yes

No

☐☐**CS46905**, Bkr 15-6 Bus 15 feed to 112M Xfmr CLOSED☐☐

Bus 112 Normal Voltage

(0-1)

Standard:

Candidate determines that Bus 112 is energized from bus 15. (1 point)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:****Performance Step:****POWER AVAILABILITY 480 Volt****Critical**

Determine if Bus 121 is Energized.

Yes

No

☐☐**CS46927**, Bkr 16-4 Bus 16 feed to 121M Xfmr CLOSED☐☐

Bus 121 Normal Voltage

(0-1)

Standard:

Candidate determines that Bus 121 is energized from bus 16. (1 point)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:POWER AVAILABILITY 480 Volt**Critical** _____

Determine if Bus 122 is Energized.

Yes

No

☐☐**CS46916**, Bkr 16-11 Bus 16 feed to 122M Xfmr CLOSED☐☐

Bus 122 Normal Voltage

(0-1)

Standard:

Candidate determines that Bus 122 is energized from bus 16. (1 point)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:****Performance Step:**POWER AVAILABILITY 480 Volt**Critical** _____

Determine 480 volt Bus Configuration.

Yes

No

☒☐

Both Busses of any one Train in a Normal Lineup

(0-1)

1

Evaluator Note:**This information is provided to the candidate on the form since determining 480 volt bus configuration requires a walkdown of the 480 volt busses in each bus room.****Standard:**

None

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 480 Volt****Critical** _____

Determine Total Points for 480 volt power availability.

Total Points "POWER AVAILABILITY" (480 VOLTS)

Total (0-5)

Standard:

Candidate determines that there are 5 total points for 480 volt power availability.

Evaluator Note:**The candidate may chose to circle the green condition for 480 volt power availability on the cover sheet at this time. This is acceptable.****Performance:****SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:****Performance Step:****POWER AVAILABILITY 120 Volt Instrument Buses****Critical** _____

Determine if the "Red" Inverter Backed Instrument Bus is available.

Yes

No

☐☐

(RED) Bus I (Yes, if ALL of the following are yes)

Yes

No

☐☐

Annun. 47005-0108 12 Inverter Inst. Bus I

(RED) Bypassed (NOT LIT)

☐☐

Annun. 47005-0107 PANEL 112 INST BUS I

(Red) loss of voltage – (NOT LIT)

☒☐

Panel 112 Slide Switch in "MAIN 12

INVERTER" position

(0-1)

Evaluator Note:**The panel 112 slide switch position is checked in the relay room and therefore is provided to the candidate on the form.****Standard:**

Candidate determines that Annun. 47005-0108 12 Inverter Inst. Bus I (RED) Bypassed is LIT and the Red Instrument bus is NOT available. (0 points)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 120 Volt Instrument Buses****Critical**

Determine if the "White" Inverter Backed Instrument Bus is available.

Yes

No

☐☐

(WHITE) Bus II (Yes, if ALL of the following are yes)

Yes

No

☐☐

Annun. 47005-0208 11 Inverter Inst. Bus II (WHITE) Bypassed (NOT LIT)

☐☐

Annun. 47005-0207 PANEL 111 INST BUS II (White) loss of voltage – (NOT LIT)

☒☐Panel 111 Slide Switch in "MAIN 11
INVERTER" position

(0-1)

Evaluator Note:**The panel 111 slide switch position is checked in the relay room and therefore is provided to the candidate on the form.****Standard:**

Candidate determines that "White" inverter backed Instrument bus is available (1 point)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:****Performance Step:****POWER AVAILABILITY 120 Volt Instrument Buses****Critical**

Determine if the "Blue" Inverter Backed Instrument Bus is available.

Yes

No

☐☐

(BLUE) Bus III (Yes, if ALL of the following are yes)

Yes

No

☐☐

Annun. 47005-0308 13 Inverter Inst. Bus III (BLUE) Bypassed (NOT LIT)

☐☐

Annun. 47005-0307 PANEL 113 INST BUS III (Blue) loss of voltage – (NOT LIT)

☒☐Panel 113 Slide Switch in "MAIN 13
INVERTER" position

(0-1)

Evaluator Note:**The panel 113 slide switch position is checked in the relay room and therefore is provided to the candidate on the form.****Standard:**

Candidate determines that Annun. 47005-0308 13 Inverter Inst. Bus III (BLUE) Bypassed is LIT and the Blue Instrument bus is NOT available. (0 points)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 120 Volt Instrument Buses****Critical**

Determine if the "Yellow" Inverter Backed Instrument Bus is available.

Yes

No

☐☐

(YELLOW) Bus IV (Yes, if ALL of the following are yes)

Yes

No

☐☐

Annun. 47005-0408 14 Inverter Inst. Bus IV (Yellow) Bypassed (NOT LIT)

☐☐

Annun. 47005-0407 PANEL 114 INST BUS IV (Yellow) loss of voltage – (NOT LIT)

☒☐

Panel 114 Slide Switch in "MAIN 14

INVERTER" position

(0-1)

Evaluator Note:**The panel 114 slide switch position is checked in the relay room and therefore is provided to the candidate on the form.****Standard:**

Candidate determines that Annun. 47005-0407 PANEL 114 INST BUS IV (Yellow) loss of voltage is LIT and the Yellow inverter backed Instrument bus is NOT available (0 points)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 120 Volt Instrument Buses****Critical**

Determine status of the Refueling Cavity.

Yes

No

☒☐Refueling Cavity flooded $\geq 20'$

Yes

No

☒☐

Upper Internals Removed

(0-1)

1

Evaluator Note:**This information is verified in containment and therefore is provided to the candidate on the form. (This step is provided here for examiner convenience.)****Standard:**

None

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 120 Volt Instrument Buses****Critical** X

Determine Total Points for 120 volt Instrument busses.

Total Points "POWER AVAILABILITY" (120 VOLTS)

Total (0-5)

Standard:

Candidate determines that there are 2 total points for 120 volt Instrument busses.

Evaluator Note:

- The candidate may chose to circle the orange condition for 120 volt Instrument busses on the cover sheet at this time. This is acceptable.
- Determining the orange condition satisfies the critical step. (may be accomplished later)

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY 120 Volt UPS Loads****Critical** _____

Determine if 1EMA is energized.

Yes

No



1EMA energized from 17 Inverter



1EMA circuit 12 (ON)

(0-1)

1

Evaluator Note:**This information is verified in the event monitoring room and therefore is provided to the candidate on the form. (This step is provided here for examiner convenience.)****Standard:**

None

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step:POWER AVAILABILITY 120 Volt UPS Loads**Critical** _____

Determine if 1EMB is energized.

Yes

No



1EMB energized from 18 Inverter



1EMB circuit 12 (ON)

(0-1)

1

Evaluator Note:

This information is verified in the event monitoring room and therefore is provided to the candidate on the form. (This step is provided here for examiner convenience.)

Standard:

None

Performance:

SATISFACTORY _____

UNSATISFACTORY _____

Comments:

Performance Step:POWER AVAILABILITY 120 Volt UPS Loads**Critical** _____

Determine if 17 Inverter is on Normal Regulated Output.

Yes

No



Annun. 47005-0508 17 Inv. Bypassed (NOT LIT)

(0-1)

Standard:

Candidate determines 17 inverter is bypassed (0 points)

Performance:

SATISFACTORY _____

UNSATISFACTORY _____

Comments:

Performance Step:**POWER AVAILABILITY 120 Volt UPS Loads****Critical**

Determine if 18 Inverter is on Normal Regulated Output.

Yes

No

☐☐

Annun. 47005-0608 18 Inv. Bypassed (NOT LIT)

(0-1)

Standard:

Candidate determines 18 inverter is not bypassed (1 point)

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:****Performance Step:****POWER AVAILABILITY 120 Volt UPS Loads****Critical**

Determine status of the Refueling Cavity.

Yes

No

☒☐Refueling Cavity flooded $\geq 20'$

Yes

No

☒☐

Upper Internals Removed

(0-1)

1

Evaluator Note:**This information is verified in containment and therefore is provided to the candidate on the form. (This step is provided here for examiner convenience.)****Standard:**

None

Performance:**SATISFACTORY** _____**UNSATISFACTORY** _____**Comments:**

Performance Step:**POWER AVAILABILITY** 120 Volt UPS Loads**Critical** _____

Determine Total Points for 120 volt UPS Loads.

Total Points **"POWER AVAILABILITY" (120 VOLT UPS)**

Total (0-5)

Standard:

Candidate determines that there are 4 total points for 120 volt UPS.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:**

Performance Step: Determine Shutdown Safety Conditions**Critical** X

(CIRCLE CONDITION)

	RED	ORANGE	YELLOW	GREEN
DECAY HEAT REMOVAL:				
RCS	0	1	2	<u>≥ 3</u>
SFP	0	1	<u>2</u>	4
INVENTORY CONTROL	0	1	2	<u>≥ 3</u>
POWER AVAILABILITY:				
4160 VOLTS	0-1	2-3	4-6	≥ 7
480 VOLTS	0-1	2	3-4	5
120 VOLTS INST	0-1	2	3	≥ 4
120 VOLTS UPS	0	1	2-3	≥ 4
DC	0	1	2	<u>3</u>
REACTIVITY CONTROL	0-1	2	3-4	<u>5</u>
CONTAINMENT CLOSURE	0	1	2-3	<u>≥ 4</u>

Standard:

Candidate circles the following conditions:

- 4160 VOLTS - **Yellow**
- 480 VOLTS - **Green**
- 120 VLTS INST - **Orange**
- 120 VOLTS UPS - **Green**

Evaluator Note:

Circling the yellow conditions correctly satisfies the critical step.

Performance:**SATISFACTORY** **UNSATISFACTORY** **Comments:**_____

Performance Step: Sign for completion
Critical _____
Evaluator Note: The existing signature is for the sections completed outside of the Control Room.
Standard: Candidate co-signs for completion at the bottom of the cover page of PINGP 1102
Performance: SATISFACTORY _____ UNSATISFACTORY _____
Comments: _____

Performance Step: Report results to the Shift Supervisor
Critical _____
Standard: Results reported verbally to the Shift Supervisor OR completed PINGP form 1102 handed to the examiner.
Performance: SATISFACTORY _____ UNSATISFACTORY _____
Comments: _____

Terminating Cues: Results of the Shutdown Safety Assessment have been reported to the Shift Supervisor.

Stop Time: _____

SIMULATOR SETUP

Instructor Guide:

- **Initialize** simulator to IC-27.
- **Place** the simulator in RUN AND **allow** ERCS to initialize.
- **Enter** pre-existing malfunctions (**Relative order of 0**).
- **Place** breaker 15-8 "BUS TIE BUS 15 BUS 25" in PULLOUT using **CS-46956** AND attach information card.
- **Remove** D2 from service by performing the following:
 - **Place** D2 Diesel Generator in PULLOUT using **CS-46930** AND attach information card.
 - **Place** breaker 16-9 "BUS 16 SOURCE FROM D2" in PULLOUT using **CS-46921** AND attach information card.
 - **Place** breaker 16-9 MAN / AUTO CLOSURE SEL SW in MANUAL using **CS-46919**.
 - **Place** D2 DSL GEN GOVENOR SPEED CONTROL in LOWER using **CS-46929** until the D2 DIESEL GEN GOV READY LIGHTS (**44902**) extinguish.
 - **Place** "D2 OUT OF SERVICE" signs on the control board at various locations.
- **Place** BUS 16 VOLTAGE RESTORATION SWITCH SEL SW in MANUAL using **CS-46901** AND attach information card.
- **Complete** PINGP 1102 with exception of control room portions of POWER AVAILABILITY.
- **Sign** cover of PINGP 1102 in "Completed By" box (leave room for another signature).

SIMULATOR SETUP

<i>Relative Order</i>	<i>System or Panel Drawing</i>	<i>TYPE</i>	<i>CODE</i>	<i>Severity or Value</i>	<i>Event Trigger</i>	<i>TIMING</i>	<i>DESCRIPTION</i>
0	SS-1D	Annun Malf	M47024:1006	Cry Wolf	Enter		D2 Loss of Control Voltage
0	SS-1D	Annun Malf	M47024:1106	Cry Wolf	Enter		D2 Local Control
0	E1-E2	Annun Malf	M47005:0508	Cry Wolf	Enter		17 Inverter Bypassed
0	E1-E2	Annun Malf	M47005:0108	Cry Wolf	Enter		12 Inverter Bypassed
0	E1-E2	Annun Malf	M47005:0308	Cry Wolf	Enter		13 Inverter Bypassed
0	E1-E2	Annun Malf	M47005:0308	Cry Wolf	Enter		13 Inverter Bypassed
0	E1-E2	Annun Malf	M47005:0407	Cry Wolf	Enter		PANEL 114 INST BUS IV (Yellow) loss of voltage

TURNOVER SHEET

INITIAL CONDITIONS:

- Unit 1 is in Cold Shutdown for a refueling outage.
- Unit 1 Reactor is defueled and the Refueling cavity is flooded.
- The time to boiling for the Spent Fuel Pool has been determined to be 13 hours.
- All of PINGP 1102 (Shutdown Safety Assessment) with the exception of the Control Room portions of Power Availability have been completed.

INITIATING CUES:

- You are to **complete** the Control Room portions of the Power Availability section of PINGP 1102 (Shutdown Safety Assessment).
- **Co-sign** for completion of the Shutdown Safety Assessment. (Another SRO has already signed for completion of the non-Control Room portions)
- **Report** your results to the Unit 1 Shift Supervisor.

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: APPROVE RELEASE AF RAD LIQUID TANK

JPM NUMBER: 2001 NRC EXAM SRO REV. 0
A.3

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: 3410120303

K/A NUMBERS: 2.3.6

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 12 Minutes

Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☐ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 4/5/01

APPROVED BY: D Smith **DATE:** 7/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

APPROVE RELEASE AF RAD LIQUID TANK		
JPM Element:	Number:	Remarks:
Total number of elements:	8	Includes total of actions taken or directed, operational decisions, and system status verification.
Verifiable actions taken by the candidate	0	
Verifiable actions directed to be taken by the candidate	1	
System status verification elements requiring no actions	7	
Critical steps	4	
Operational decisions required by candidate	2	<ul style="list-style-type: none"> • Determine appropriate approval signature missing • Determine Blowdown not at required level
Alternate paths required	0	
Consequences for not performing task correctly		
<p>The calculations performed for radioactive discharges per Prairie Island's Offsite Dose Calculation Manual assume a certain set of conditions during the release to prevent exceeding 10CFR20 limits (blowdown and radionuclide concentration). If the candidate fails to adjust blowdown or obtain the permission of the Supt. Rad Protection, the proper recalculation and possibly rad monitor alarm setpoint adjustment will not be made. This could result in an unmonitored release from the site to UNRESTRICTED AREAS in excess of those levels specified in 10CFR20, Appendix B, Table II, Column 2.</p>		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- Both units are at 100%
- Cooling Tower Blowdown is being maintained at 125 cfs.
- Both unit's Steam Generator blowdown is aligned to the condenser.
- 122 ADT Monitor Tank has been recirculated, sampled, and is ready for release.

INITIATING CUES:

- You are the Unit 1 Shift Supervisor.
- You are to **Review** and **Approve** the release of 122 ADT Monitor Tank per C21.1-5.2 **section 5.3**.
- **Verbalize** all discrepancies and concerns to your examiner.
- **Verbalize** when you are ready to authorize release of 122 ADT Monitor Tank to your examiner.

JPM PERFORMANCE INFORMATION

Required Materials: Liquid Waste Tank Prerelease Authorization
Partially Complete C21.1-5.2

General References: C21.1-5.2 122 ADT Monitor Tank Release (Rev 23)

Task Standards: Release of 122 ADT Monitor Tank authorized after adjusting Cooling Tower blowdown and receiving authorization from the Superintendent of Radiation Protection.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step: 1
Critical _____

5.3 Shift Supervisor Release Review**NOTE:**

Review Precaution 3.5 prior to releasing this tank. Required information in Step 5.6.32 should be completed by Gen. Supt. of Radiation Protection and Chemistry or designee.

Standard:

- Candidate reviews Precaution 3.5.
- Candidate checks step 5.6.32 for completion.

Evaluator Note:

Precaution 3.5 states:

When releasing a tank to the river with a maximum release rate of less than 240 gpm, flushing of the discharge header must be performed at a rate not to exceed the maximum release rate, calculated on the Pre-Release Authorization analysis sheet. A total volume of 15,000 gallons must be released, from another tank or source that does not require flushing of the discharge piping.

In this case, the maximum release rate exceeds 240 gpm, therefore flushing of the discharge piping is not required. (step 5.6.32 has been marked as N/A)

Performance:

SATISFACTORY _____ **UNSATISFACTORY** _____

Comments:

Performance Step: 2**Critical** X **5.3 Shift Supervisor Release Review****5.3.1****Verify** 122 ADT Monitor Tank Liquid Waste Tank Pre-Release Authorization analysis sheet is attached to this procedure.**Standard:**

- Candidate verifies 122 ADT Monitor Tank Liquid Waste Tank Pre-Release Authorization analysis sheet is attached to procedure.
- Candidate identifies missing signature. (*critical step*)

Evaluator Cue:

- The candidate may notice that the required signature for SUPT. RAD. PROT. (OR DESIGNEE) is not complete on the form. If so, **sign** the form for Supt. Rad. Prot. and **inform** the candidate **"The superintendent of radiation protection has now approved the release"**
- Identification of missing signature is a critical step but may be noticed later in the JPM

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step: 3****Critical** _____**5.3 Shift Supervisor Release Review****NOTE:**IF Cooling Tower Blowdown is < 147 cfs, THEN do not release without approval of Gen. Supt. Radiation Protection & Chemistry or designee.**Standard:**

Candidate reads note.

Evaluator Note:The candidate may notice that Cooling Tower Blowdown is less than required at this point. If so, **follow** the guidance of the following step.**Performance:****SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step: 4**Critical** X **5.3 Shift Supervisor Release Review****5.3.2**

Verify Cooling Tower Blowdown is > 147 cfs and maintained. **Log** the Cooling Tower Blowdown in Step 5.6.30.

Standard:

- Candidate verbalizes Cooling Tower Blowdown less than required for release without Gen. Supt. Radiation Protection & Chemistry approval. **(critical step)**
- Candidate logs Cooling Tower Blowdown in Step 5.6.30.

Evaluator Cue:

When the candidate verbalizes that Cooling Tower Blowdown less than required for release without Gen. Supt. Radiation Protection & Chemistry approval, **inform** the candidate **"Cooling Tower Blowdown has been adjusted and is being maintained at 250 cubic feet per second"**

Performance:**SATISFACTORY** **UNSATISFACTORY** **Comments:**

Performance Step: 5**Critical** **5.3 Shift Supervisor Release Review****5.3.3**

Verify that NO MORE than Unit 1 or Unit 2 Steam Generator Blowdown, is going to the river.

Standard:

Candidate verifies that neither Steam Generator Blowdown is going to the river.

Performance:**SATISFACTORY** **UNSATISFACTORY** **Comments:**

Performance Step: 6 5.4 Test of R-18**Critical** _____**Standard:** RO directed to perform test of R-18.**Evaluator Cue:**

When directed as the RO to test R-18:

- **Fill in** section 5.4 of the procedure per instructions below.
- **State** as the RO **"Test of R-18 completed Sat"**
- **Return** procedure to the candidate

Performance: **SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

5.4.1 Instruct Aux Bldg Operator to OPEN CV-31256, R-18 LIQUID RELEASE TRIP VALVE.

Initial

OPS

5.4.2 Record R-18 background count rate.

_____ **2350** _____ CPM

Initial

OPS

5.4.3 Rotate the **OPERATIONAL SELECTOR** switch to the "CHECK SOURCE" position and **record** the count rate.

_____ **5500** _____ CPM

Initial

OPS

5.4.4 Check that R-18 Check Source reading minus background, is within 1.0×10^3 to 7.5×10^3 cpm.

_____ **5500** _____ CPM _____ **2350** _____ CPM = _____ **3150** _____ CPM
 (Check Source (Background (1.0×10^3 to 7.5×10^3 CPM)
 Reading Reading from
 from Step 5.4.3) Step 5.4.2)

Initial

OPS

5.4.5 Rotate the **OPERATIONAL SELECTOR** switch to the "PULSE CAL", position.

Initial

OPS

5.4.6 Check CLOSED CV-31256, R-18 LIQUID RELEASE TRIP VALVE.

Initial

OPS

5.4.7 Rotate the **OPERATIONAL SELECTOR** switch to the "RESET", THEN to the "OPERATE" position.

Initial

OPS

Performance Step: 7**Critical** X **5.5 Release Approval from Shift Supervisor****5.5.1**

Review the release procedure, ensure all steps have been completed, and 122 ADT Monitor Tank can be released.

Standard:

- Candidate reviews the procedure and ensures all steps have been completed.
- Candidate identifies missing signature. (**critical step**)

Evaluator Note:

- The candidate may now notice the missing signature on the Liquid Waste Tank Prerelease Authorization. If so **follow** the guidance in step 2 of this JPM.
- Identification of the missing signature is a critical step but it may have already been satisfied in step 2.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step: 8****Critical** X **5.5 Release Approval from Shift Supervisor****5.5.2**

Assign the Aux Bldg Operator the key for **CV-31841**, KEYLOCK WST LIQ DISCH HDR TO RIVER RELEASE VALVE.

Standard:

Candidate informs the examiner that he/she is ready to assign the key for CV-31841 to the Aux Building Operator and is authorizing the release of 122 ADT Monitor Tank.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Terminating Cues:** Candidate Authorizes release of 122 ADT Monitor Tank.**Stop Time:** _____

TURNOVER SHEET

INITIAL CONDITIONS:

- Both units are at 100%
- Cooling Tower Blowdown is being maintained at 125 cfs.
- Both unit's Steam Generator blowdown is aligned to the condenser.
- 122 ADT Monitor Tank has been recirculated, sampled, and is ready for release.

INITIATING CUES:

- You are the Unit 1 Shift Supervisor.
- You are to **Review** and **Approve** the release of 122 ADT Monitor Tank per C21.1-5.2 **section 5.3**.
- **Verbalize** all discrepancies and concerns to your examiner.
- **Verbalize** when you are ready to authorize release of 122 ADT Monitor Tank to your examiner.

JOB PERFORMANCE MEASURE WORKSHEET

TASK TITLE: CLASSIFY EVENT AND INITIATE PARS FOR A GE

JPM NUMBER: 2001 NRC EXAM SRO REV. 0
A.4

**RELATED PRA
INFORMATION
(SEE PITC 2.3):** None

TASK NUMBERS: 3440230303

K/A NUMBERS: 2.4.41 / 2.4.44

APPLICABLE METHOD OF TESTING:

Simulate Performance: ☒ Actual Performance: ☐

Evaluation Location: Turbine Building: ☐ Auxiliary Building: ☐

Simulator: ☐ Control Room: ☐

Other: ☒

Time for Completion: 15 Minutes Time Critical: NO

TASK APPLICABILITY: SRO: ☒ RO: ☐ NLO: ☐
(Check all that apply)

PREPARED BY: Joe Loesch **DATE:** 3/2/01

APPROVED BY: *D Smith* **DATE:** 7/20/01

PERFORMANCE RESULTS: **SAT:** ☐ **UNSAT:** ☐

JPM Review Tool

The following table should be used when reviewing each JPM chosen for the 2001 RO and SRO exam to ensure it meets the requirements of NUREG 1021.

CLASSIFY EVENT AND INITIATE PARS FOR A GE		
JPM Element:	Number:	Remarks:
Total number of elements:	11	
Verifiable actions taken by the candidate	3	
Verifiable actions directed to be taken by the candidate	1	
System status verification elements requiring no actions	7	
Critical steps	3	
Operational decisions required by candidate	2	<ul style="list-style-type: none"> • Classify the event based on given conditions • Issue PARs based on given conditions
Alternate paths required	0	
<i>Consequences for not performing task correctly</i>		
Failure to properly classify the event as a General Emergency will result in Protective Action Recommendations not being made and possible overexposure of the general public. Failure to properly recommend evacuation of all sectors out to five miles could also result in overexposure of the general public in the sectors that were not identified for evacuation.		

Operator: _____ (SRO / RO / NLO)

Evaluator: _____

Date: _____

READ TO THE OPERATOR

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

INITIAL CONDITIONS:

- A Unit 1 reactor trip and Safety Injection has occurred.
- You are the Shift Manager and have assumed the role of the Emergency Director.
- The SEC has completed sections 1.1 and 2.2 of PINGP 577 and is standing by.
- The following Unit 1 conditions exist:

Parameter:	Status:
11 SI pump	Tagged out
Bus 16	Locked out
Charging Flow	2 pumps running (max flow obtainable)
Letdown Flow	Isolated
RCS Pressure	1050 psig and decreasing
Both SG Pressures	1000 psig and steady
Containment Pressure	31 psig and increasing
11 CS pump	Running
Containment Radiation R-48	10,000 R/hr and increasing
Containment Radiation R-49	9,000 R/hr and increasing
10 meter Wind Speed	4.0 mph
10 meter Wind Direction (from)	55 °

INITIATING CUES:

- Using F3-2, PINGP 1125 and PINGP 577, you are to:
 1. **Classify** the event.
 2. If necessary, **issue** protective action recommendations.
 3. **Direct** the Shift Emergency Communicator (SEC) to make necessary notifications.
- Your examiner will act as the SEC.

Evaluator Notes:

- Provide the candidate with the following:
 - A copy of F3-2 with EAL reference stickers
 - PINGP 1125
 - PINGP 577 with the following filled in:
 - PLANT IDENTIFICATION
 - This is Lt. Kempkes, Emergency Communicator at the Prairie Island Nuclear Generating Plant. (651-388-1121)
 - X (b) This is a Drill
 - METEOROLOGICAL INFORMATION (section 2.2)
 - Wind Speed 4.0 mph
 - Wind direction (from) 55°
 - Temperature 70 deg F
 - Precipitation NONE
 - Stability Class D
 - Affected sectors JKLMN
- The parameters provided to the candidate do not indicate that a release to the environment is currently in progress, however there is a high potential for loss of containment. The candidate may decide to indicate that a radioactive release is involved in PINGP 577 section 1.3. Because of the ambiguity involved with conducting a tabletop evaluation of this type, section 1.3 of PINGP 577 is not to be used to determine pass/fail criteria.
- F3-2 section 5.3 states that it may take a reasonable length of time (5 to 15 minutes for most situations) to assess the Emergency Action Levels and determine the appropriate classification. Once the declaration is made, notification of state and local agencies must be made within 15 minutes.

Performance Step:
Critical X

Review plant conditions to Classify the event using F3-2.

Standard:

Recognize conditions met for a General Emergency in accordance with F3-2 emergency activation level (EAL) reference 2E or 6 (case 1).

Evaluator Note:

- The plant conditions satisfy both 2E and 6 (case 1) EAL references.
- This critical step is not met until PINGP form 577 section 1.2 has been filled in with the time and the date.

Performance:

SATISFACTORY _____ UNSATISFACTORY _____

Comments:

JPM PERFORMANCE INFORMATION

Required Materials: PINGP forms 1125 and 577 (sections 1.1 and 2.2 filled in), F3-2 EAL reference stickers

General References: F3-2, F3-8.1

Task Standards: General emergency declared, protective action recommendations issued, SEC directed to make off-site notifications.

Start Time: _____

NOTE: When providing "Evaluator Cues" to the examinee, care must be exercised to avoid prompting the examinee. Typically cues are only provided when the examinee's actions warrant receiving the information (i.e. the examinee looks or asks for the indication).

NOTE: Critical steps are marked with an "X" below the performance step number. Failure to meet the standard for any critical step shall result in failure of this JPM.

Performance Step:
Critical _____

Reference Control Room Shift Manager/Shift Supervisor Emergency Director Checklist (PINGP 1125) section IV for General Emergency.

Standard:

PINGP 1125 section IV referenced.

Evaluator Note:**PINGP 1125 is used as an aid to ensure necessary actions are accomplished. The candidate may choose not to reference this checklist at this time, but should refer to it later to ensure the actions were completed properly.****Performance:****SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:**
Critical _____

(PINGP 1125 Section IV)

NOTE:

In order to adequately maintain oversight of the operational aspects of the event, it may be necessary to delegate some E-Plan duties to the unaffected unit SS.

Standard:

First note in PINGP 1125 section IV read.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:**
Critical _____

(PINGP 1125 Section IV)

(1) Assume the role of the Emergency Director (F3-4).**Standard:**

Step (1) in PINGP 1125 section IV read, initialed and timed.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step:

(PINGP 1125 Section IV)

Critical _____**NOTE**

In the case of a security event, if the TSC or Turbine Floor are unsafe areas, it may be safer for the SEC to perform emergency notifications from another safe location (e.g., Control Room or CAS). SEC notification forms (PINGP 577, 579 & 580) are available in Control Room, TSC, CAS, and New Admin Reference Library.

Standard:

Second note in PINGP 1125 section IV read.

Evaluator Note:

The candidate should determine that this note is not applicable to this event.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:**

(PINGP 1125 Section IV)

Critical _____

(2) **Ensure** the SEC (pager 4427) has been summoned and starts the completion of the notification report form (PINGP 577).

Standard:

Step (2) in PINGP 1125 section IV read, initialed and timed.

Evaluator Cue:

- **Inform** the candidate as the SEC that you are standing by for further orders.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:**

(PINGP 1125 Section IV)

Critical _____**NOTE**

State and local authorities **SHALL** be notified within 15 minutes of the declaration of an emergency.

Standard:

Third note in PINGP 1125 section IV read.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____

Performance Step:

(PINGP 1125 Section IV)

Critical _____

NOTE

It is recommended that you position yourself at the Reactor Operator's desk to hear key communications, use an ERCS terminal for monitoring CSFSTs, and solicit or answer questions of the SS.

Standard:

Fourth note in PINGP 1125 section IV read.

Performance:

SATISFACTORY _____ UNSATISFACTORY _____

Comments:

Performance Step:

(PINGP 1125 Section IV)

Critical X

(3) **Recommend** evacuation for the general public on PINGP 577 as designated in Figure 1, F3-8.1.

- * IF wind \geq 5 mph, THEN evacuate all sectors out to 2 miles AND the 5 downwind sectors out to 5 miles; AND advise remainder of plume EPZ to monitor radio/TV broadcasts for further emergency information.
- * IF wind $<$ 5 mph, THEN evacuate all sectors out to 5 miles AND advise remainder of plume EPZ to monitor radio/TV broadcasts for further emergency information.

Standard:

- Step (3) in PINGP 1125 section IV read, initialed and timed.
- Section 1.4 of PINGP filled in to indicate evacuation of all sectors out to 5 miles. (**critical step**)

Evaluator Note:

Section 1.4 of PINGP 577 must be properly filled in to satisfy this critical step. (*initial and time in PINGP 1125 not required to satisfy critical step*)

Performance:

SATISFACTORY _____ UNSATISFACTORY _____

Comments:

Performance Step:

(PINGP 1125 Section IV)

Critical _____(4) **Review** and **approve** the notification report form PINGP 577.**Standard:**

PINGP 577 reviewed and approved as indicated by the candidate signing section 2.3.

Performance:**SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Performance Step:**

(PINGP 1125 Section IV)

Critical X (5) **Direct** the SEC to complete the notification of state and local agencies and, IF not already performed, **activate** the site Emergency Response Organization in accordance with F3-5 and PINGP 580.**Standard:**

SEC directed to complete notifications and activate the site Emergency Response Organization.

Evaluator Note:**Directing the SEC to complete the notifications of state and local agencies satisfies this critical step.****Performance:****SATISFACTORY** _____ **UNSATISFACTORY** _____**Comments:** _____**Terminating Cues:** The SEC is directed to complete the necessary notifications.**Stop Time:** _____

TURNOVER SHEET

INITIAL CONDITIONS:

- A Unit 1 reactor trip and Safety Injection has occurred.
- You are the Shift Manager and have assumed the role of the Emergency Director.
- The SEC has completed sections 1.1 and 2.2 of PINGP 577 and is standing by.
- The following Unit 1 conditions exist:

<i>Parameter:</i>	<i>Status:</i>
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Bus 16	Locked out
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INITIATING CUES:

- Using F3-2, PINGP 1125 and PINGP 577, you are to:
 1. **Classify** the event.
 2. If necessary, **issue** Protective Action Recommendations.
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- Your examiner will act as the SEC.