

INITIAL SUBMITTAL

**BRUNSWICK EXAM
50-325 & 50-324**

JULY 27 - AUGUST 3, 2001

INITIAL SUBMITTAL JPMS

**ADMINISTRATIVE JPMS/QUESTIONS
SIMULATOR JPMS,
IN-PLANT JPMS, AND
INITIAL ADMIN TOPICS OUTLINE
(ES-301-1),
CONTROL ROOM SYSTEMS &
FACILITY WALK-THROUGH OUTLINE
(ES-301-2)**

Facility: **BRUNSWICK**Date of Examination: **7/30-8/3/01**Examination Level (circle one): **RO** / SROOperating Test Number: 1

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	GEN 2.1.3(3.0/3.4)	Evaluate Overtime Eligibility
	GEN 2.1.7 (3.7/4.4)	Perform Manual Heat Balance
A.2	GEN 2.2.30 (3.5/3.3)	Evaluate Refueling Data
A.3	GEN 2.3.4 (2.5/3.1)	Calculate Worker Stay Time
A.4	GEN 2.3.4 (3.0/3.5)	Determine Communication Methods for E-Plan Activation

JPM A.1.a

Facility: BRUNSWICK

Task No: A.1.a

Task Title: Evaluate Overtime Eligibility.**Job Performance Measure No:****K/A Reference:** GEN 2.1.3 (3.0/3.4) Knowledge of shift turnover practices**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None

General References:

0AP-001, Rev 9

Modified LOT-OJT-JP-201-CO1

Time Critical Task: YES/NO**Validation Time:** 10 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

A startup is planned for the following shift. One Reactor Operator must be held over two hours for startup. The following is the work history (excluding shift turnover time) of the available reactor operators on shift (hours reflect those worked PRIOR to the 2 hour holdover). A break of at least 8 hours occurred between all work periods.

DAY	1	2	3	4	5	6	7	8 (Today)
Operator #1	0	0	12	12	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

Evaluate the work history for all 5 operators. Determine which operator(s), if any, can be held over for two hours without prior overtime approval, and determine which operators CANNOT be held over for two hours without prior overtime approval.

Task Standard:

Step	Description	Standard	SAT/UNSAT
1	Obtain a current revision of OAP-001	Current Revision of OAP-001 obtained	
2	Evaluate Operator 1	Determine Operator #1 would exceed 24 hours in a 48 hour period and would exceed 72 hours in a 7 day period and would require overtime authorization	Critical
PROMPT: If asked, inform applicant that operator 1 received authorization for exceeding 24 hours in a 48 hour period between days 5 and 6.			
3	Evaluate Operator 1	Determine Operator exceeded 24 hours in a 48 hour period between days 5 and 6	
4	Evaluate Operator 2	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	Critical
5	Evaluate Operator 3	Determine Operator #3 would exceed 16 hours in a 24 hour period and 24 hours in a 48 hour period and would require overtime authorization	Critical
6	Evaluate Operator 4	Determine that Operator #4 would not exceed any overtime guidelines	
7	Evaluate Operator 5	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	Critical

JPM A.1.b (RO)

Facility: BRUNSWICK**Task No:** A.1.b**Task Title:** Perform Manual Heat Balance**Job Performance Measure No:****K/A Reference:** G2.17 (3.7/4.4) Ability to evaluate plant performance and make operational judgments based on operating characteristics / reactor behavior / and instrument interpretation.**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None Electronic Calculator

General References:OPT-01.8D, Core Thermal
Power Calculation**Time Critical Task:** YES/NO**Validation Time:** 30 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. Unit 2 is in Mode 1 and has been at a constant power level for 20 hours. There are no scheduled power changes for the next 2 hours.
2. The LOTUS program is unavailable.

INITIATING CUE:

You are directed by the Control Room Supervisor to complete a core thermal power calculation on Unit 2 using the preferred method of calculation per OPT-01.8D. This calculation is to be done to confirm the CTP calculations done by the plant process computer and for upcoming APRM and LPRM PTs. You are to use the attached data to perform the calculation.

Task Standard:

When the CTP computation has been checked and Form D has been signed, this JPM is complete.

NOTE: During Prep Week, plant data is to be developed to support this JPM and handouts with plant data are to be prepared.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1	Verify prerequisites of OPT--01.8D are met.	Prerequisites are verified and are met.	Critical
2	Enter the date, time, name, and position of the person performing the calculation of Form D.	Correct date, time, name, and position entered on Form D.	
3	Record the required data on Form D.	The required data is accurately recorded on Form D.	Critical
4	Complete the CTP calculation as outlined on Form D.	CTP calculation is performed correctly.	Critical
5	Check the CTP computation and sign Form D to certify satisfactory completion of the calculation.	CTP checked, and Form D signed.	

JPM A.2

Facility: BRUNSWICK**Task No:** A.2**Task Title:** Evaluate Refueling Data.**Job Performance Measure No:**

K/A Reference: 2.2.30 (3.5/3.3) Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area / communication with fuel storage facility / systems operated from the control room in support of fueling operations / and supporting instrumentation.

Examinee: _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None

General References:

OFH-11

Time Critical Task: YES/NO**Validation Time:** ? Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

Fuel loading is in progress on Unit 2. Indication for SRM A is 5 cps and indication for SRM B is 7 cps (initial loading of fuel bundles around both SRMs is complete).

Upon insertion of the next two fuel bundles, the control room operator observes the indication from the SRMs and records the following:

After Bundle 1

SRM A: 9 cps
SRM B: 17 cps

After Bundle 2

SRM A: 23 cps
SRM B: 37 cps

Evaluate this situation and describe any procedurally-mandated actions.

Task Standard:

After bundle 1:

SRM B has doubled and fuel movement should have been stopped at this point per OFH-11, 3.37.1.

SAT/UNSAT

After Bundle 2:

SRM B has increased by greater than a factor of 5 over baseline and fuel movement should be stopped per OFH-11, 3.37.2.

SAT/UNSAT

JPM A.3 (RO)

Facility: BRUNSWICK**Task No:** A.3**Task Title:** Calculate Worker Stay Time**Job Performance Measure No:****K/A Reference:** GEN 2.3.4 (2.5/3.1) Knowledge of radiation exposure limits and contamination control / including permissible levels in excess of those authorized.**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

Calculator

General References:**Time Critical Task:** YES/NO**Validation Time:** 20 Min.

Task Standard:

Each Maintenance workers maximum stay time calculated.

FOR PREP WEEK:

Create survey map showing 45 mrem/hr contact reading for component selected.

Step	Description	Standard	SAT/UNSAT
0	Obtain copy of Radiation Control and Protection Manual		
1	Determine stay time for worker #1	2000 mrem admin limit - 1800 mrem = 200 mrem $200\text{mrem}/45\text{ mrem/hr} = 4.44\text{ hrs}$	Critical
2	Determine stay time for worker #2	500 mrem admin limit - 350 mrem = 150 mrem $150\text{ mrem}/45\text{ mrem/hr} = 3.33\text{ hrs}$	Critical
3	Determine stay time for worker #3	500 mrem - 400 mrem = 100 mrem $100\text{ mrem}/45\text{ mrem/hr} = 2.22\text{ hrs}$	Critical

JPM A.4 (RO)

Facility: BRUNSWICK

Task No: A.4

Task Title: Determine Communication Methods for E-Plan Activation**Job Performance Measure No:****K/A Reference:** GEN 2.3.4 (3.0/3.5) Knowledge of communications procedures associated with EOP implementation.**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:****General References:**

OPEP-03.1.3

OPEP-Appendix A

Time Critical Task: YES/NO**Validation Time:** ? Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

You are an extra licensed operator assigned to Unit 2 when, at 0200, an Alert is declared due to a tornado striking inside protected area resulting in major damage to structures housing safety-related systems. In addition to structural damage, both units have tripped off-line and a number of electrical problems have been identified, including inoperability of the following:

- The Emergency Notification System
- The Selective Signaling System
- The BEN System
- Commercial Telephone lines

The Shift Superintendent has prepared the appropriate notification forms and has directed you to make notifications to the State and Counties, the Nuclear Regulatory Commission, and to initiate Emergency Response Organization callout in accordance with the appropriate OPEP.

For each of these tasks, identify the way you would make the specified notification and, where appropriate, the phone number you would use.

Task Standard:

Identify the following methods and phone numbers:

State and Counties: VHF Radio (no phone or channel number)

NRC: Cellular or satellite phone - 301-816-5100

ERO Callout: Cellular or satellite phone - 754-1098

GENERAL:

☐ CALCULATORS

REQ'D SUPPORT DOCUMENTATION:

☐ A.1.1.b (BOTH)

☐ OAP-001, REV 11 - ONE PER CANDIDATE

☐ GENERIC LETTER 82-12 (A FEW COPIES NOT REQ'D, BUT SOME MAY ASK)

☐ TECH SPECS (SAME AS GENERIC LETTER - JUST A FEW)

☐ A.1.1.b (RO)

☐ OPT-01.B.D, REV 20 - ONE PER CANDIDATE

☐ DATA SHEET - ONE PER CANDIDATE

☐ A.1.1.b (SRO)

☐ OAI-81, REV 32 - ONE PER CANDIDATE

☐ TECHNICAL REQUIREMENTS MANUAL (A FEW COPIES)

☐ DATA SHEET - ONE PER CANDIDATE

ENSURE UNITS MATCH PRECEDENCE

ENSURE WE UNDERSTAND DIFFERENCE BETWEEN "ACTUAL"

& "INDICATED" VALUES ON DATA SHEET

☐ A.1.2 (BOTH)

☐ OFH-11 - ONE PER CANDIDATE - REV 19

☐ A.1.3 (RO)

☐ NIGGM-PN-002, REV 31 - ONE PER CANDIDATE

☐ SURVEY MAP

☐ CHOOSE COMPONENT IN ROOM WITH A REDUNDANT COMPONENT, IF POSSIBLE,

SO CANDIDATE HAS TO CHOOSE COMPONENT CORRECTLY - MAKE FIELD AT

COMPONENT OF INTEREST 45 MEN/Hr - PUT OTHER FIELD DATA AROUND

ROOM WITH DIFFERENT FIELD AT REDUNDANT COMPONENT - EXAMPLE:

5 MEN/Hr

25 MEN/Hr

COMP
A

COMP
B

45 MEN/Hr

10 MEN/Hr

☐ A.3 (SRO)☐ OREP-03.1b, REV 11 - ONE PER CANDIDATE☐ A.4 (RO)☐ OREP-03.1.3 - ONE PER CANDIDATE☐ OREP-APPENDIX A - ONE PER CANDIDATE

IT NOTE - THIS PROCEDURE HAS BEEN SUPERCEDED BY ELP-001, BUT 03.1.3 WAS NOT REVISED TO REFERENCE ELP-001. EITHER USE ELP-001 TO MINIMIZE NEGATIVE TRAINING'S REFERENCE IT IN INITIALS, QUES. OR PROVIDE APP A - LICENSEE'S CHOICE

☐ A.4 (SRO)☐ DOOI-01.07, REV 10 - ONE PER CANDIDATE☐ NUREG-1022 - ONE PER CANDIDATE☐ B.1.d☐ 201-03.2 REV 67 - ONE PER RO'S SRO (I)☐ B.1.g☐ AOP-34.2 - ONE PER RO'S SRO (I)☐ B.2.b☐ 1(2) OP-16 - ONE PER APPLICANT☐ B.2.c☐ OOP-41 - ONE COPY PER RO'S SRO (I)

Facility: **BRUNSWICK**Date of Examination: **7/30-8/3/01**Exam Level (circle one): **RO / SRO(I) / SRO(U)**

Operating Test No.:

1**B.1 Control Room Systems**

System / JPM Title	Type Code*	Safety Function
1. Transfer RPS Bus B From Normal to Alternate Power (SROU)	M,S,A	7
2. Place RWCU Filter/Demineralizer "B" In Service (SROU)	M,S,A	2
3. Emergency Equalization Around MSIV's - Anticipate Emergency Depressurization (SROU)	D,C,L	3
4. Evaluate Off-Site Power Source Operability per the CO DSR	D,C	6
5. HPCI Start Using the "Hard Card" - Steam Line Break With Auto Isolation Failure	D,S,A	4
6. Recirculation Pump Start - Recirculation Pump Speed Control Failure	D,S,A	1
7. Install Circuit Alterations For Drywell Cooling Per AOP-36.2	D,C	5

B.2 Facility Walk-Through

1. Control Room Evacuation - AOP-32 - Scram and MSIV Closure From Outside the Control Room (SROU)	D	1
2. Resetting a RCIC Mechanical Overspeed Trip (SROU)	D,R	4
3. Perform Actions Associated With Fires - Aligning the Fire Protection Alternate Water Supply	D	8

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

JPM B.1.a

Facility: BRUNSWICK

Task No: B.1.a

Task Title: Transfer RPS Bus B From Normal to Alternate Power
Job Performance Measure No:**K/A Reference:** 212000/A2.02 (3.7, 3.9)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance __ Actual Performance XX
Classroom __ Simulator XX Plant**READ TO THE EXAMINEE**

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

Initiating Cue:

1. An RPS MG Set B spurious trip has occurred.
2. No scram signal is present on RPS Bus A.
3. No Tracking LCO exist on RPS EPA Breakers.

The Unit SCO has directed that you energize RPS Bus B from the alternate source per OP-03 and inform him when the applicable procedure section is complete.

Task Standard:

Places RPS Bus B on alternate power supply, identifies ATWS as a result of Bus A failure, and scrams reactor.

Applicant Performance: SAT/UNSAT

Initial Conditions:

IC - 11

Rx. Pwr. - 100%

Core Age - BOC

RPS MG Set/Bus B tripped and initial plant response complete.

System	Tag	Title	Value
MI	IAEPAALT	RPS ALT EPA BKRS	TRIPPED
ED	IBZNORM	RPS ALT POWER	E8 - ALT

1. Trip RPS MG Set B via Malfunction, MF, RP004F, RPS B MG Set TRIP.
2. Perform necessary actions to stabilize the plant following the loss of RPS Bus B.
3. Acknowledge alarms.
4. RPS ALT Supply EPA breakers #5 and #6 and RPS ALT POWER SOURCE are positioned as required via Remote Functions when requested.
5. Automatic scram prevented, manual scram possible.

Required Materials:

NONE

General References:

2OP-03.0, Rev. 37

Modified LOR-SIM-JP-003-AO3

Time Critical Task: YES/NO**Validation Time:** 10 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1	Obtain current revision of 2OP-03	Current revision of 2OP-03 is referenced.	
2	Determine RPS Alternate Power source must be transferred.	Recognize RPS Alternate Power Source must be transferred to ALTERNATE (2E8).	
3	Contact AO to open EPA #6 and EPA #5 breakers.	AO directed to place EPA breakers #6 and #5 to OFF.	
4	Direct AO to transfer RPS Alternate Power Throwover Switch to Alternate.	Direct transfer of RPS Alternate Power Throwover Switch to Alternate.	Critical
5	Direct AO to Close EPA breakers #5 and #6 per OP-03.	Direct EPA breakers #5 and #6 CLOSED per OP-03.	Critical
6	Verify white ALT light above the RPS Power Source Select Switch is on.	RPS ALT Power available (center white light) on Panel P610 is on.	
<p>NOTE: After RPS ALT power is restored, student must refer to Section 8.2 of OP-03 to transfer power for RPS B to Alternate.</p> <p>PROMPT: Inform the examinee that OP-03.0 Attachment 10 will be completed by personnel performing RPS power supply transfer.</p> <p>NOTE: With RPS B deenergized, the MSIV SOL. COIL DC lights on Panel H12-P622 for the Inboard MSIVs, B21-F022A-D, and the MSIV SOL. COIL AC lights on Panel H12-P623 for the Outboard MSIVs, B21-F028A-D, will be extinguished. Likewise the Inboard MSIV LOGIC DC and Outboard MSIV LOGIC AC lights on panel H12-P601 will be extinguished. These lights should illuminate when RPS B is energized AND the Group 1 PCIS LOGIC has been reset.</p> <p>PROMPT: If asked, inform the examinee that the MSIV SOL. COIL DC lights on Panel H12-P622 for the Inboard MSIVs, B21-F022A-D, and the MSIV SOL. COIL AC lights on Panel H12-P623 for the Outboard MSIVs, B21-F028A-D, are extinguished. The MSIV SOL. COIL AC lights on Panel H12-P622 for the Inboard MSIVs, B21-F022A-D, and the MSIV SOL. COIL DC lights on Panel H12-P623 for the Outboard MSIVs, B21-F028A-D, are lit.</p>			
7	PLACE RPS POWER SOURCE SELECT SWITCH on P610 to ALT B.	RPS POWER SOURCE SELECT SWITCH on P610 placed to ALT B.	Critical
8	Reset APRM setdowns	APRM SETDOWN TRIP SET-DN trips reset. White alarm lights not lit, Panel P603, APRM section.	Critical
<p>PROMPT: Fail RPS Bus A at this point with ATWS (allow manual scram).</p>			

Task	Description	Standard	Sat/Unsat
9	Identify RPS Bus A failure		
10	Identify failure of reactor to automatically scram	Declares ATWS	Critical
NOTE: At this point applicant may stop to consider resetting the scram groups 1/4 and 2/3, as it is the next task in the procedure. Choosing to reset the scrams vice scrambling the reactor on indication of an ATWS should be considered grounds for an automatic UNSAT for this JPM.			
11	Manually scram reactor perform RO duties for scram	Verifies shut down reactor, etc	Critical
TERMINATING CUE: When immediate post-trip actions are complete, the JPM may be terminated			

JPM B.1.b

Facility: BRUNSWICK

Task No: B.1.b

Task Title: Place RWCU Filter/Demineralizer "B" In Service**Job Performance Measure No:**

K/A Reference: 204000/A4.06 (3.0, 2.9)
204000/K1.15 (3.1, 3.2)
204000/K1.08 (3.7, 3.8)

Examinee: _____**NRC Examiner:** _____**Date:** _____**Method of testing:**

Simulated Performance __ Actual Performance XX
Classroom __ Simulator XX Plant

READ TO THE EXAMINEE

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

Initiating Cue:

1. The plant is operating at 95% power.
2. All applicable prerequisites as listed in OP-14, Section 3.0 are met.
3. The "B" F/D is in HOLD, there is one RWCU pump in service and the F/D Bypass valve, G31-F044 is open.
4. The "A" F/D has been backwashed and is secured.

The Shift Supervisor directs you to place the "B" RWCU filter demin in service and inform him when the required actions are complete.

Task Standard:

RWCU F/D "B" is shut down due to high conductivity.

Applicant Performance: SAT/UNSAT

Initial Conditions:

IC 11
Rx. Pwr. 95%
Core Age BOC

Remove RWCU 'A' filter from service using the OP.

System	Tag	Title	Value (ramp rate)
RW	IAFLTFVA	FILTER A OUTLET VLV CONTROL	SHUT

1. Open the G31-F044, fully.
2. Open the G31-F034.
3. Throttle G31-F033 to achieve \approx 75 GPM dump flow.

Required Materials:

Plant Page

General References:

2 OP-14, Rev. 83
SD-12, Sections 1.2.1.3 and 2.4, Rev. 16
SD-14, Section 2.2.4 and 2.4, Rev. 12
Modified LOR-SIM-JP-014-A01

Time Critical Task: YES/NO

Validation Time: 10 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1	Obtain current revision of OP-14.	Current revision of OP-14 obtained.	
PROMPT: The reactor building AO has placed the "B" F/D flow controllers in MANUAL, the manual thumbwheels are set to zero, the auto thumbwheels are set to 90 gpm.			
2	Throttle the G31-F042, G31-F033, and/or the G31-F031 establish proper pump and/or reject flow.	Flow established between 200 and 275 gpm on G31-FI-R609.	
3	Verify the G31-F044 is fully open.	The G31-F044 is verified full open.	
4	Have the AO open the F/D isolation valves and pressurize the F/D.	The AO is told to perform these actions.	
PROMPT: The reactor building AO has opened the G31-F041B and pressurized the filter. The reactor building AO has opened the G31-Z002-31B and 32B.			
5	Have the AO depress the Filter Start button.	The AO is told to depress the Filter Start button.	
PROMPT: The reactor building AO has depressed the Filter Start pushbutton. The AO then applies a 20% air signal to the F/D "B" Effluent Flow Control Valve G31-Z002-66B by adjusting the controller G31-Z002-FC-74B.			
PROMPT: The reactor building AO reports that the F/D "B" Filter light is ON, the Influent valve G31-Z002-6B has opened and the manual pressurization valve has been shut.			
6	Slowly close the F/D Bypass valve G31-F044, until a flow of 70-101 gpm through the F/D is achieved.	The G31-F044 is closed to achieve 70-101 gpm flow indication on G31-FI-R605B.	Critical
7	Have the RB AO null the F/D flow controller and switch to Automatic.	The AO is told to null the controller.	
PROMPT: The reactor building AO has placed the controller to Automatic			
PROMPT: Insert high conductivity condition after full closure of G31-F044			
8	Close or verify closed the F/D Bypass valve G31-F044.	The G31-F044 is closed.	
9	Notify the Chemistry Dept. to sample the F/D.	The CO notifies the Chemistry Dept.	
10	Observe the reactor vessel conductivity to ensure that no	Reactor vessel conductivity is observed on G31-CRS-R601.	Critical

Task	Description	Standard	Sat/Unsat
	conductivity spikes occurred as a result of placing the RWCU F/D in service.	Conductivity is noted to have increased markedly.	
11	Transition to 7.1 of procedure	7.1 of procedure referenced	Critical
12	Notes Initial Conditions for 7.1 are not met (BOTH F/Ds in service)	Recognizes 7.1 Initial Conditions are not met	Critical
13	Proceeds to 7.2	7.2 of the procedure referenced	Critical
14	Checks that F/D Controller is in Manual - finds that it is in Automatic - directs AO to take controller to Manual	F/D flow controller is in Manual	
15	Directs AO to close the F/D FCV via the controller	F/D FCV Closed	Critical
16	Opens G31-F044	G31-F044 Open	Critical
17	Direct AO to press the F/D HOLD pushbutton		
18	Have the AO close the F/D isolation valves and effluent strainer isolation valve.	The AO is told to perform these actions.	
PROMPT: The reactor building AO has opened the G31-F041B and pressurized the filter. The reactor building AO has opened the G31-Z002-31B and 32B.			
11	Have the reactor bldg. AO adjust or verify RWCU F/D flow to 70-101 gpm.	The AO is told to adjust flow.	
TERMINATING CUE: When the B F/D is isolated, this JPM may be terminated.			

JPM B.1.c

Facility: BRUNSWICK

Task No: B.1.c

Task Title: Emergency Equalization Around MSIV's/Anticipate Emergency
Depressurization**Job Performance Measure No:****K/A Reference:** 239001/A4.01 (4.2/4.0)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance XX Actual Performance
Classroom ____ Simulator ____ Plant Unit 2**READ TO THE EXAMINEE**

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

Initiating Cue:

1. A scram and Group 1 Isolation have occurred.
2. No fuel failure or steam line breaks have occurred.
3. The Main Condenser is available as a heat sink.
6. The Unit SCO has determined that Anticipation of Emergency Depressurization is required.

You are directed by the Unit SCO to perform the control operator actions associated with Emergency Equalization around the MSIV's, open MSIVs when pressure is <200 psid using the Hard Card and then perform Anticipation of Emergency Depressurization.

Task Standard:

MSIVs have been reopened and the reactor has been depressurized <300 psig via BPVs.

Applicant Performance: SAT/UNSAT

Required Materials: None

General References:

EOP-01-RVCP, Reactor Vessel Control
Procedure

Hard Card for MSIV equalization and
reopening (S/960)

LOT-SIM-JP-025-A03

Time Critical Task: YES/NO

Validation Time: 15 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1	Obtain "Hard Card" for MSIV equalization.	"Hard Card" obtained for MSIV equalization	
2	Request or place the condenser vacuum bypass switches in bypass position.	PROMPT: Inform examinee low condenser vacuum bypass switches are in Bypass	Critical
3	Place MSIV control switches to close.	PROMPT: All MSIV control switches in closed position.	Critical
4	Reset Group 1 isolation. Resets Group 1 Isolation reset switches; A72-S32 and S33 on P601 are depressed and white PCIS/Group 1 status lights on P601 are ON.	PROMPT: White PCIS/Group 1 status lights on P601 are ON.	Critical
5	Outboard MSIV switches: B21-F028A, B21-F028B, B21-F028C, B21-F028D placed in OPEN.	PROMPT: MSIVs are OPEN.	Critical
6	Open MS-F020, MSL Drain Isolation Valve.	PROMPT: MS-F020 indicates open.	
7	Open B21-F019, MSL Outboard drain Isolation Valve.	PROMPT: B21-F019 indicates open.	Critical
8	Close MS-V28, Steam supply to MSR's, SJAE's, RFP's.	PROMPT: MS-V28 indicates closed.	
9	Close MVD-F021, Common drain line orifice Bypass Valve to condenser	PROMPT: MVD-F021 indicates closed.	
10	Open B21-F016, MSL Inboard drain Isolation Valve	PROMPT: B21-F016 indicates open.	Critical
11	Open MS-F038 A,B,C,D, MSL orifices bypass valves to increase steam line pressure.	PROMPT: MS-F038A,B,C, and D indicate open. Steam Line pressure increasing	Critical
12	Main turbine steam line pressure A/B indication on XU-1 verified to be increasing.	PROMPT: Main turbine steam line pressure indication is increasing.	
13	Close MSL drain valves MS-V46, MS-V47, MS-V48, MS-V49 & MS-V35.	PROMPT: MS-V46, V47, V48, V49 and V35 indicate closed.	
14	Verify differential pressure between reactor and main turbine is less than or equal to 200 psid. on ERFIS, C32-R608, R609, or C32-PI-R605A or B on	PROMPT: Main turbine steam line pressure A/B indication is within 200 psid of reactor pressure indication.	Critical

Task	Description	Standard	Sat/Unsat
	P-603/601 or any other available reactor pressure indication available.		
15	Open Inboard MSIV's. Inboard MSIV switches for B21-F022A, B21-F022B, B21-F022C, B21-F022D placed in the OPEN position.	Inboard MSIVs B21-F022A, B21-F022B, B21-F022C, B21-F022D indicate open.	Critical
16	Open MVD-F021, Common drain line orifice Bypass Valve to condenser.	PROMPT: MVD-F021 indicates open.	
17	Open MS-V46, V47, V48, V49 and V35, MSL drain valves.	PROMPT: MS-V46, MS-V47, MS-V48, MS-V49 & MS-V35 indicate open.	
18	Ensure open MS-V43, MS-V44, MS-V45, MS-V37/V39, MS-V41/V42, MS-V36, MSL drain valves.	PROMPT: MS-V43, MS-V44, MS-V45, MS-V37/V39, MS-V41/V42, MS-V36 indicate open	
NOTE: If MS-V28 is not re-opened, vacuum will not be re-established for opening of bypass valves			
PROMPT: If asked, inform examinee that opening MS-V28 is required at this time.			
19	Open MS-V28.	PROMPT: MS-V28 indicates open and condenser vacuum is increasing above 7".	Critical
NOTE: The main turbine bypass valves will not open until condenser vacuum is above 7".			
PROMPT: When informed actions to equalize and open MSIVs are complete, direct examinee to rapidly depressurize the reactor to the main condenser in excess of 100 degrees F/Hour while maintaining steam flow below 3 million lbm/hour.			
20	Open main turbine bypass valves using the bypass valve jack while maintaining total steam flow <3 mlbm/hr until RPV pressure is <300 psig.	PROMPT: Bypass valve indicates open.	Critical
TERMINATING CUE: When MSIVs have been reopened and the main turbine bypass valves have been opened, this JPM may be terminated.			

JPM B.1.d

Facility: BRUNSWICK

Task No: B.1.d

Task Title: EVALUATE OFF-SITE POWER SOURCE OPERABILITY PER THE CO DSR
Job Performance Measure No:**K/A Reference:** 262001/A2.10 (2.9/3.4)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance XX Actual Performance
Classroom Simulator Plant Unit 2**READ TO THE EXAMINEE**

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

Initiating Cue:

1. You are a Unit Two (2) Reactor Operator.
2. The load dispatcher has informed the Control Room that system reserve is low.
3. The fourth Circulating Water Intake Pump has been started on Unit Two (2) per guidance of 2OP-29.0.
4. Buses Common A and B are being supplied by their respective Unit power.
5. Unit 2 is in Mode 1.

You are directed by the Unit SCO to determine if electrical loading is within the limits established in the CO Daily Surveillance Report (DSR), and report the required actions for Unit 2.

Task Standard:

Supervisor informed SAT is inoperable. If Applicant is an SRO, determine that Tech Spec actions are applicable per LCO 3.8.1. Action C.

Applicant Performance: SAT/UNSAT

Required Materials:

Process Computer
Calculator

General References:

2OI-03.2 Rev. 67
Unit 2 Technical Specifications
LOT-SIM-JP-201-D07

Time Critical Task: YES/NO

Validation Time: 12 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1	Obtain current revision of 2OI-03.2.	Current revision of 2OI-03.2 obtained and verified if applicable.	
2	Determine Attachment 1 notes S, T, and U apply.	Determine Attachment 1 notes S, T, and U apply.	
3	Determine amps on Bus 2C. NOTE: <i>Bus 2C amps determined using computer point E008.</i>	PROMPT: When examinee demonstrates the ability to obtain computer point readings for BOP Bus amps, inform examinee that the readings are as follows: 2C Amps): 1294.7	
	amps on Bus 2D. NOTE: <i>Bus 2D amps determined using computer point E013.</i>	PROMPT: When examinee demonstrates the ability to obtain computer point readings for BOP Bus amps, inform examinee that the readings are as follows: E013 (Bus 2D Amps): 1777.3	
5	Determine amps on Bus Common B. NOTE: <i>Bus Common A amps determined using computer point E037.</i>	PROMPT: When examinee demonstrates the ability to obtain computer point readings for BOP Bus amps, inform examinee that the readings are as follows: E037 (Common B Amps): 334.2	
NOTE: DO NOT PROVIDE THIS TO THE STUDENT: The total of the above values is 3406.2 amps.			
PROMPT: If requested, inform examinee that the Motor Driven Fire Pump is being fed from E4 and is currently running for a PT on Unit 1 and that NSW 2B is running as indicated by the red lamp "on" on panel XU-2.			
PROMPT: If requested, indicate to examinee that NSW Pump 2A, RHR 2A, RHR 2B, CS 2A and CS 2B are all in standby as indicated by green lights at the RTGB.			
6	Determine if the following loads are running: RHR 2A or 2B.	PROMPT: RHR 2A and 2B are NOT running.	
	NSW 2A or 2B.	NSW 2A is NOT running and NSW 2B <u>IS</u> running.	
	CS 2A or 2B.	CS 2A and 2B are NOT running.	

Task	Description	Standard	Sat/Unsat
	Motor Driven Fire Pump.	Motor Driven Fire Pump <u>is</u> running.	
7	Determine total amperage limit.	Total allowable load limit is <u>3389</u> amps (3315 + 40+34).	
8	Determine current load exceeds the allowable limit and that the SAT shall be considered inoperable.	Determines total load of 3406.2 exceeds limit of 3389 and that SAT is inop.	Critical
9	Supervisor informed SAT is inoperable.		

NOTE:IF THE EXAMINEE IS AN RO, THE JPM IS COMPLETE AT THIS TIME.

PROMPT:If the examinee is an SRO, direct examinee to determine the required actions per Technical Specifications for the current condition (no other equipment inoperable at this time)

10	Refer to Tech Secs	<p>Determine that Tech Spec actions are applicable per LCO 3.8.1. Action C.</p> <p>T/S LCO 3.8.1. Action C:</p> <p>A. In accordance with Required Action C.1., demonstrate operability of remaining AC offsite source by performing SR 3.8.1.1, correct breaker alignments and indicated power availability (PT-12.8.1) within 2 hours and at least once per 12 hours thereafter. <i>Determines that LCO 3.8.1 Action C applies requiring performance of SR 3.8.1.1., correct breaker alignments and indicated power availability (PT-12.8.1) within 2 hours and at least once per 12 hours thereafter.</i></p> <p>NOTE:Required Action C.2 only applies if one 4 KV E Bus can not be supplied from offsite power. It does not apply in this case.</p> <p>B. In accordance with Required Action C.3., restore the inoperable offsite circuit to OPERABLE status within the next 72 hours <i>Determines that LCO 3.8.1 Action C.3 applies, requiring</i></p>	Critical
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Task	Description	Standard	Sat/Unsat
		<i>restoration of the inoperable offsite circuit to OPERABLE status within the next 72 hours.</i>	
TERMINATING CUE: When the RO has determined that the SAT is inoperable, and the SRO has determined the required Tech Spec actions, this JPM is complete.			

JPM B.1.e

Facility: BRUNSWICK**Task No:** B.1.e**Task Title:** HPCI START USING THE "HARD CARD" - STEAM LINE BREAK WITH AUTO ISOLATION FAILURE**Job Performance Measure No:****K/A Reference:** 206000/A4.05 (4.4/4.4)
A2.14 (3.3, 3.4)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XX
Classroom ____ Simulator XX**READ TO THE EXAMINEE**

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

Initiating Cue:

1. Reactor Feed pumps have tripped.
2. Reactor Vessel Level has decreased to below the low level 2 HPCI initiation setpoint.
3. HPCI did NOT auto start.

You are directed to start HPCI for injection to the RPV using the "Hard Card" and inform your supervisor when HPCI has been started per the Hard card and is injecting at rated flow.

Task Standard:

When HPCI has been manually isolated, this JPM is complete.

Applicant Performance: SAT/UNSAT

Required Materials:

None

General References:

HARD CARD "Emergency HPCI
Operation" 2/0577S
LOR-SIM-JP-19-A08

Time Critical Task: YES/NO**Validation Time:** 5 Min.**SIMULATOR SETUP:****A. Initial Conditions:**

1. Recommended Initial Conditions:

IC-11
Rx. Pwr. 100%
Core Age BOC

2. Required Plant Conditions:

RPV level below LL2 with Feedwater not available and HPCI failed to auto start.

B. Malfunctions

Event	System	Tag	Title	Value (ramp rate)	Activate Time (sec)	Deactivate Time (sec)
E1	ES	ES047F	HPCI Stm Brk HPCI Room	20% (0 SEC)	0 SEC	N/A
A	ES	ES040F	HPCI Auto Start Failure	NA	0 SEC	N/A

C. Overrides

Remote Functions

System	Tag	Title	Value (ramp rate)
PC	IAPCJP0 3	E41-F002 Auto Closure Disabled	ON
PC	IAPCJP0 4	E41-F003 Auto Closure Disabled	ON

D. Special Instructions

1. Trip Feed Pumps.
2. When level is below +112", place the simulator in FREEZE.

Task	Description	Standard	Sat/Unsat
1	Reference HPCI Start per Hard Card.	HPCI Start Hard Card mounted on P601 referenced.	
2	Verify AOP is not running	Verifies AOP is not running	
3	Open the HPCI Cooling Water supply valve.	COOLING WATER SUPPLY VLV, E41-F059, is opened.	
4	Start the HPCI Barometric Condenser Vacuum Pump.	The HPCI VACUUM PUMP is started.	
5	Open the Turbine Steam Supply.	TURBINE STEAM SUPPLY VLV, E41-F001, is opened.	Critical
6	Start the Auxiliary Oil Pump.	AUXILIARY OIL PUMP, is started.	Critical
7	Open the Injection Valve.	HPCI INJECTION VLV, E41-F006 is opened.	Critical
NOTE: When the HPCI injection valve is opened, initiate Event Trigger E1 to activate HPCI Steam line Break			
8	Recognize HPCI Turbine Trip and isolation signal, diagnose steam line break with failure to auto isolate.	HPCI steam line break is diagnosed.	
9	Close HPCI isolation valves E41-F002 and E41-F003.	E41-F002 or E41-F003 indicate full closed.	Critical
10	Contact Supervisor	Supervisor informed HPCI manually isolated due to steam line break with failure to auto isolate.	
TERMINATING CUE: When HPCI has been manually isolated, this JPM is complete.			

JPM B.1.f

Facility: BRUNSWICK**Task No:** B.1.f**Task Title:** Recirculation Pump Start - Recirculation Pump Speed Control Failure**Job Performance Measure No:****K/A Reference:** 202001/A4.01 (3.7/3.7)
A2.05 (3.8/4.0)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XX
Classroom ____ Simulator XX**READ TO THE EXAMINEE**

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

Initiating Cue:

1. Reactor Recirculation Pump 2B has tripped, and the cause of trip has been corrected.
2. Reactor Recirculation Pump 2A is running at less than 22,000 gpm.
3. RWCU system is in operation with a suction from the bottom head and the Recirc loop.
4. An off-going control operator has completed steps in OP-02 Section 5.2 up to Step 5.2.2.22, and OP-02, Section 8.2 up to step 8.2.2.4.

You are to continue the startup of Reactor Recirculation Pump 2B and inform the Unit SCO when OP-02 Sections 5.2 and 8.2 are completed.

Task Standard:

When Recirculation Pump 2B scoop tube is locked, this JPM may be terminated.

Applicant Performance: SAT/UNSAT

Required Materials:

Steam Tables

General References:

2 OP-02 , Rev. 99

LOR-SIM-JP-002-A07

Time Critical Task: YES/NO**Validation Time:** 20 Min.**SIMULATOR SETUP:****A. Initial Conditions:**

1. Recommended Initial Conditions
IC - 09
Rx. Pwr. - 50%
Core Age - BOC
2. Required Plant Conditions
Recirculation Pump A secured with Pump B flow <22,000 gpm and rod line below 80%, at least 10% margin to APRM rod block.

B. Event Triggers

Event	Trigger Description
E1	Auto Initiated (Q2716SR7 Not Equal To True) (Recirc B Run Back Red Light Out)

C. Malfunctions
None**D. Overrides**

Event	Panel	Tag	Title	Value (ramp rate)	Activate Time (sec)	Deactivate Time (sec)
E1	P60 3	P2740A1 1	Recirc B Flow Control	1.0 (60 SEC)	0	0

E. Special Instructions

1. Trip the 2B Recirc Pump from the RTGB with the control switch.
2. Place the B32-V17 Seal Staging Valve to "MANUAL/OPEN" position.
3. Reduce 2A Recirc Pump Flow to less than 22,000 GPM (approx 32% speed).
4. Reduce 2B Recirc Flow Ctlr output to approx. 16%
5. Clear Override Summary, then enter pot override on auto trigger. If override summary is not cleared, ramp function may not work!

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
NOTE: Provide applicant with marked up copies of OP-02 Sections 5.2 and 8.2			
1.	Obtain current revision of OP-02.	Current revision of OP-02 obtained.	
2.	Determine the RPV Dome temperature.	a. RPV pressure is obtained from the N005A/B, N008, or ERFIS. b. Pressure reading is corrected for PSIA. c. Pressure reading is located on the Saturated Steam table (or process computer) and corresponding temperature obtained.	
3.	Obtain bottom head drain temperature.	Point 5 of G31-TI-R607 is read.	
4.	Calculate differential temperature.	Bottom head drain temperature is subtracted from Dome temperature. (<145 °F)	
5.	Record the differential temperature.	Differential temperature and time of verification logged in Control Operator's logbook.	
6.	Determine the temperature differential between the idle and operating loop.	a. Operating loop temperature is read off B32-R650 or process computer. b. Idle loop temperature is read off B32-R650 or process computer. c. ΔT obtained verified <50 °F and recorded.	
7.	Record the differential temperature.	Differential temperature and time of verification logged in Control Operator's logbook.	
8.	Verify that the operating loop flow is less than or equal to 22,000 gpm (50% of rated flow).	Operating loop flow is read off recorder B32-R614 or meter B32-R617 and operating loop flow is verified to be less than or equal to 22,000 gpm.	

Task	Description	Standard	Sat/Unsat
9.	Record operating loop flowrate.	Operating loop flowrate and time of verification logged in Control Operator's logbook.	
10.	Close the Discharge valve.	Control switch for the B32-F031B is taken to the CLOSE position or verified closed by B32-F031B Green indication only is illuminated.	Critical
11.	Start the B Recirc MG set.	The B Recirc MG set switch is placed to the Start position.	Critical
12.	Verify proper start sequence of the Recirc MG set and Pump Motor.	<p>The following indications should be observed in the order shown:</p> <ul style="list-style-type: none"> a. MG set B drive motor breaker closed by RED light indication. b. MG set accelerates. c. The Generator Field breaker closes (RED indication) 6 seconds after the Drive motor breaker closed. d. Recirc Loop B Flow increases on B32-R614. 	
13.	Record time of pump start.	Time at which MG set drive motor breaker closed logged in Control Operator's logbook.	
14.	Open the Recirc B pump discharge valve.	Take the B32-F031B valve control switch to the OPEN position for 2 seconds then release for 10 seconds. Repeat this for at least the first minute of travel, then fully open B32-F031B.	Critical
15.	Reset the runback per section 8.3.	Runback is reset as follows: <ul style="list-style-type: none"> a. Lower speed demand on Pump 2B until control established with potentiometer. Speed control potentiometer lowered below runback limit. b. Monitor for speed increase on Pump 2B. Pump speed monitored while runback is reset. c. Depress Runback Reset push button for pump 2B. Recirc B Runback Reset is depressed. 	

Task	Description	Standard	Sat/Unsat
<p>NOTE :When Recirc Pump B runback is reset, (can be monitored on the Panel Mimics in the Instructor Console) ensure Event Trigger E1 activates the Recirc Pump B Speed Control Failure.</p> <p>NOTE :When examinee locks the scoop tube, and informs the Unit SCO of the failure the JPM is complete. Since the examinee cannot complete the task, it is acceptable for the examiner to inform the examinee that the JPM is complete.</p> <p>PROMPT:If examinee informs supervisor of recirc pump speed control failure, inform examinee another operator has been directed to enter AOP-03.0 to perform required subsequent actions.</p>			
*15.	Lock the scoop tube.	Recirc pump B scoop tube is locked.	
<p>TERMINATING CUE: When Recirculation Pump 2B scoop tube is locked, this JPM may be terminated.</p>			

JPM B.1.g

Facility: BRUNSWICK**Task No:** B.1.g**Task Title:** Install Circuit Alterations For Drywell Cooling Per AOP-36.2**Job Performance Measure No:****K/A Reference:** 295012/AA1.02 (3.8/3.8)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance XX Actual Performance
Classroom Simulator Control Room U1**READ TO THE EXAMINEE**

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

Initiating Cue:

1. Unit One (1) is in a Station Blackout.
2. Buses E1 and E2 have been energized from Unit Two (2) by cross-tie.
3. Sufficient load is available to reestablish drywell cooling on Unit One (1).
4. Unit One (1) has a LOCA signal sealed in due to high drywell pressure concurrent with low Reactor pressure.

You are directed to install the circuit alterations per AOP-36.2, Section 3.2.13, Steps 8, 9 and 11 to allow reestablishing drywell cooling and inform the Control Room when 1-SW-V103 and 1-SW-V106 can be opened and RBCCW Pump 1A can be started.

Task Standard:

When circuit alterations have been performed per AOP-36.2 Section 3.2.11, this JPM is complete.

Applicant Performance: SAT/UNSAT

Required Materials:

Screwdriver, tape and jumper
from RO desk locked drawer

Time Critical Task: YES/NO

General References:

AOP-36.2, Rev 14
LOR-OJT-JP-303-A05

Validation Time: 10 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1.	Obtain current revision of AOP-36.2 Section 3.2.13.	Current revision of AOP-36.2 obtained.	Critical
2.	Obtain screwdriver, tape and jumper from RO desk locked drawer.	Screwdriver, tape and jumper obtained from RO desk locked drawer.	
3.	Lift and tape white wire 1-DK7-26 in Panel 1-XU-24 (ESS Logic Cabinet H59) on terminal TA93.	White wire 1-DK7-26 in Panel 1-XU-24 (ESS Logic Cabinet H59) on terminal TA93 is lifted.	
PROMPT: When informed wire in XU-24 is lifted, inform examinee that 1-SW-V103 has been opened.			
4.	Lift and tape grey wire 1-DE3-26 in Panel 1-XU-7 (ESS Logic Cabinet H58) on terminal TE24.	Grey wire 1-DE3-26 in Panel 1-XU-7 (ESS Logic Cabinet H58) on terminal TE24 is lifted.	Critical
PROMPT: When informed wire in XU-7 is lifted, inform examinee that 1-SW-V106 has been opened. If asked, inform examinee that 480V MCC 1XE is energized and RBCCW Pump 1C control switch has been placed to OFF.			
5.	Install jumper in Panel 1-XU-7 (ESS Logic cabinet H58) between terminals TB71 and TB72.	Jumper in Panel 1-XU-7 (ESS Logic cabinet H58) between terminals TB71 and TB72 installed.	Critical
PROMPT: When informed jumper is installed in XU-7. inform examinee RBCCW Pump 1A is			

Task	Description	Standard	Sat/Unsat
running.			
6.	Notify Control Room circuit alterations installed.	Control Room notified circuit alterations installed.	
TERMINATING CUE: When circuit alterations have been performed per AOP-36.2 Section 3.2.11, this JPM is complete			

JPM B.2.a

Facility: BRUNSWICK**Task No:** B.2.a**Task Title:** Control Room Evacuation - AOP-32 - Scram and MSIV Closure From Outside the Control Room**Job Performance Measure No:****K/A Reference:** 295016/AA1.01 (3.8/3.9)**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance XX Actual Performance
Classroom ____ Simulator ____ Control Room ____ Plant XX**READ TO THE EXAMINEE**

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

TASK CONDITIONS:

1. The SS has made the determination that control room evacuation IS required.
2. Scram and MSIV closure could NOT be completed prior to evacuating the Control Room.
3. This JPM will be performed for Unit ____ (Designated by examiner)

You are directed by the Shift Superintendent to perform **ALL** the immediate actions called for in 0AOP-32.0 when a reactor scram and MSIV Closure could NOT be completed prior to evacuating the Control Room and inform him when the required actions are completed.

Task Standard:

When the EPA Breakers have been opened, this JPM is complete.

Applicant Performance: SAT/UNSAT

Required Materials:

None

General References:

0AOP-32.0

LOR-OJT-JP-302-E01

Time Critical Task: YES/NO

Validation Time: 5 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
NOTE: JPM TO BE PERFORMED <u>WITHOUT</u> PROCEDURE!			
NOTE: EPA Breakers should be opened in sequence specified to avoid duty cycle of downstream breaker, but sequence is not critical. If upstream breaker (EPA-1,3) is opened first that step becomes critical and the downstream breaker (EPA-2,4) non critical.			
PROMPT: If requested, indicate EPA POWER OUT light indications going out as EPA breakers are opened.			
1.	Open EPA-2 circuit breaker for "A" RPS MG set.	EPA-2 circuit breaker open as indicated when the red POWER OUT light is extinguished.	Critical
2.	Open EPA-1 circuit breaker for "A" RPS MG set.	EPA-1 circuit breaker open as indicated when the red POWER OUT light is extinguished.	
3.	Open EPA-4 circuit breaker for "B" RPS MG set.	EPA-4 circuit breaker open as indicated when the red POWER OUT light is extinguished.	Critical
4.	Open EPA-3 circuit breaker for "B" RPS MG set.	EPA-3 circuit breaker open as indicated when the red POWER OUT light is extinguished.	
5.	Open EPA-6 circuit breaker for RPS alternate power supply.	EPA-6 circuit breaker open as indicated when the red POWER OUT light is extinguished.	
6.	Open EPA-5 circuit breaker for RPS alternate power supply.	EPA-5 circuit breaker open as indicated when the red POWER	

Task	Description	Standard	Sat/Unsat
	RPS alternate power supply.	OUT light is extinguished.	
7.	Inform Shift Superintendent.	Shift Superintendent informed that EPA breakers are open.	
TERMINATING CUE: When the EPA Breakers have been opened, this JPM is complete.			

JPM B.2.b

Facility: BRUNSWICK**Task No:** B.2.b**Task Title:** Resetting a RCIC Mechanical Overspeed Trip**Job Performance Measure No:**

K/A Reference: 217000/A4.02 (3.9/3/9)
SG #7 (3.8/3.7)
SG #9 (3.9/3.5)
K4.04 (3.0/3.1)
A2.02 (3.8/3.7)

Examinee: _____**NRC Examiner:** _____**Date:** _____**Method of testing:**

Simulated Performance XX Actual Performance
Classroom ____ Simulator ____ Control Room ____ Plant XX

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. The RCIC turbine has tripped due to the mechanical overspeed trip device.
2. RCIC speed has been verified to be less than 4000 rpm.
3. RCIC turbine trip and throttle valve motor actuator is in the closed position.
4. All applicable prerequisites have been satisfied.
5. This task will be performed on Unit ____.

The Reactor Operator has directed you to locally reset the RCIC mechanical overspeed trip device per the operating procedure and inform the Control Room when the required actions are complete.

Task Standard:

All auxiliary operator actions necessary to reset a RCIC mechanical overspeed trip have been performed.

Applicant Performance: SAT/UNSAT

Required Materials:

Plant page

General References:

- 1.1(2) OP-16
2. Vol II/SD-16
3. AOR-OJT-JP-016-A01

Time Critical Task: YES/NO

Validation Time: 8 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
1.	Obtain current revision of OP-16, Section 8.3.	Current revision of OP-16 Section 8.3 obtained.	
2.	Depending on body position, either push or pull the emergency connection rod in the direction of the RCIC turbine trip and throttle valve (E51-V8) approximately one inch.	Emergency connection rod moved in direction of RCIC turbine trip and throttle valve approximately one inch.	Critical
3.	Observe tappet and ball assembly drop into place.	Tappet and ball assembly drops down into place.	
PROMPT: Inform applicant that the tappet and ball assembly has <u>NOT</u> dropped into place.			
4.	If the tappet and ball assembly does not drop in place, lightly depress the assembly.	Tappet and ball assembly lightly depressed and dropped into place.	Critical
PROMPT: When required, inform applicant that tappet and ball assembly <u>HAS</u> dropped into place.			
5.	Release the emergency connection rod.	Emergency connection rod released.	Critical
6.	Notify the control room that the mechanical trip device for the RCIC turbine is reset.	Control room notified that RCIC mechanical trip device for the RCIC turbine has been reset.	
TERMINATING CUE: The JPM may be terminated when all auxiliary operator actions necessary to reset a RCIC mechanical overspeed trip have been performed.			

JPM B.2.C

Facility: BRUNSWICK**Task No:** B.2.c**Task Title:** PERFORM ACTIONS ASSOCIATED WITH FIRES - Aligning the Fire Protection Alternate Water Supply**Job Performance Measure No:**

K/A Reference: 286000/A1.01 (2.9/2.9)
A1.05 (3.2/3.2)
A2.06 (3.1/3.2)
A3.01 (3.4/3.4)
A3.02 (3.1/3.2)
K3.03 (3.6/3.8)
K4.01 (3.4/3.6)
K4.03 (3.3/3.4)
K5.04 (2.9/2.9)

Examinee: _____**NRC Examiner:****Date:****Method of testing:**

Simulated Performance XX Actual Performance _____
Classroom _____ Simulator _____ Control Room _____ Plant XX

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. A seismic event has caused the structural integrity of the Fire Protection Storage Tank to become breached.
2. The Fire Protection System was in a normal operating configuration with some minor leaks and NO system demand before the seismic event.
3. All fire pumps have been secured per applicable sections of OP-41.
4. The Shift Supervisor has determined that the MUD Tank must now be lined up to supply the Fire Protection Header followed by Jockey Pump startup.

You are directed by the Control Operator to perform the Auxiliary Operator actions associated with transferring the Fire Protection System water supply to the MUD Tank, and then start the Jockey Pumps in accordance with OP-41. You are to inform the Control Operator when the task assignment is complete.

Task Standard:

When Auxiliary Operator actions necessary for transferring the Fire Protection System water supply to the MUD Tank, and the Jockey Pumps have been started in accordance with OP-41, this JPM is complete.

Applicant Performance: SAT/UNSAT

Required Materials:

1. Flashlight
2. Mosquito Repellant
3. Hard Hat
4. Safety Glasses
5. Approved Foot Wear
6. Hearing Protection

Time Critical Task: YES/NO

General References:

1. OP-41
2. SD-41
3. AOP-13.0
4. P&ID 9527-D-2043
5. AOR-OJT-JP-041-A02

Validation Time: 18 Min.

PERFORMANCE INFORMATION

Task	Description	Standard	Sat/Unsat
<p>NOTE: The applicant is expected to demonstrate his/her ability to obtain the needed sections of OP-41. After the applicant has satisfactorily demonstrated their ability to do this, the evaluator may provide copies of the procedure sections to the applicant.</p> <p>NOTE: The applicant is expected to perform a procedural revision verification using the NRCS Database. This expectation may be waived if this JPM is being performed as part of an exam and NRCS Database verification has been already demonstrated or will be demonstrated on a different JPM.</p> <p>NOTE: The applicant may wish to execute performance of OP-41 Attachment 48 for the purposes of documentation. This is an acceptable practice and is not dependant upon direction from OP-41 Section 8.51, Step 8.51.2.7. If an NRCS revision check is being performed, Attachment 48 is included as part of the check.</p>			
1.	Obtain current revision of OP-41 Section 8.51.	Applicant obtains copy of OP-41. Applicant performs NRCS revision check of procedure (if applicable for this JPM)	
2.	Applicant reviews index of OP-41 to determine the needed sections required to perform the task assignment.	Applicant determines from a review of OP-41 index that the following procedure sections are needed: Section 8.6 Section 8.51	
<p>NOTE: OP-41 Section 8.51 has no "prerequisites" listed. It is expected that the applicant would have reviewed the generic procedural prerequisites, however it is not "critical" that this review is completed under the given Task Conditions.</p> <p>NOTE: It is expected of the applicant to review the generic precautions and limitations of OP-41. Failure to perform this review is not "critical" under the given Task Conditions, but it should be noted as a weakness for evaluator to follow up on.</p>			
3.	Applicant reviews OP-41 Section 3.0, Precautions and Limitations.	Applicant determines from OP-41 Section 3.0 that there are no Precautions or Limitations directly applicable to the Auxiliary Operator for this task assignment.	
<p>PROMPT: If asked as a member of the Control Room Operating Crew about determination of OP-41 Prerequisites being met, acknowledge the request and inform the applicant that all applicable prerequisites are met.</p>			

Task	Description	Standard	Sat/Unsat
4.	Applicant reviews OP-41 Section 4.0, Prerequisites.	Applicant determines from a review of OP-41, Section 4.0 that several prerequisites are applicable. The applicant determines that all prerequisites of OP-41, Section 4.0 are met via either: Input from Control Operator <u>or</u> Unit SCO and/or self assessment.	
5.	Applicant discerns that he must perform OP-41, Section 8.51, before he can perform OP-41, Section 8.6.	Applicant enters and begins to execute OP-41, Section 8.51.	
PROMPT: When the applicant begins to evaluate the Initial Conditions of OP-41, Section 8.51, as the Control Room Supervisor, inform the applicant that you have evaluated both Initial Conditions 1 and 2 as having been met as required and that you are directing the applicant to continue with Step 1.			
6.	Applicant reads the Initial Conditions of OP-41, Section 8.51.	Applicant recognizes that Initial Conditions have been met as informed by the Control Room Supervisor.	
PROMPT: If asked for valve operation feedback by the applicant for determination of valve position, provide applicant information consistent with actions being taken for the particular valve			
7.	Ensure Upstream Drain Valve for 2-FP-V58, 2-FP-V59, is closed.	Applicant locates 2-FP-V59 in the northeast floor sump area of the Diesel Driven Fire Pump Room. Applicant removes locking devices from 2-FP-V59 and turns the valve handwheel clockwise in the closed direction until the handwheel movement becomes firmly unable to move any further with normal force.	Critical
8.	Unlock and close Combined Suction Valve From Fire Protection Storage Tank, 2-FP-V57.	Applicant locates 2-FP-V57 in the area immediately behind the Motor Driven Fire Pump (P-2) in the north end of the MWT Building. Applicant removes locking devices from valve handwheel <u>and</u> closes 2-FP-V57 by turning the valve handwheel clockwise in the closed direction until the handwheel	Critical

Task	Description	Standard	Sat/Unsat
		movement becomes firmly unable to move any further with normal force.	
9.	Unlock and open the Demineralized Water Storage Tank Outlet To The Fire Protection System, 2-MUD-V37.	Applicant locates 2-MUD-V37 on the west side of the MUD Tank. Applicant removes locking devices from valve handwheel <u>and</u> opens 2-FP-V37 by turning the valve handwheel counter-clockwise in the open direction until the handwheel movement becomes firmly unable to move any further with normal force.	Critical
10.	Unlock and open Fire Pumps Suction Valve From The Demineralized Water Storage Tank, 2-FP-V58.	Applicant locates 2-FP-V58 in the Diesel Driven Fire Pump Room in the northeast corner of the MWT Building. Applicant removes locking devices from valve handwheel <u>and</u> opens 2-FP-V58 by turning the valve handwheel counter-clockwise in the open direction until the handwheel movement becomes firmly unable to move any further with normal force.	Critical
11.	Applicant reads the NOTE immediately ahead of OP-41 Section 8.51, Step 8.51.2.5.	Applicant reads the NOTE and determines that it is applicable to the next step; OP-41 Section 8.51, Step 8.51.2.5.	
<p>NOTE: The applicant may wish to execute performance of OP-41 Attachment 48 for the purposes of documentation. This is an acceptable practice and is not dependant upon direction from OP-41 Section 8.51, Step 8.51.2.7. Step 8.51.2.7 would not be expected to be checked off since the Attachment 48 is not "complete".</p> <p>PROMPT: If contacted as a member of the Control Room Operating Crew for guidance concerning the starting of Fire Pump P-1 and/or P-2, direct the applicant to follow his initial instructions for the assigned task.</p>			
12.	Applicant recognizes that he was not directed to perform OP-41 Step 8.51.2.5.	Applicant stops performance of OP-41 Section 8.51 and does not perform OP-41 Steps 8.51.2.5 through 8.51.2.7. Applicant determines that he must now begin performance of OP-41 Section 8.6.	

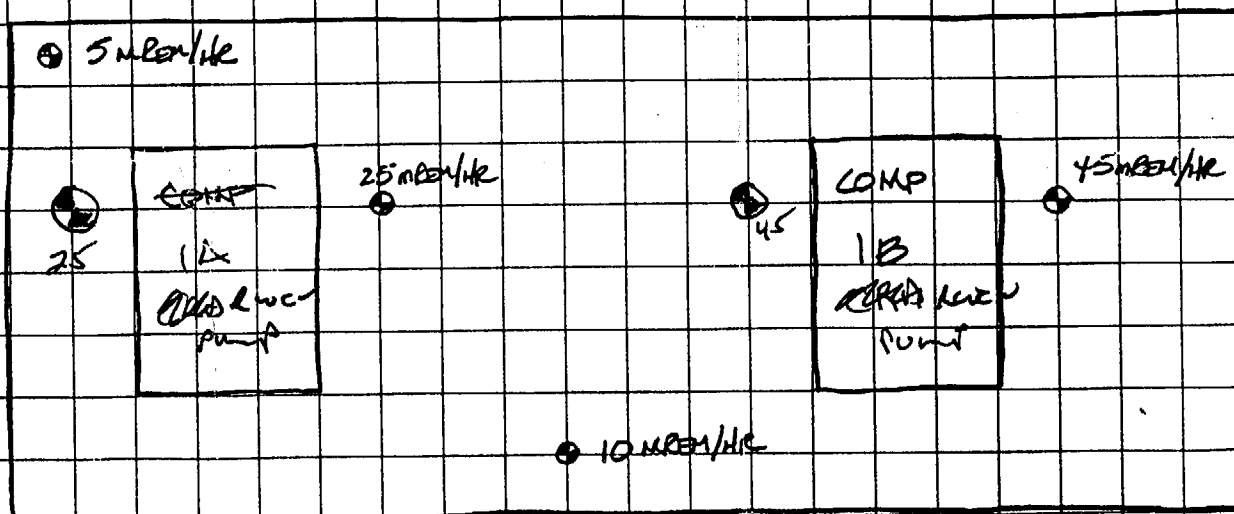
Task	Description	Standard	Sat/Unsat
<p>NOTE: If the applicant starts P-1 and/or P-2 and if the applicant recognizes his error and reports same to the Control Room, he should be allowed to continue using the PROMPTs provided.</p> <p>PROMPT: If applicant starts the Motor-Driven Fire Pump P-2 or the Diesel Driven Fire Pump P-1, <u>and</u> if the applicant checks a local Fire Protection Header Pressure Indicator, indicate to the applicant that pressure is 130 psig by pointing to the appropriate location on the gauge face. (Pressure will remain at this value for the duration of time that P-1 and/or P-2 are running.)</p> <p>PROMPT: If asked, if Control Room desires to isolate relief valves respond "NOT AT THIS TIME".</p> <p>PROMPT: If applicant reports that he erroneously started P-1 and/or P-2, inform the applicant that other Auxiliary Operators are enroute to secure the pumps and that he is to continue with Jockey Pump startup.</p> <p>PROMPT: If the applicant indicates that he would check the running pumps for proper operation, indicate to applicant as appropriate, that all pump <u>and</u> pump motor conditions appear to be normal.</p>			
13.	Applicant reads Initial Conditions of OP-41 Section 8.6.	Applicant recognizes that Initial Conditions 1 and 2 have been met.	
<p>PROMPT: When Jockey Pump P-4 is in HAND and if applicant did not start the Motor-Driven Fire Pump P-2 and/or the Diesel Driven Fire Pump P-1, and if the applicant checks a local Fire Protection Header Pressure Indicator, indicate to the applicant that pressure is 40 psig by pointing to the appropriate location on the gauge face.</p>			
14.	Place Jockey Pump P-4 in HAND.	<p>Applicant locates the Jockey Pump Control Panel in the south central area of the MWT Building.</p> <p>Applicant rotates the Jockey Pump P-4 Control Switch to the right into the HAND position, verifying that the associated indicator lights show that the red light is on and the green light is off.</p>	Critical
<p>PROMPT: When Jockey Pump P-3 is in AUTO, and if applicant did not start the Motor-Driven Fire Pump P-2 and/or the Diesel Driven Fire Pump P-1, and if the applicant checks a local Fire Protection Header Pressure Indicator, indicate to the applicant that pressure is 55 psig and very slowly rising* by pointing to the appropriate location on the gauge face.</p>			

Task	Description	Standard	Sat/Unsat
*Pressure should be rising about 3-5 pounds per minute			
15.	Place Jockey Pump P-3 in AUTO.	<p>Applicant locates the Jockey Pump Control Panel in the south central area of the MWT Building.</p> <p>Applicant rotates the Jockey Pump P-3 Control Switch to the right into the AUTO position. , verifying that the associated indicator lights show that the red light is on and the green light is off.</p>	Critical
TERMINATING CUE: When Auxiliary Operator actions necessary for transferring the Fire Protection System water supply to the MUD Tank, <u>and</u> the Jockey Pumps have been started in accordance with OP-41, this JPM is complete.			

4.05.06.07.08.09.010.011.0

□ SURVEY MAP

□ CHOOSE COMPONENT IN ROOM WITH A REDUNDANT COMPONENT, IF POSSIBLE,
SO CANDIDATE HAS TO CHOOSE COMPONENT CORRECTLY - MAKE FIELD AT
COMPONENT OF INTEREST 45 MREM/HR - PUT OTHER FIELD DATA AROUND
ROOM WITH DIFFERENT FIELD AT REDUNDANT COMPONENT - EXAMPLE:



READ TO THE EXAMINEE

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

TASK CONDITIONS:

1 BCRD PUMP

After Unit One refueling outage the [WORK WITH LICENSEE TO PICK LOCATION AND DEVELOP SURVEY MAP] requires maintenance. Two mechanics have been assigned the task. Listed below is the workers accumulated yearly dose following the refueling outage.

Worker	Description	Dose
1	CP&L Employee whose doses (CP&L and non-CP&L) for the current are known	1800 mrem TEDE
2	New CP&L Employee whose CP&L dose for the current year is known. Non-CP&L dose has not yet been determined	350 mrem TEDE
3	Vendor representative whose CP&L dose for the year is known. Non-CP&L dose has not yet been determined	400 mrem TEDE

Using the survey map provided calculate how long each worker may remain in the area to perform the maintenance before reaching the administrative exposure limits. Assume no dose is received in transit to the work area.

Facility: **BRUNSWICK**Date of Examination: 7/30-8/3/01Examination Level (circle one): ~~RO~~ / SROOperating Test Number: 1

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	GEN 2.1.3(3.0/3.4)	Evaluate Overtime Eligibility - <i>Correct</i>
	GEN 2.1.7 (3.7/4.4)	Perform Manual Heat Balance
A.2 A.6	GEN 2.2.30 (3.5/3.3)	Evaluate Refueling Data
A.3	GEN 2.3.4 (2.5/3.1)	Calculate Worker Stay Time
A.4	GEN 2.3.4 (3.0/3.5)	Determine Communication Methods for E-Plan Activation
		<i>Responsibility</i>

JPM A.1.a

Facility: BRUNSWICK**Task No:** A.1.a**Task Title:** Evaluate Overtime Eligibility.**Job Performance Measure No:****K/A Reference:** GEN 2.1.3 (3.0/3.4) Knowledge of shift turnover practices**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None

General References:

0AP-001, Rev 9

Modified LOT-OJT-JP-201-CO1

Time Critical Task: YES/NO**Validation Time:** 10 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

A startup is planned for the following shift. One Reactor Operator must be held over two hours for startup. The following is the work history (excluding shift turnover time) of the available reactor operators on shift (hours reflect those worked PRIOR to the 2 hour holdover). A break of at least 8 hours occurred between all work periods.

DAY	1	2	3	4	5	6	7	8 (Today)
Operator #1	0	0	12	12	14	10	14	10
Operator #2	0	3	10	12	12	12	8	14
Operator #3	0	0	12	12	12	8	8	15
Operator #4	0	8	12	10	10	8	10	12
Operator #5	0	4	12	10	10	14	10	12

Evaluate the work history for all 5 operators. Determine which operator(s), if any, can be held over for two hours without prior overtime approval, and determine which operators CANNOT be held over for two hours without prior overtime approval.

Task Standard:

Step	Description	Standard	SAT/UNSAT
1	Obtain a current revision of OAP-001	Current Revision of OAP-001 obtained	
2	Evaluate Operator 1	Determine Operator #1 would exceed 24 hours in a 48 hour period and would exceed 72 hours in a 7 day period and would require overtime authorization	Critical
PROMPT: If asked, inform applicant that operator 1 received authorization for exceeding 24 hours in a 48 hour period between days 5 and 6.			
3	Evaluate Operator 1	Determine Operator exceeded 24 hours in a 48 hour period between days 5 and 6	
4	Evaluate Operator 2	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	Critical
5	Evaluate Operator 3	Determine Operator #3 would exceed 16 hours in a 24 hour period and 24 hours in a 48 hour period and would require overtime authorization	Critical
6	Evaluate Operator 4	Determine that Operator #4 would not exceed any overtime guidelines	
7	Evaluate Operator 5	Determine Operator #2 would exceed 72 hours in a 7 day period and would require overtime authorization	Critical

JPM A.1.b (SRO)

Facility: BRUNSWICK**Task No:** A.1.b**Task Title:** Evaluation of Plant Chemistry Results per AI-81**Job Performance Measure No:****K/A Reference:** GEN 2.1.34 (2.3/2.9) Ability to maintain primary and secondary plant chemistry within allowable limits.**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None

General References:0AI-81 Rev 24, Water Chemistry
GuidelinesTechnical Requirements Manual,
Section 3.13

SRR-CLS-JP-201-C02

Time Critical Task: YES/NO**Validation Time:** 20 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. Unit Two has been operating at 100% power for 50 days.
2. The plant has entered AOP-26 due to a tube leak in the main condenser.
3. Chemistry has been directed to perform the required sample analyses.

INITIATING CUE:

You are directed to evaluate the attached Condensate Train chemistry data sheet per applicable plant procedures and Technical Specifications and determine any required action levels and/or Limiting Conditions for Operation based on the chemistry results.

Task Standard:

Step	Description	Standard	SAT/UNSAT
1	Obtain current revision of 0AI-81	Current revision of 0AI-81 obtained	
2	Determine that Reactor Water Conductivity ($1.232 \mu\text{S/cm}$) exceeds Action Level 2 based on $> 1 \mu\text{S/cm}$	Determines Reactor Water Conductivity exceeds Action Level 2.	
3	Determine that RWCU Conductivity ($0.122 \mu\text{S/cm}$) does not exceeds Action Level 0 based on 10% of Influent conductivity plus 0.055 ($[1.232 \times 0.1] + 0.055 = 0.1782$).	Determines RWCU Conductivity does not exceeds Action Level 0	
4	Determine that Condensate Pump Discharge Conductivity ($10.53 \mu\text{S/cm}$) exceeds Action Level 3 based on $> 10 \mu\text{S/cm}$.	Determines Condensate Pump Discharge Conductivity exceeds Action Level 3.	
5	Determine that Reactor Feed Water Conductivity ($0.159 \mu\text{S/cm}$) exceeds Action Level 2 based on $> 0.1 \mu\text{S/cm}$.	Determines Reactor Feed Water Conductivity exceeds Action Level 2	
6	Determine that Condensate Polisher System Effluent (CPE) Conductivity ($0.183 \mu\text{S/cm}$) exceeds Action Level 2 based on $> 0.1 \mu\text{S/cm}$.	Determines CPE Conductivity exceeds Action Level 2	
7	Determine that CST Conductivity ($2.479 \mu\text{S/cm}$) exceeds Action Level 1 based on $> 1 \mu\text{S/cm}$.	Determines Reactor Water Conductivity exceeds Action Level 2	
8	Determine Action Level 3 is applicable and plant shutdown and cooldown to $< 212^\circ\text{F}$ is required unless otherwise directed by Plant General Manager	Determine plant shutdown and cooldown is required based on Condensate Pump Discharge Conductivity at Action Level 3	Critical
NOTE: TRM limits are in ppm for Cl^- , the chemistry results are given in ppb.			
9	Determine that no TRM Action Levels have been exceeded	TRM Section 3.13 referenced and no limits determined to have been exceeded	

CONDENSATE TRAIN FOR BSEP UNIT # 2

DATE 23-jul-1999

POWER 100

TIME 07:35

REACTOR WATER

Conductivity (umho/cm) [≤ 0.3]	CL (ppb)	0.73	NO3 (ppb)	<	0.5
Actual 1.210	Indicated 1.232	SS (ppb)	NA	SO4 (ppb)	< 2.0
DO2 ppb		SiO2 (ppb)	5.	TOC (ppb)	NA.
Measured NA	Verified NA	Ph (5.6-8.6	NA		
Sample Point: 2-RXS-17		CPI	g 1.220		

"A" RWCU F/D EFFLUENT

Conductivity (umho/cm) [≤ 0.1]	
Actual 0.096	Indicated 0.122
SiO2 (ppb) < 5.	Flow (gpm) 100.
Hotwell Reject (gpm)	0.

"B" RWCU F/D EFFLUENT

Conductivity (umho/cm) [≤ 0.1]	
Actual 0.100	Indicated 0.110
SiO2 (ppb) < 5.	Flow (gpm) 100.

FEEDWATER

Cond.umho/cm [< 0.1]	
Act. 0.155	Ind. 0.159
DO2 ppb [20 - 100]	
Act. 30.	Ind. 56.
* Cl ppb	NA

COND. PUMP DISCHARGE

COND.umho/cm [< 0.1]	
Act. 10.52	Ind. 10.53
DO2 ppb [20 - 100]	
Act. 30.	Ind. 47.
* Cl ppb	NA
SiO2 ppb	NA

HTR. DRAIN HEAD

COND.umho/cm	
Act. 0.098	
Ind. 0.109	
SS ppb [< 10]	<

MAIN STEAM

COND.umho/cm

[< 1.0]

* If cond. $\leq .25$ Cl analysis required once/wk.
Feedwater flow #/hr 2.00E+06

Act.	0.062
Ind.	0.062

COND. F/D INFLUENT

capacity	
COND.umho/cm [< 1.0]	
remaining **	
Act. 9.872	
Ind. 9.883	

DEEP BED INFLUENT

COND.umho/cm [< 1.0]	
Act. 8.662	
Ind. 8.672	

DEEP BED EFFLUENT
#CL

COND.umho/cm [< 1.0]	
A BED	NA 274.90
B BED	NA 268.66
C BED	NA 268.79

COND. F/D EFFLUENT

COND.umho/cm [< 1.0]	
A F/D	NA
B F/D	NA
C F/D	NA
D F/D	NA

COND. POLISHING
EFFLUENT

COND.umho/cm [< 0.1]	
Act. 0.183	
Ind. NA	

D BED	NA 275.69
E BED	NA 263.63
F BED	NA 269.64

** should be changed at approx. 118# :CL capacity

CST CHEMISTRY

Cond. (umho/cm)	[≤ 1.0]	2.479
CL (ppb)	[< 100]	< 10.
SiO2 (ppb)		< 30.
Ph	[5.8-8.5]	5.90
SS (ppb)	[< 100]	< 10.
NO3 (ppb)		< 10.0
SO4 (ppb)		< 10.0
Level (Feet)	28. (Inches)	9.
Sample Point:	2-CO-V137	

TECHNICIAN: _____

REVIEWED BY : _____

JPM A.2

Facility: BRUNSWICK**Task No:** A.2**Task Title:** Evaluate Refueling Data.**Job Performance Measure No:**

K/A Reference: 2.2.30 (3.5/3.3) Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area / communication with fuel storage facility / systems operated from the control room in support of fueling operations / and supporting instrumentation.

Examinee: _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

None

General References:

OFH-11

Time Critical Task: YES/NO**Validation Time:** ? Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

Fuel loading is in progress on Unit 2. Indication for SRM A is 5 cps and indication for SRM B is 7 cps (initial loading of fuel bundles around both SRMs is complete).

Upon insertion of the next two fuel bundles, the control room operator observes the indication from the SRMs and records the following:

After Bundle 1

SRM A: 9 cps
SRM B: 17 cps

After Bundle 2

SRM A: 23 cps
SRM B: 37 cps

Evaluate this situation and describe any procedurally-mandated actions.

Task Standard:

After bundle 1:

SRM B has doubled and fuel movement should have been stopped at this point per OFH-11, 3.37.1.

SAT/UNSAT

After Bundle 2:

SRM B has increased by greater than a factor of 5 over baseline and fuel movement should be stopped per OFH-11, 3.37.2.

SAT/UNSAT

JPM A.3 (SRO)

Facility: BRUNSWICK**Task No:** A.3**Task Title:** Estimate Source Term for a Release from the Main Stack per PEP-03.6.1.**Job Performance Measure No:****K/A Reference:** 272000/A4.05 (2.3 / 3.7) - Ability to manually convert process radiation monitor readings to offsite release rates**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:**

Calculator

General References:OPEP-03.6.1 Rev. 11, Release
Estimation Based Upon
Stack/Vent Readings.

LOT-OJT-JP-301-A09

Time Critical Task: YES/NO**Validation Time:** 15 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. A Loss of Coolant Accident on Unit One (1) has required declaration of a General Emergency. Unit One (1) has initiated Drywell Venting actions due to high Hydrogen/Oxygen concentrations per EOP-01-SEP-01.
2. Off-Site Dose Projection is required. ERFIS is not available in the EOF, and the Radiological Control Manager has requested the Control Room to determine the Source Term for the Main Stack Release.
3. The Main Stack flow transmitter (2-VA-FT-3359) is not operational. Main Stack flow indication is not available.
4. Unit Two (2) has been placed in Hot Shutdown. Unit Two (2) specific releases to the Main Stack are SJAE A and Seal Steam Exhauster A.
5. Unit One (1) releases to the Main Stack consist of two drywell purge fans in operation and one Standby Gas Train (A) in operation.
6. Plant common releases to the Main Stack consist of AOG Building Ventilation and one Radwaste Exhaust Fan (B) in operation.
Recorder 2-D12-RR-4599 indicates the following:

Low Range (green) Pen is pegged high

Mid Range (blue) Pen indicates $3.3\text{E-}02$ (scale is $1\text{E-}4$ to $1\text{E+}2$)

High Range (red) Pen is pegged low.

INITIATING CUE:

You are directed by the Shift Superintendent to estimate the Source Term release from the Main Stack per PEP-03.6.1, and inform him of the Source Term estimation.

Task Standard:

Step	Description	Standard	SAT/UNSAT
1	Obtain current revision of PEP-03.6.1	Current Revision of OPEP03.6.1 obtained	
2	Refer to Attachment 1 for source term calculation from the plant stack and determine calculation per Attachment 1 is required	Determined that calculation of main stack source term is required by PEP-03.6.1 Attachment 1	
3	Enter time on Attachment 1	Time is entered on Attachment 1	
NOTE: If requested, inform applicant that the digital readout indicates 3.31E-2			
4	Obtain monitor readings from 2-D12-RR-4599 (on cue sheet)	Record 2-D12-RR-4599 reading as 3.3E-2 on Attachment 1	
5	Estimate Stack Flow using Attachment 6 as follows: Unit 1 flow determined to be (DW Purge A + DW Purge B + SBTGT A) 17,900 CFM Unit 2 flow determined to be 950 cfm (SJA E A + SPE A) Common flow determined to be 41,200 cfm (RW Fan B + AOG Vent) Total Stack flow estimated at (Unit 1 + Unit 2 + Common) 60,050 cfm	Unit 1 flow calculated and recorded as 17,900 cfm on attachment 6 Unit 2 flow determined to be 950 cfm and recorded on Attachment 6 Common flow determined and recorded as 41,200 cfm on attachment 6 Total Stack flow estimate recorded as 60,050 cfm on attachment 6	
6	Determine Release Rate (3.3E-2 X 60,050 X 472 = 9.35 E5 _C/sec)	Release Rate from Main Stack determined to be 9.3-9.4 E5 _C/sec	Critical

JPM A.4 (SRO)

Facility: BRUNSWICK**Task No:** A.4**Task Title:** NRC Reporting Requirements - Large Break LOCA**Job Performance Measure No:****K/A Reference:** GEN 2.4.30 (2.2/3.6) Knowledge of which events related to system operations/status should be reported to outside agencies.**Examinee:** _____**NRC Examiner:****Date:****Method of testing:**Simulated Performance ____ Actual Performance XXClassroom XX Simulator ____ Control Room ____ Plant**Applicant Performance:** SAT/UNSAT**Required Materials:****General References:**

OOI-01.07, Rev 4

SRR-OJT-JP-201-D09

Time Critical Task: YES/NO**Validation Time:** 10 Min.

READ TO THE EXAMINEE

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

TASK CONDITIONS:

1. Unit One (1) was operating at rated power.
2. A line break in the drywell resulted in a Reactor scram. HPCI/RCIC initiated but were unable to maintain Reactor level. No circuit alterations were performed for HPCI or RCIC. Reactor level dropped below the Top of Active Fuel requiring Emergency Depressurization. Low pressure ECCS initiated and restored Reactor level to the normal band.
3. Current plant conditions are:

Reactor Level	+180"
Reactor Pressure	25 psig
Drywell Pressure	10 psig
4. Core Spray is injecting to maintain Reactor Level. One RHR Loop is operating in drywell and suppression chamber spray. One Loop of RHR is operating in suppression pool cooling and spray.
5. All systems functioned as designed during the event. There are no significant releases of radioactivity in excess of 10CFR20 limits. There are no indications of fuel failure.

INITIATING CUE:

You are directed by the Shift Superintendent to determine reportability of this event per OI-01.07, complete Attachment 1, Reportability Evaluation Checklist, and inform the Shift Superintendent when Attachment 1 is completed.

PERFORMANCE CHECKLIST

NO.	STANDARD	SAT/UNSAT
1.	Current revision of OI-01.07 obtained.	
2.	<p>The following one hour reportability items are checked yes:</p> <p>a. 1.3</p> <p>b. 1.8</p> <p>c. 1.13</p>	
3.	<p>The following four hour reportability items are checked yes:</p> <p>a. 2.2.1</p> <p>b. 2.2.2</p> <p>c. 2.2.3</p> <p>d. 2.2.4</p> <p>e. 2.2.5</p> <p>f. 2.2.6</p> <p>g. 2.2.7</p> <p>h. 2.2.8</p> <p>i. 2.2.9</p> <p>j. 2.2.11</p> <p>k. 2.2.12</p> <p>l. 2.2.13</p> <p>m. 2.2.14</p> <p>n. 2.2.16</p> <p>o. 2.2.18</p>	
4.	Event is determined to be one hour reportable.	Critical
5.	Shift Superintendent informed of results.	