APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-1

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-1 (Alt Path)**

Task Title: Verify Reactivity Control safety function is satisfied.

Task Number: 201.009

K/A Reference: **004 A2.14 (4.4, 4.7)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **A significant electrical transient and Unit-1 trip have occurred.**
3. **You are the Reactor Operator**

Initiating Cue:

The CRS directs you to Perform Reactivity Safety Function per EOP-0

Task Standard:

The candidate will initiate Emergency Boration per EOP-0.

1.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. EOP-0, Post-Trip Immediate Actions

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)

_____ 2. Enter malfunctions:

- _____ a. 4KV001_03, fault on 13 4kv bus on F1
- _____ b. 4KV001_04, fault on 14 4kv bus on F2

_____ 3. Place simulator in run

_____ 4. Initiate F1 and F2

_____ 5. Manually trip the reactor when 11 and 12 SGFPs trip on low suction pressure

_____ 6. Freeze the simulator.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you perform Reactivity Control safety function per EOP-0	
Locates the reactivity control plaque	Same as element.
1. Depress ONE set of Manual REACTOR TRIP buttons.	Same as element.
2. Check the Reactor has tripped by the following: • Prompt drop in NI power • Negative SUR	The candidate determines the reactor has tripped and alternate action step 2.1 is **NOT** applicable.
3. Check that **NO** more than ONE CEA is **NOT** fully inserted.	The candidate determines that CEA positions **CANNOT** be determined and alternate action step 3.1 is required.
3.1 **IF** more than ONE CEA fails to fully insert, **THEN** borate the RCS to at least 2300 ppm as follows: a. Shut the VCT M/U valve, 1-CVC-512-CV.	The candidate places the handswitch for 1-CVC-512-CV in close.
b. Open the BA DIRECT M/U valve, 1-CVC-514-MOV.	The candidate may place 1-CVC-514-MOV hand switch in open. 514-MOV is deenergized so this step is NOT critical
c. Open the BAST GRAVITY FD valves: • 1-CVC-508-MOV	Candidate opens 1-CVC-508-MOV
• 1-CVC-509-MOV	Candidate opens 1-CVC-509-MOV
d. Verify the M/U MODE SEL SW, 1-HS-210, is in MANUAL.	The candidate verifies 1-HS-210 in manual.
e. Start a BA PP.	The candidate starts 11 BA pump. (12 BA pump is deenergized due to loss of power affects)

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
f. Shut the VCT OUT valve, 1-CVC-501-MOV.	The candidate places 1-CVC-501-MOV in close.
g. Start **ALL** available CHG PPs.	The candidate verifies 11 charging pump running. The loss of 14 4kv bus starts all available charging pumps so NOT critical.
4. Verify demineralized water makeup to the RCS is secured as follows: • 11 and 12 RC M/U PPs are secured	Candidate verifies 11 and 12 RCMU pumps are secured.
• VCT M/U valve, 1-CVC-512-CV, is shut	Candidate verifies 1-CVC-512-CV is shut.
• **IF** RCS Makeup is in Direct Lineup, **THEN** the RWT CHG PP SUCT, 1-CVC-504-MOV, is shut	The candidate determines this step is **NOT** applicable
The candidate reports 'Reactivity Control is Complete' (or met)	
Note: The candidate may provide additional information for valves and pumps not operating due to loss of power. This additional information is not critical.	
Terminating Cue: This JPM is complete when the candidate reports the status of the Reactivity Control safety function. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SIM-1**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **A significant electrical transient and Unit-1 trip have occurred.**
3. **You are the Reactor Operator**

Initiating Cue:

The CRS directs you to Perform Reactivity Safety Function per EOP-0

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

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INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-2

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-2 (Alt Path)**

Task Title: Respond to RCS leakage exceeding one charging pump in modes 1 and 2

Task Number: 202.015

K/A Reference: **002 A2.01 (4.3, 4.4)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 is in Mode 1 at 100% power.**
2. **An RCS leak has occurred.**
3. **The STA has calculated the RCS leak rate to be 75 gpm.**
4. **You are the Control Room Operator**

Initiating Cue:

The CRS directs you to perform AOP-2A step VI.E, 'Attempt to isolate the leak'

Task Standard:

The candidate will attempt to isolate letdown. The leak will remain greater than the capacity of a charging pump requiring a Reactor Trip.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. AOP-2A, EXCESSIVE REACTOR COOLANT LEAKAGE

Time Critical Task:

No

Validation Time:

10 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)

_____ 2. Enter malfunctions:

_____ a. RCS003, RCS Leak, at 75 gpm

_____ 3. Place simulator in run

_____ 4. Open 1-PS-5464, plant sample isolation valve

_____ 5. Place an off-normal pink ring on 1-PS-5464

_____ 6. Freeze the simulator when a second charging pump starts (about 4 minutes)

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to perform AOP-2A step VI.E, 'Attempt to isolate the leak'	
Locates AOP-2A section VI.E on page 35	Same as element
1. Verify that the L/D CNTMT ISOL valves are shut: • 1-CVC-515-CV	Candidate will place hand switches for 1-CVC-515-CV in close.
• 1-CVC-516-CV	Candidate will place hand switches for 1-CVC-516-CV in close.
2. Check there is **NO** PORV leakage by following indications: • Quench Tank Parameters • PORV discharge piping temperatures, computer points T107 and T108 • Acoustic Monitor indication	Candidate will determine there is no PORV leakage due to
3. Verify that RCS SAMPLE ISOL valve, 1-PS-5464-CV, is shut.	The candidate closes 1-CV-5464
4. Verify that the Reactor Vessel Vent valves are shut: • 1-RC-103-SV • 1-RC-104-SV	The candidate verifies the RCS vent valves closed
5. Verify that the PZR Vent valves are shut: • 1-RC-105-SV • 1-RC-106-SV	The candidate verifies the PZR vent valves closed

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
NOTE A leak on the Charging header which exceeds the capacity of the charging pumps can be identified by Charging header pressure indicating less than RCS pressure. Identification of the leak may be missed if more than one charging pump is running.	
6. Determine if the leak is on the Charging header by performing the following actions: a. Stop all but **ONE** CHG PP.	Same as element
b. **IF** Charging header pressure is less than RCS Pressure, **THEN** assume the leak is on the Charging header.	The candidate determines the leak is NOT on the charging header.
c. **IF** the leak is **NOT** on the Charging header, **THEN** start any CHG PPs that were stopped.	The candidate starts charging pumps turned off in step 6.a.
7. **IF** the leak is on the Charging header, **THEN** perform the following actions:	Candidate determines the step is not applicable
8. **IF** the leak is determined to be occurring inside Containment by checking the following indications: • Rise in Containment temperature, pressure, humidity or sump level alarm frequency • Rise in Containment gaseous or particulate activity • "U-1 WR NOBLE GAS RAD MON" and "UNIT 1 MAIN VENT GASEOUS" alarms clear **THEN** perform the following actions:	The candidate determines the leak is inside the containment based on Containment sump level alarm and containment humidity
a. Start **ALL** available CNTMT AIR CLRs in HIGH.	Same as element

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
b. Open the CNTMT CLR EMER OUT valves for the operating CNTMT AIR CLRs.	Same as element
9. **IF** the leak is **NOT** occurring inside of Containment, **THEN** perform the following actions:	Candidate determines the step is not applicable
10. Determine that **NO** leakage into the Component Cooling System is indicated by: • **NO** rising trends on Component Cooling Radiation Monitor, 1-RI-3819 • CC HEAD TK LVL" high alarm clear	The candidate determines there is NO leakage into the component cooling system
The candidate reports AOP-2A block step E is complete.	
CUE: Acknowledge step E is complete	
CUE: Perform block AOP-2A step F, DETERMINE THE APPROPRIATE ACTIONS FOR RCS LEAKAGE, ON PAGE 42	
1. Check that the leak has been isolated.	Candidate will determine the leak has not been isolated. Candidate will perform alternate step F.1.1
1.1 **IF** the leak has **NOT** been isolated **AND** the leak is greater than the capacity of **ONE** Charging Pump, **THEN**, with the approval of the SM/CRS, perform the following actions: a. Trip the Reactor. b. **IMPLEMENT** EOP-0, POST TRIP IMMEDIATE ACTIONS.	The candidate will recommend tripping the reactor and implementing EOP-0
Terminating Cue: This JPM is complete when the candidate recommends a manual reactor trip. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SIM-2**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

_____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 is in Mode 1 at 100% power.**
2. **An RCS leak has occurred.**
3. **The STA has calculated the RCS leak rate to be 75 gpm.**
4. **You are the Control Room Operator**

Initiating Cue:

The CRS directs you to perform AOP-2A step VI.E, 'Attempt to isolate the leak'

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

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JPM #: SIM-3

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-3 (Alt Path)**

Task Title: Notes failure of an operating HPSI pump and establishes safety injection using 12 HPSI pump prior to exiting EOP-0

Task Number: **201.132**

K/A Reference: **006 A2.02 (3.9, 4.3)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **11 HPSI pump is tagged out for maintenance**
2. **Unit 1 was in Mode 1 at 100% power.**
3. **A plant transient and Unit trip occurred**
4. **EOP-0 has been completed, EOP-5 has been implemented.**
5. **You are the Reactor Operator**

Initiating Cue:

The CRS directs you to perform EOP-5 block step D, 'Monitor RCS Depressurization'

Task Standard:

The candidate determines that there is insufficient HPSI flow from 13 HPSI pump. The candidate will starts 12 HPSI pump aligned to the 13 HPSI pump flow path.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. EOP-5, LOSS OF COOLANT ACCIDENT

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)

_____ 2. Enter malfunctions:

_____ a. F1: RCS002, RCS leak @ 1200 gpm

_____ 3. Enter Overrides

_____ a. 1-SI-406, 13 HPSI pump discharge valve, open @ .07

_____ 4. Tag 11 HPSI PP HS in PTL

_____ 5. Tag 1-SI-656 in close

_____ 6. Place simulator in run

_____ 7. Initiate F1

_____ 8. Close 1-CV-515 and 1-CV-516

_____ 9. Stop 11A and 12B RCPs

_____ 10. Freeze simulator 5 minutes after SIAS actuates

_____ 11. Acknowledge all alarms

ELEMENT (* = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to perform EOP-5 block step D, 'Monitor RCS Depressurization'	
Locates EOP-5 block step D on page 8	Same as element.
1. **IF** pressurizer pressure is less than or equal to 1725 PSIA **OR** containment pressure is greater than or equal to 2.8 PSIG, **THEN** verify SIAS actuation.	Candidate will determine that SIAS has actuated by checking SIAS alarm, 13 HPSI pp has started, and HPSI MOVs have opened.
2. **IF** pressurizer pressure is greater than 1725 PSIA **AND** containment pressure is less than 2.8 PSIG, **THEN** perform the following actions to block SIAS:	Candidate will determine the step is NOT applicable
3. **IF** SIAS has actuated, **THEN** perform the following actions: a. Verify the following pumps are running: • 11 HPSI PP • 13 HPSI PP • 11 LPSI PP • 12 LPSI PP • **ALL** available CHG PPs	Determines 11 HPSI is not running due to a tagout
b. Verify safety injection flow: • HPSI flow **PER** ATTACHMENT(10), HIGH PRESSURE SAFETY INJECTION FLOW, when pressure is below 1270 PSIA	Candidate locates EOP attachments, refers to ATTACHMENT (10), and determines 13 HPSI flow is less than the minimum required based on addition of the 4 loop flow indicators and/or the HPSI total flow indication.
b.1 Perform the following actions as necessary: • **IF** 11 HPSI PP failed, **THEN** start 12 HPSI PP.	Candidate determines 11 HPSI pump did not fail, it is tagged out

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
• **IF** 13 HPSI PP failed, **THEN** align 12 HPSI PP as follows:	Candidate determines 13 HPSI pump has failed due to its low flow
(1) Start 12 HPSI PP	Candidate starts 12 HPSI pump
(2) Open HPSI HDR XCONN valve, 1-SI-653-MOV.	Candidate opens 1-SI-653
(3) Shut HPSI HDR XCONN valve, 1-SI-655-MOV.	Candidate closes 1-SI-655
• Ensure electrical power is available to valves and pumps.	Same as element
CUE: Another operator will verify Safety Injection lineup per attachment 2.	
• Verify safety injection system lineup **PER** ATTACHMENT (2), SIAS VERIFICATION CHECKLIST.	
Terminating Cue: This JPM is complete when the 12 HPSI pump is injecting into the RCS per step b.1 second bullet. No further actions are required. The evaluator is expected to end the JPM.	

Time Stop: _____

Verification of Completion

Job Performance Measure Number: **SIM-3**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **11 HPSI pump is tagged out for maintenance**
2. **Unit 1 was in Mode 1 at 100% power.**
3. **A plant transient and Unit trip occurred**
4. **EOP-0 has been completed, EOP-5 has been implemented.**
5. **You are the Reactor Operator**

Initiating Cue:

The CRS directs you to perform EOP-5 block step D, 'Monitor RCS Depressurization'

APPLICANT: _____

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JPM #: SIM-4

Form ES-C-1
Worksheet

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-4 (Alt Path)**

Task Title: Takes alternate actions for turbine stop and control valve failure by shutting MSIVs, or if SGIS actuates notes an MSIV failed to shut on SGIS and shuts the MSIVs.

Task Number: **093.002**

K/A Reference: **045 A3.04 (3.4, 3.6)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒ Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **A Switchyard Fault has occurred**
3. **The reactor has tripped**
4. **You are performing duties as the Control Room Operator**

Initiating Cue:

The CRS directs you to perform Turbine Trip per EOP-0

Task Standard:

A main turbine stop valve and control valve have failed to automatically close on the plant trip. This will cause the Main Turbine to overspeed and steam generator pressures to lower rapidly. SGIS will not actuate to protect the plant. The candidate will shut the Main Steam Isolation Valves and secure the Main Generator Exciter.

Form ES-C-1
Worksheet

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. OI-28, OPERATION OF THE 500 KV SWITCHYARD
2. EOP-0, POST-TRIP IMMEDIATE ACTIONS

Time Critical Task:

No

Validation Time:

5 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)
_____ 2. Enter malfunctions:
  _____ a. SWYD001_02, Breaker 552-22 failure
  _____ b. TG005_01, Main Turbine Stop Valve and Control Valve 1 failed as-is
  _____ c. ESFAXXXX, SGIS auto failure
_____ 3. Place simulator in run
_____ 4. Place breaker 552-22 in open
_____ 5. Freeze simulator

Form ES-C-1
Worksheet

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The RO announces 'The reactor is tripped', the CRS announces 'Perform EOP-0'	
1. Check the Reactor has tripped.	Candidate verifies the reactor has tripped
2. Ensure the Turbine has tripped by performing the following actions: a. Depress **BOTH** TURBINE TRIP buttons.	Candidate depresses both turbine trip buttons
b. Check the Turbine Main Stop Valves shut: • MSV 1 • MSV 2 • MSV 3 • MSV 4	Candidate determines MSV 1 did not shut and alternate step b.1 is required
Note: The candidate may report 'Taking alternate actions for (stop valve open)'. This report is not critical.	
CUE: Acknowledge alternate actions	
b.1 **IF ANY** Turbine Main Stop Valve failed to shut, **THEN** shut **BOTH** MSIVs.	Candidate will shut both Main Steam Isolation Valves
c. Check Turbine Speed drops.	Candidate determines turbine speed is lowering
d. **IF** the Turbine was paralleled to the grid, **THEN** verify the Turbine Generator Output breakers open: • 11 GEN BUS BKR, 0-CS-552-22	The candidate determines breaker 552-22 did not open and takes its handswitch to open.
• 11 GEN TIE BKR, 0-CS-552-23	Same as element
e. Verify 11 GEN FIELD BKR, 1-CS-41, is open.	Same as element

Form ES-C-1
Worksheet

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
f. Verify 11 EXCITER FIELD BKR,1-CS-41E, is open.	The candidate will open the exciter field breaker The exciter field breaker will not automatically open
3. Ensure **BOTH** MSR 2ND STG STM SOURCE MOVS are shut: • 1-MS-4025-MOV (11 MSR) • 1-MS-4026-MOV (12 MSR)	Determines the valves have not shut due to loss of power and alternate action step 3.1 is required.
3.1 **IF EITHER** MSR 2ND STG STM SOURCE MOV failed to shut, **THEN** perform the following actions: a. Verify the MSR 2ND STG HIGH LOAD MOV is shut: • (11 MSR) 1-MS-4018-MOV • (12 MSR) 1-MS-4017-MOV	Same as element. (Not critical since Main Steam Isolation Valves were closed in step b.1)
b. Dispatch an operator to verify the MSR 2ND STAGE BYPASS CONTROL VALVE panel loader in MANUAL with panel loader output at zero.	Same as element
The Candidate will report 'Turbine Trip is complete' or similar	
Terminating Cue: This JPM is complete when the candidate reports the Turbine Trip safety function. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Form ES-C-1
Worksheet

Verification of Completion

Job Performance Measure Number: **SIM-4**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

Form ES-C-1
Worksheet

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **A Switchyard Fault has occurred**
3. **The reactor has tripped**
4. **You are performing duties as the Control Room Operator**

Initiating Cue:

The CRS directs you to perform Turbine Trip per EOP-0

APPLICANT: _____

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JPM #: SIM-5

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-5 (Alt Path)**

Task Title: Determine whether a RCP seal has failed.

Task Number: 064.013

K/A Reference: **003 A2.01 (3.4, 3.9)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **The overhead annunciator alarm E55 "11B RCP SEAL TEMP HI/PRESS" has come in**
3. **You are performing the duties of the Unit 1 RO.**

Initiating Cue:

Initiating Cue: The CRS directs you to respond to alarm window E55.

Task Standard:

This JPM is complete when the operator determines that two seals have failed on 11B RCP and recommends an expeditious shutdown. The evaluator is expected to end this JPM.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. Alarm Manual 1C06

2. OI-1A, Reactor Coolant System and Pump Operations

Time Critical Task:

No

Validation Time:

10 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)

_____ 2. Enter malfunctions:

_____ a. Insert RCS011_02, 11B RCP middle seal failure

_____ b. Insert RCS012_02, 11B RCP lower seal failure

_____ 3. Place simulator in run

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to respond to the RCP alarm.	
Identify and locate Alarm Response Manual for 1C06 window E-55.	Same as element.
CAUTION **There is a potential for heat checking of seal faces if RCP seal limits have been exceeded. This heat damage may cause seal degradation/failure during RCS depressurization (compressive forces removed) or subsequent RCP starts (centrifugal forces).**	
CUE: Middle seal press indicated on 1-PIA-162 is approximately 2220 PSIA. Upper Seal Press indicated on 1-PIA-163 is approximately 2220 PSIA.	
Checks validity of alarm.	Checks Input Devices for alarms. Determines that high middle seal pressure alarm and high upper seal pressure alarm exist. Checks alarms against setpoints and determines alarms are valid.
Note to Evaluator: ***The operator may reference OI-1A to try to determine how many seals have failed.***	
Reviews POSSIBLE CAUSES.	Checks **POSSIBLE CAUSES** and determines that the abnormal conditions are caused by a seal failure.
1. 11B RCP seal high temperature.	Candidate determines step is N/A
2. 11B RCP seal high or low pressure.	Candidate determines this step is applicable.
CUE: 11B RCP bleed-off flow indicates approximately 2.5 gpm.	
a. **CHECK** RCP seal bleed-off flow normal.	Checks Bleed-off flow on Plant Computer and determines the vapor seal is not failed.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
NOTE: **If RCP seal bleed-off is less than normal (or zero) with normal seal pressure, the vapor seal may be failed.** • IF **the vapor seal is determined to be failed,** THEN IMPLEMENT **AOP-2A, Excessive Reactor Coolant Leakage**	
CAUTION **Debris from a failed seal may propagate to remaining seal stages, eventually leading to complete seal failure.**	
CUE: CRS will contact System Engineer.	
b. **IF** alarm is due to the failure of ONE seal, **THEN** closely monitor and trend the remaining seals for an increased rate of degradation **AND CONTACT** the System Engineer immediately to provide an evaluation of continued operability **PER** CNG-OP-1.01-1002, Conduct of Operability Determinations/Functionality Assessments.	Determines step is N/A.
c. **IF** alarm is due to the failure of TWO or more seals, **THEN,**	Determines 11B RCP lower and middle seals have failed
(1). **COMMENCE** an expeditious plant shutdown **PER** OP-3 Normal Power Operation, and OP-4, Plant Shutdown from Power Operation to Hot Standby.	Candidate recommends plant shutdown to CRS due to two failed seals on 11B RCP
TIME STOP _____	
TERMINATING CUE: This JPM is complete when the operator has determined that 11B RCP has two failed seals and recommends an expeditious shutdown. The evaluator is expected to end this JPM.	

Verification of Completion

Job Performance Measure Number: **SIM-5**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **The overhead annunciator alarm E55 "11B RCP SEAL TEMP HI/PRESS" has come in**
3. **You are performing the duties of the Unit 1 RO.**

Initiating Cue:

Initiating Cue: The CRS directs you to respond to alarm window E55.

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

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OPERATOR EXAM

JPM #: SIM-6

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-6**

Task Title: Respond to the loss of a 120 volt vital AC bus

Task Number: **202.100**

K/A Reference: **006 A2.01 (3.4, 3.9)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **An electrical transient has occurred.**
3. **You are the Control Room Operator**

Initiating Cue:

The CRS directs you to Perform block step IV.A of AOP-7J.

Task Standard:

The candidate will use AOP-7J to diagnose a loss of 1Y01. The candidate will restore pressurizer pressure and level instruments affected by the bus loss. The candidate will protect the pressurizer by securing charging pumps before exceeding 225 inches. The candidate will protect RCPs by placing 12 CC HX in service.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. AOP-7J, Loss of 120 Volt Vital AC or 125 Volt Vital DC Power

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

_____ 1. Reset to IC-24 (both units at 100%)

_____ 2. Enter malfunctions:

_____ a. Loss of 1Y01 on F1

_____ 3. Place simulator in run

_____ 4. Secure 12 CC HX per OI-16

_____ 5. Initiate the loss of 1Y01

_____ 6. Freeze simulator when pressurizer level or pressure alarm annunciates

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to Perform block step IV.A of AOP-7J.	
Locates the AOP-7J	Same as element.
CUE: The CRS will perform step 1	
1. Perform the following immediate actions: a. Confirm with the Fuel Handling Supervisor that any fuel assembly being handled has been placed in a safe location. b. Suspend movement of irradiated fuel. c. Suspend movement of heavy loads over irradiated fuel. d. **IF** in Modes 5 or 6, **THEN** suspend operations involving positive reactivity additions that could result in loss of required SDM or boron concentration.	N/A
2. **GO TO** 1C24A.	Same as element.
3. **IF** 11 120 Volt Vital AC Instrument Bus (1Y01) is deenergized, **AND** 11 125 Volt DC Bus is energized, **THEN PROCEED** to Section V., 11 120 VOLT VITAL AC INSTRUMENT BUS (1Y01).	The candidate reviews indications on 1C24A for 1Y01 and 11 DC Bus then determines the a loss of only 1Y01 has occurred and proceeds to section V on page 9.
Cue: Acknowledge recommendation, continue with the procedure	
1. Verify that the PRZR PRESS CH SEL Switch is in the Y position.	The candidate places PRZR PRESS CH SEL Switch in Y.
2. Verify that the RRS CH SEL Switch is in the RRS-Y position.	The candidate places RRS CH SEL Switch in Y.
3. Verify that the PRZR LVL CH SEL Switch is in the 110Y position.	Same as element.
4. Verify that the PZR HTR LO LVL CUT-OFF SEL Switch is in the Y position.	The candidate places PZR HTR LO LVL CUT-OFF SEL Switch in Y.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
CUE: Another operator will place switch S1 in OFF, continue	
5. Isolate the RCS Loop 11 instruments to RRS Channel Y by placing switch S1 to OFF.	N/A
6. Shut the L/D CNTMT ISOL valves: • 1-CVC-515-CV	Candidate shuts 1-CV-515
• 1-CVC-516-CV	Candidate shuts 1-CV-516
Note: If pressurizer level reaches 225 prior to candidate performing step 7, the candidate should stop all charging pumps.	
7. Operate the selected charging pump as necessary to maintain PZR level within 15 inches of programmed level, **NOT** to exceed 225 inches.	Candidate will secure the running charging pump(s).
8. Operate Pressurizer HTRs and PRZR SPRAY VLVs as necessary to maintain RCS pressure between 2225 and 2275 PSIA.	Same as element.
Note: The candidate may perform the following step from memory or by using OI-16 section 6.4.	
9. Restore 11 Saltwater header: a. Verify 12 CC HX is in service.	The candidate will place 12 CC HX in service by • opening 1-CC-3826-CV • throttle open 12 CC HX SW FLOW CONTR, 1-HIC-5208
Terminating Cue: This JPM is complete when the candidate places 12 CC HX in service. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SIM-6**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 was in Mode 1 at 100% power.**
2. **An electrical transient has occurred.**
3. **You are the Control Room Operator**

Initiating Cue:

The CRS directs you to Perform block step IV.A of AOP-7J.

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

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JPM #: SIM-7

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SIM-7 (Alt Path)**

Task Title: Override shut a PORV

Task Number: **064.035**

K/A Reference: 007.A2.01 (3.9, 4.2)

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☐ Simulator: ☒ Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 1 is stable in Mode 4 at 250F and 225 psia**
2. **You are performing duties as the Reactor Operator**
3. **Alarm E-21, PORV ENERGIZED, alarm has been received**

Initiating Cue:

The CRS directs you to respond to alarm window E-21

Task Standard:

The candidate will diagnose that the PORV is open due to equipment malfunction and shut the associated PORV block valve.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. ALM-1C06, RCS Control Alarm Manual

Time Critical Task:

No

Validation Time:

10 minutes

Simulator Setup:

_____ 1. Reset to IC-1

_____ 2. Enter malfunctions:

_____ a. Override 1-PI-103-1 to 1533#

_____ 3. Place simulator in run

_____ 4. Override PORV 402 to "manopen"

_____ 5. Freeze the simulator when pressurizer pressure lowers to 225 psia.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to respond to alarm window E-21	
Locates the 1C06 alarm manual and refers to E-21	Same as element.
1. The PORVs are energized.	The candidate determines the step is applicable since PORV 402 is open
1. **PERFORM** the following: a. **IF** reactor trip occurs, **THEN IMPLEMENT** EOP-0, Post-Trip Immediate Actions.	The candidate determines the reactor is shut down and step is **NOT** applicable.
CUE: The shift manager will contact the electric shop	
b. **NOTIFY** the electric shop to verify the trip status of the PORV thermal overloads to ensure PORV operability. **[B0034]**	
c. **IF** the PORVs are in NORMAL, **THEN**: …	The candidate determines PORVs are in variable MPT and step is NOT applicable
d. **IF** the PORVs are in MPT ENABLE, **THEN**:	The candidate determines PORVs are in variable MPT and step is applicable
(1) **TRIP** any RCPs operating in the NON-OPERATING AREA of the RCP curve	Candidate refers to RCP curve for current lineup and determines RCP are in the non-operating area of the curve. Candidate secures 11A and 12B RCPs

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
(2) **WHEN** the cause of the high pressure condition has been corrected, **THEN**: **[B0064]**	Candidate determines the PORV is open due to equipment malfunction and not high RCS pressure. Determines step is N/A
(3) **IF** a PORV fails to shut or is open due to a failed transmitter, **THEN SHUT** the applicable PORV Block, 1-RC-403-MOV or 1-RC-405-MOV.	The candidate determines PORV 402 is open due to a failed transmitter and closes the PORV 402 block valve 1-RC-403-MOV
CUE: The CRO will perform step 1.d.(4)	
(4) **DRAIN** the PORV discharge piping to the Quench Tank as follows:	N/A
e. **MONITOR** computer points T106, T107, and T108 for leak-off temperatures.	Candidate uses plant computer to monitor leak-off temperatures
Terminating Cue: This JPM is complete when the candidate isolates the open PORV flow path. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SIM-7**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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_____

_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 1 is stable in Mode 4 at 250F and 225 psia**
2. **You are performing duties as the Reactor Operator**
3. **Alarm E-21, PORV ENERGIZED, alarm has been received**

Initiating Cue:

The CRS directs you to respond to alarm window E-21

APPLICANT: _____

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JPM #: PLANT-1

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **PLANT-1**

Task Title: **Fill the SRW and CC head tanks during a loss of AC power**

Task Number: **011.025, 015.008**

K/A Reference: **008 A4.07 (2.9, 2.9)**

Method of testing:

Simulated Performance: ☒ Actual Performance: ☐

Classroom: ☐ Simulator: ☐

Plant: ☒

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **A severe fire has resulted in Control Room evacuation. AOP-9A has been implemented.**
2. **You are performing the duties of the Unit-2 ABO.**

Initiating Cue:

You have just completed Step CG, ESTABLISH SALTWATER FLOW THROUGH THE COMPONENT COOLING HEAT EXCHANGERS which directs you to "Go to the 69' Aux Building to perform Step CH".

Task Standard:

This JPM is complete when makeup has been restored to the Service Water and Component Cooling Head Tanks.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. AOP-9A, CONTROL ROOM EVACUATION AND SAFE SHUTDOWN DUE TO A SEVERE CONTROL ROOM FIRE.

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

1. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: You have just completed Step CG, ESTABLISH SALTWATER FLOW THROUGH THE COMPONENT COOLING HEAT EXCHANGERS which directs you to "Go to the 69' Aux Building to perform Step CH".	
Locate AOP-9A, Step CH.	Same as element.
Candidate proceeds to the Unit-2 69'	Same as element
CUE: 2C43 notifies you that makeup has been restored to fill the Service Water and Component Cooling Head Tanks	
1. **WHEN** notified that makeup has been restored to fill the Service Water and Component Cooling Head Tanks, **THEN**: • Open Component Cooling Head Tank Condensate Supply, 2-CD-145.	Same as element
• Open SRW Head Tank Condensate Supply, 2-CD-144.	Same as element
CUE: The component cooling head tank level is below the sight glass	
2. Operate, as necessary, to maintain level indication for the Component Cooling and Service Water Head Tanks: a. Component Cooling Head Tank: (1) Open Component Cooling Head Tank Makeup Bypass, 2-CC-108	Same as element
(2) Shut 2-CC-3820-CV Inlet Isol, 2-CC-107	Same as element
CUE: The component cooling head tank level is normal by sight glass	
CUE: 21 SRW head tank is normal, 22 SRW head tank level is below the sight glass	
b. 21 Service Water Head Tank:	Candidate determines step is NOT applicable

ELEMENT (SHADED= CRITICAL STEP)	STANDARD
c. 22 Service Water Head Tank: (1) Open 22 Service Water Head Tank Makeup Bypass, 2-SRW-114	Same as element
(2) Shut 22 Service Water Head Tank LCV Inlet Isol, 2-SRW-112	Same as element
CUE: 22 SRW head tank level is level is normal by sight glass	
3. Periodically monitor Component Cooling and Service Water Head Tanks levels and fill as necessary.	Same as element
Terminating Cue: This JPM is complete when the Component Cooling and 22 Service Water Head Tanks are in the normal band. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **PLANT-1**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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_____

_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

3. **A severe fire has resulted in Control Room evacuation. AOP-9A has been implemented.**

4. **You are performing the duties of the Unit-2 ABO.**

Initiating Cue:

You have just completed Step CG, ESTABLISH SALTWATER FLOW THROUGH THE COMPONENT COOLING HEAT EXCHANGERS which directs you to "Go to the 69' Aux Building to perform Step CH".

APPLICANT: _____

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OPERATOR EXAM

JPM #: PLANT-2

Appendix C	Job Performance Measure Worksheet	Form ES-C-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **PLANT-2**

Task Title: Shutdown/Return and AFAS sensor cabinet to/from service

Task Number: 036.005

K/A Reference: **013 A2.06 (3.7, 4.0)**

Method of testing:

Simulated Performance: ☒ Actual Performance: ☐

Classroom: ☐ Simulator: ☐

Plant: ☒

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Maintenance is scheduled to be performed on AFAS channel ZE**
2. **Shift Manager approval has been obtained.**
3. **You are performing the duties of the Unit-2 CRO.**

Initiating Cue:

The CRS directs you to shutdown AFAS Sensor Cabinet ZE

Task Standard:

This JPM is complete when AFAS ZE sensor cabinet is shutdown.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. OI-32B, AFAS SYSTEM OPERATION

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

1. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to shutdown AFAS Sensor Cabinet ZE	
Locate OI-32B Section 6.3.	Same as element.
CUE: The CRS has reviewed Tech Specs 3.3.4 and 3.3.5	
Candidate proceeds to the Unit-2 cable spreading room	Same as element
1. **UNLOCK AND OPEN** the Sensor Cabinet front door for the Sensor Cabinet to be shutdown.	Candidate notifies control room, then unlocks Unit 2 AFAS sensor cabinet ZE
2. **CHECK** that NO trips are present on any other Sensor Cabinets for SG Low Level or for SG Differential Pressure.	Same as element
3. **CHECK** that NO trips are present on either of the Logic Cabinets. **[B0068]**	Same as element
4. **PLACE** the circuit breaker on the Sensor Cabinet to be shutdown to the OFF position. (FIGURE 1)	Same as element
5. **PLACE** the 120 volt breaker for the Sensor Cabinet to be shutdown to the OFF position: Sensor Cabinet ZE.....Panel 2Y02-1, Breaker 22	Same as element
6. **CLEAR** all AFAS alarms that will reset.	Same as element
7. **CLOSE AND LOCK** the Sensor Cabinet front door.	Same as element
Terminating Cue: This JPM is complete when AFAS ZE Sensor cabinet is deenergized with door locked. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **PLANT-2**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Maintenance is scheduled to be performed on AFAS channel ZE**
2. **Shift Manager approval has been obtained.**
3. **You are performing the duties of the Unit-2 CRO.**

Initiating Cue:

The CRS directs you to shutdown AFAS Sensor Cabinet ZE

APPLICANT: _____

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JPM #: PLANT-3

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **PLANT-3**

Task Title: Manually override Saltwater valves using hand transfer valves

Task Number: 012.019

K/A Reference: **076 A4.02 (2.6, 2.6)**

Method of testing:

Simulated Performance: ☒ Actual Performance: ☐

Classroom: ☐ Simulator: ☐

Plant: ☒

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **A severe fire has resulted in Control Room evacuation. AOP-9A has been implemented.**
2. **You are performing the duties of the Unit 1 TBO.**

Initiating Cue:

The CRS directs you to perform step AP, Override Saltwater to the Service Water Heat Exchangers

Task Standard:

This JPM is complete when Salt Water valves to the Service Water Heat Exchangers are manually overridden.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. AOP-9A, CONTROL ROOM EVACUATION AND SAFE SHUTDOWN DUE TO A SEVERE CONTROL ROOM FIRE.

Time Critical Task:

No

Validation Time:

20 minutes

Simulator Setup:

1. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to perform step AP, Override Saltwater to the Service Water Heat Exchangers	
1. **WHEN** notified to override Saltwater to the Service Water Heat Exchangers, **THEN** insert the Key into 1-HS-5149 and place the Saltwater System Emergency • Overboard, 1-CV-5149, to OVERRIDE TO CLOSE.	Same as element
2. Place the following Handvalves to OVERRIDE (from left to right): • East HV transfer stanchion a. 11B SRW HX SW OUTLET, 1-HV-5210	Same as element
b. 11A SRW HX SW OUTLET, 1-HV-5209	Same as element
c. 11A & 11B SRW HXs SW BYPASS, 1-HV-5154	Same as element
d. 11B SRW HX SW STNR FLUSH, 1-HV-5151A	Same as element
e. 11B SRW HX SW STNR DIVERTER, 1-HV-5151	Same as element
f. 11A SRW HX SW STNR FLUSH, 1-HV-5148A	Same as element
g. 11A SRW HX SW STNR DIVERTER, 1-HV-5148	Same as element
h. 12A & 12B SRW HXs SW AUX OUT, 1-HV-5155	Same as element
i. 12A & 12B SRW HXs SW AUX B/U OUT, 1-HV-5156	Same as element
j. 11A & 11B SRW HXs SW INLET, 1-HV-5150	Same as element

• West HV transfer stanchion a. 12A SRW HX SW STNR DIVERTER, 1-HV-5158	Same as element
b. 12A SRW HX SW STNR FLUSH, 1-HV-5158A	Same as element
c. 12B SRW HX SW STNR DIVERTER, 1-HV-5159	Same as element
d. 12B SRW HX SW STNR FLUSH, 1-HV-5159A	Same as element
e. 12A & 12B SRW HXs SW INLET, 1-HV-5152	Same as element
f. 12A & 12B SRW HXs SW B/U OUT, 1-HV-5153	Same as element
g. 12A & 12B SRW HXs SW BYPASS, 1-HV-5157	Same as element
h. 12A SRW HX SW OUTLET, 1-HV-5211	Same as element
i. 12B SRW HX SW OUTLET, 1-HV-5212	Same as element
3. Perform the next TBO assigned step.	
Terminating Cue: This JPM is complete when Saltwater to the Service Water Heat Exchangers is overridden. No further actions are required. The evaluator is expected to end the JPM.	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **PLANT-3**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

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Applicant Response: _____

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_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **A severe fire has resulted in Control Room evacuation. AOP-9A has been implemented.**

2. **You are performing the duties of the Unit 1 TBO.**

Initiating Cue:

The CRS directs you to perform step AP, Override Saltwater to the Service Water Heat Exchangers

APPLICANT: _____

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JPM #: SRO-ADMIN-1

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SRO-ADMIN-1**

Task Title: **Initiate, ensure performance of, and review Operational Test Documents.**

Task Number: 204.035

K/A Reference: **2.1.7 (4.4, 4.7)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☒ Simulator: ☐

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **STP O-5A-1, AUXILIARY FEEDWATER SYSTEM QUARTERLY SURVEILLANCE TEST, Section 6.1 has just been performed.**
3) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to perform Step 6.1.31 of STP O-5A-1 Section 6.1

Task Standard:

The candidate conducts a level 2 review of STP O-5A-1 section 6.1. The candidate determines 11 AFW pump to be inoperable, and TS 3.7.3.A is entered. The evaluator is expected to end the JPM.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. STP O-5A-1, Auxiliary Feedwater System Quarterly Surveillance Test.
2. Technical Specifications

Time Critical Task:

No

Validation Time:

30 minutes

Simulator Setup:

None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The Shift Manager directs you to perform Step 6.1.31 of STP O-5A-1 Section 6.1	
Steps 6.1.31.1-13 The candidate will review 11 AFW pump collected test data against the acceptance criteria	Checks YES or N/A in accordance with the answer key in steps 6.1.31.1 through 6.1.31.13
Step 6.1.31.14 Did 11 AFW Pump develop a D/P of at least 1210 PSID and no greater than 1295.2 PSID in Step 6.1.20?	Determines 11 AFW pump differential pressure is less than the required in step 6.1.31.14. Checks NO
Steps 6.1.31.15 Did 11 AFW Pump develop a TDH greater than or equal to 2800 feet in Step 6.1.21	Determines 11 AFW pump developed head is less than the required in step 6.1.31.15. Checks NO in accordance with the key in steps 6.1.31.15
Step 6.1.31.16 This test section is considered satisfactory if YES or N/A was answered in all steps above.	Determines 11 AFW pump testing is UNSAT in step 6.1.31.16 Checks UNSAT
Step 6.1.31.16.a. **IF** unsat **THEN**: • Notify the SM	Notifies the SM 11 AFW pump has failed the testing.
CUE: The SM directs the CRS to determine TS actions required	
Step 6.1.31.16.a Declare the affected equipment inoperable Take action as required by Technical Specifications and administrative actions stated in EN-4-104	Determines that TS 3.7.3.A should be entered
Terminating Cue: This JPM is complete when it is determined 11 AFW pumps is inoperable and TS 3.7.3.A is entered. **The evaluator is expected to end the JPM.**	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SRO-ADMIN-1**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **STP O-5A-1, AUXILIARY FEEDWATER SYSTEM QUARTERLY SURVEILLANCE TEST, Section 6.1 has just been performed.**
3) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to perform Step 6.1.31 of STP O-5A-1 Section 6.1

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SRO-ADMIN-2

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SRO-ADMIN-2**

Task Title: **Evaluate the need for plant cooldown.**

Task Number: 201.005

K/A Reference: 2.1.25 **(3.9, 4.2)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☒ Simulator: ☐

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1) **Unit-1 and Unit-2 were at 100% reactor power.**
2) **A loss of offsite power occurred at 0800. SMECO is unavailable.**
3) **The OC DG is unavailable, the 1A DG failed to start, 14 4kv bus is deenergized due to a ground fault.**
4) **The plant has been stabilized per EOP-7 with the following parameters:**
   a) **It is now 0900.**
   b) **Unit 1 RCS Temperature is 532F and steady. Unit 2 RCS temperature is 532F and steady.**
   c) **11 CST level is 27 feet, 12 CST level is 22 feet, 21 CST level is 26 feet**
5) **You are performing the duties of the Unit 1 CRS.**

Initiating Cue:

The Shift Manager directs you to perform EOP-7 step AB, EVALUATE THE NEED FOR PLANT COOLDOWN.

Task Standard:

The candidate will assess condensate inventory using EOP attachment (9) and determine there is insufficient water to cooldown, the plant must be maintained in hot standby, and the plant can be maintained in hot standby for 36 hours. The evaluator is expected to end the JPM.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. EOP-7, Station Blackout
2. EOP Attachments

Time Critical Task:

No

Validation Time:

30 minutes

Simulator Setup:

_____ a. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The Shift Manager directs you to perform EOP-7 step AB, EVALUATE THE NEED FOR PLANT COOLDOWN	
Locate EOP-7, Step AB.	Same as element.
1. **WHEN** the RCS parameters have been stabilized, **THEN** evaluate the need for a plant cooldown based on: • Plant Status • Auxiliary systems availability • Condensate inventory **PER** ATTACHMENT (9), MAKEUP WATER REQUIRED FOR RCS COOLDOWN	Candidate will determine Attachment (9) completion is required
Locate EOP Attachment (9)	Same as element.
1. Determine the amount of makeup water required to perform an ADV cooldown and a TBV cooldown, based on the time after shutdown: a. ADV cooldown and time after shutdown	Candidate enters uses table 'INVENTORY REQUIRED TO COOL DOWN TO 300F' and determines 625067 gallons are required.
b. TBV cooldown and time after shutdown	Candidate enters uses table 'INVENTORY REQUIRED TO COOL DOWN TO 300F' and determines 94828 gallons are required.
2. Determine the amount of makeup water available in the CSTs: a. Record the level in 11 CST. b. Record the level in 12 CST. c. Record the level in 21 CST.	The candidate determines the tank levels from the initiating cue
d. Determine the status of Unit 2 (check one): (1) ___ Mode 1, 2 or 3 and does **NOT** require AFW operation. (2) ___ Mode 1, 2 or 3 and does require AFW operation. (3) ___ Mode 4, 5, 6 or defueled.	Candidate checks d.2. The loss of offsite power has caused a dual unit trip. Main feed water is NOT available to either unit on a loss of offsite power.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
NOTE: Calculated negative values should be entered as zero.	
e. Determine the amount of makeup water available to Unit 1 using one of the following formulas, based on the status checked in step 2.d above:	
(1) **IF** step d.(1) is checked, **THEN** correct CST levels for usable volume:	Candidate determines step is NOT applicable
(2) **IF** step d.(2) is checked, **THEN** correct CST levels for usable volume:	Candidate determines step IS applicable
(a) step 2.a _____ft - 2.75 ft =	Candidate enters 27 and calculates 24.25 for step 2(a)
(b) $\frac{\text{step 2.b} \_\_\_\_\text{ft} - 2.5 \text{ ft}}{2} =$	Candidate enters 22 and calculates 9.75 for step 2(b)
(c) step(a) _____ft + step(b) _____ft =	Candidate enters 24.25 and 9.75, and calculates 34 for step 2(c)
(3) **IF** step d.(3) is checked, **THEN** correct CST levels for usable volume:	Candidate determines step is NOT applicable
f. Convert the amount of CST level into gallons. (ft available) _____ft x 9636.78 gal/ft =	Candidate enters 34 and calculates approximately 327650 for step 2.f
NOTE The nominal capacity of a Well Water pump is 300 GPM. The nominal capacity of a Demineralized Water Transfer pump is 300 GPM. The Fire System can fill the CST via fire hoses at greater than 500 GPM.	
CAUTION **The status of both units should be considered when evaluating a makeup source.**	
3. **IF** adequate inventory exists to perform cooldown, **THEN** determine if an adequate makeup source exists to maintain hot standby.	Candidate determines there is NOT adequate inventory to perform a cooldown. Water required is 625067, inventory available is 327650

CUE: The shift manager requests the candidate to determine how long hot standby can be maintained with the current inventory.	
4. IF adequate inventory does **NOT** exist to perform cooldown, **THEN** evaluate the following: • Maintaining hot standby conditions • Time to restore an adequate makeup source • Restoration of other plant systems (TBVs, main feedwater system, etc.) • Performing partial cooldown while restoring plant systems	The candidate uses **ATTACHMENT (9)** MAKEUP WATER REQUIRED TO MAINTAIN HOT STANDBY. If the chart is NOT interpolated, the value would be 36 hours of hot standby. If chart is interpolated, the value would be approximately 44 hours 34 minutes.
Terminating Cue: This JPM is complete when it is determined how long hot standby can be maintained. **The evaluator is expected to end the JPM.**	
Time Stop: _____	

ELEMENT (SHADED = CRITICAL STEP) | STANDARD

Verification of Completion

Job Performance Measure Number: **SRO-ADMIN-2**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

_____

_____

Applicant Response: _____

_____

_____

_____

_____

_____

_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1) **Unit-1 and Unit-2 were at 100% reactor power.**
2) **A loss of offsite power occurred at 0800. SMECO is unavailable.**
3) **The OC DG is unavailable, the 1A DG failed to start, 14 4kv bus is deenergized due to a ground fault.**
4) **The plant has been stabilized per EOP-7 with the following parameters:**
   a) **It is now 0900.**
   b) **Unit 1 RCS Temperature is 532F and steady. Unit 2 RCS temperature is 532F and steady.**
   c) **11 CST level is 27 feet, 12 CST level is 22 feet, 21 CST level is 26 feet**
5) **You are performing the duties of the Unit 1 CRS.**

Initiating Cue:

The Shift Manager directs you to perform EOP-7 step AB, EVALUATE THE NEED FOR PLANT COOLDOWN.

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SRO-ADMIN-3

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SRO-ADMIN-3**

Task Title: Establish initial plant conditions for and approve performance of an STP.

Task Number: 210.001

K/A Reference: **2.2.40 (3.4, 4.7)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☒ Simulator: ☐

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **STP O-8A-1 is scheduled today.**
3) **No maintenance was performed on the 1A DG**
4) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to prepare STP O-8A-1 for performance by completing SRO portions of step 4.0.

Task Standard:

The candidate correctly completes the SRO portion of the STP preliminary section using the plan of the day and Technical Specifications.

The evaluator is expected to end the JPM.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. STP O-8A-1, TEST OF 1A DG AND 11 4KV BUS LOCI SEQUENCER
2. Technical Specifications

Time Critical Task:

No

Validation Time:

30 minutes

Simulator Setup:

_____ a. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The Shift Manager directs you to prepare STP O-8A-1 for performance by completing SRO portions of section 4.0	
CUE: The candidate is given a partial copy of the Plan of the Day and STP O-8A-1	
CUE: STP M-651C-1A is not required.	
A. **PERFORM** the following determinations: 1. **IF** STP M-651C-1A is to be performed concurrently with this test **THEN NOTIFY** E&C to perform STP M-651C-1A prerequisites.	Candidate checks Scheduled Surveillance' based on the initiating cue.
CUE: The candidate is given the plan of the day	
NOTE • LOCI Sequencer testing is required monthly in Modes 1-4. • SIAS A-10 Logic, Channel Functional test is required quarterly in Modes 1-3.	
2. **INDICATE** ESFAS test requirements: ☐ SIAS/UV **OR** LOCI SEQ test required: (check required tests)	Candidate checks this checkbox based on the preceding note
☐ **PERFORM** Section 6.5, MONTHLY 11 4KV BUS LOCI SEQUENCER TEST	Candidate checks this checkbox based on the preceding note
☐ **PERFORM** Section 6.4, QUARTERLY SIAS A-10 LOGIC AND UV A-4 LOGIC TEST	Candidate checks this checkbox based on the preceding note
☐ ESFAS testing **NOT** required:	Candidate DOES NOT check this checkbox based on the preceding note
NOTE Taking 1A DG to LOCAL makes the DG inoperable. This minimizes unloaded run time during ESFAS testing **AND** is the preferred alignment.	
3. **IF** performing ESFAS testing, **THEN REVIEW** equipment availability **AND INDICATE** 1A DG alignment during test: (N/A if **NOT** testing ESFAS) ☐ **1A DG in LOCAL during ESFAS test:**	Candidate checks this checkbox based on the preceding note

ELEMENT | STANDARD
(SHADED = CRITICAL STEP)

☐ **1A DG in AUTO during ESFAS test:**	Candidate DOES NOT check this checkbox based on the preceding note
NOTE 1A DG remains operable when performing a Slow Speed start from 1C18A.	
4. **REVIEW** PMT requirements, Surveillance Schedule **AND INDICATE** 1A DG start requirements: ☐ **Slow start of 1A DG:**	Candidate checks this checkbox based on the surveillance requirements (Non-fast speed start)
☐ **Emergency start of 1A DG:**	Candidate does not check this checkbox based on the surveillance requirements.
☐ **Start of 1A DG NOT required**	Candidate does not check this checkbox based on the surveillance requirements.
5. **REVIEW** the Surveillance Schedule **OR** PMT to determine	
☐ **YES** - Performance of Sect. 6.1 is required ☐ Monthly FO TRANSFER PP Automatic Start test required.	Candidate checks these checkboxes based on the surveillance requirements.
☐ Quarterly IST FO TRANSFER PP Performance Capacity test required.	Candidate checks this checkbox based on the surveillance requirements.
☐ **NO** - Performance is **NOT** required; **LEAVE** Sect. 6.1 blank	Candidate does not check this checkbox based on the surveillance requirements.
☐ **YES** - Performance of Sect. 6.9 is required	Candidate checks this checkbox based on the surveillance requirements
☐ **NO** - Performance is **NOT** required; **LEAVE** Sect. 6.9 blank	Candidate does not check this checkbox based on the surveillance requirements.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
NOTE FSTC-OPS **OR** System Engineer may be contacted to make the following determination.	
CUE: No maintenance was performed on the diesel	
6. **IF** this is the first performance of this test after EDG-13 has been performed on 1A DG, **THEN INDICATE** minimum 1A DG loaded run time for Sect. 6.8: (N/A if **NOT** first test after EDG-13) **[B0273]**	Candidate determines the step is NOT Applicable
7. **REVIEW** the Surveillance Schedule **OR** PMT to determine if Quarterly air receiver check valve testing is required. ☐ **YES** - Quarterly air receiver check valve testing is required. ☐ **NO** - Quarterly air receiver check valve testing is **NOT** required.	Candidate checks yes based on surveillance requirements.
Terminating Cue: This JPM is complete when all SRO steps are complete in section 4.0. **The evaluator is expected to end the JPM.**	
Time Stop: _____	

Verification of Completion

Job Performance Measure Number: **SRO-ADMIN-3**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **STP O-8A-1 is scheduled today.**
3) **No maintenance was performed on the 1A DG**
4) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to prepare STP O-8A-1 for performance by completing SRO portions of step 4.0.

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SRO-ADMIN-4

Facility: **Calvert Cliffs 1&2** Job Performance Measure No.**SRO-ADMIN-4**

Task Title: Determine radiological conditions for personnel exposure

Task Number: No equivalent task at CCNPP

K/A Reference: 2.3.7 (3.5, 3.6)

Method of testing:

Simulated Performance: _____ Actual Performance: ___√___

Classroom: ___√___ Simulator: _____ Plant: _____

READ TO THE APPLICANT:

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.

Initial Conditions:

1. **Unit 2 is at 100% power.**
2. **12 SFP coolers is in service. 11 SFP cooler is isolated for maintenance on 0-SFP-196, 11 PP SUCT FR 11 SFP DRN. Maintenance is complete.**
3. **Maintenance needs you to observe for any binding while cycling the valve a number of times before its return to service.**

Initiating Cue:

You have been directed to cycle 0-SFP-196, 11 PP SUCT FR 11 SFP DRN multiple times to observe for binding, and then stand by to clear tags and open the downstream isolation valve. Task time is estimated to take 10 minutes.

State the radiological requirements for entering this area. Include in your discussion:

1. **Protective clothing required in the work area**
2. **Highest radiation level in the work area**
3. **Expected dose for this assignment**
4. **Dose rate alarm**
5. **Low dose waiting area**

What is the definition of a Locked High Radiation Area?

Task Standard:

Determine radiological conditions for personnel exposure

Evaluation Criteria:

1. **All critical steps completed.**
2. **All sequential steps completed in order.**
3. **All time-critical steps completed within allotted time.**
4. **JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.**

Required Materials:

1. **Spent Fuel Cooling Room Survey Map**
2. **RWP 106 task 2, "Operations Activities in High Radiation Areas (HRAs)"**
3. **RP-1-100, "Radiation Protection", Revision 8**

General References:

RP-1-100, "Radiation Protection", Revision 8 (Pages 14, 31)

Time Critical Task:

No

Validation Time:

10 minutes

Simulator Setup:

None

ELEMENT (* = CRITICAL STEP)		STANDARD
TIME START_____		
_____	Review survey map and RWP.	Same as element.
_____*	1. **State** protective clothing requirements.	Determines that RWP specifies **Anti-Cs and conferring with RST** (Radiation Safety Technician).
_____*	2. **Identify** highest radiation level in the area.	Determines that highest radiation level in the area is **350 mR/hr** 0-SFP-196.
_____*	3. **Calculate** expected dose for this assignment.	Determines that expected dose in 10 minutes is 1/6 * 350mR/hr = **58.3 mR**
_____*	4. **Identifies** dose rate alarm setpoint.	Determines from RWP that dose rate alarm will be set at **950 mR/hr**.
_____*	5. **Locates** low dose waiting area.	Identifies from RWP room low dose waiting area is by the room door, or identifies lowest general area is by the door (.4 mR/hr), or states would wait outside of the room in the hallway.
_____*	6. **Explains** the radiation classification of a Locked High Radiation Area.	States that Locked HRA is an area where dose could exceed 1R/hr at 30 cm.
TIME STOP _____		

Examiner Note:	The task is complete when the applicant has provided requested radiological information.

Verification of Completion

Job Performance Measure Number: ADMIN-4

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

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Applicant Response: _____

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Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1. **Unit 2 is at 100% power.**
2. **12 SFP coolers is in service. 11 SFP cooler is isolated for maintenance on 0-SFP-196, 11 PP SUCT FR 11 SFP DRN. Maintenance is complete.**
3. **Maintenance needs you to observe for any binding while cycling the valve a number of times before its return to service.**

Initiating Cue:

You have been directed to cycle 0-SFP-196, 11 PP SUCT FR 11 SFP DRN multiple times to observe for binding. Once cycling is complete, stand by to clear tags and open the downstream isolation valve. Task time is estimated to take 10 minutes.

State the radiological requirements for entering this area. Include in your discussion:

1. **Protective clothing required in the work area**
2. **Highest radiation level in the work area**
3. **Expected dose for this assignment**
4. **Dose rate alarm**
5. **Low dose waiting area**

What is the definition of a Locked High Radiation Area?

APPLICANT: _____

CALVERT CLIFFS NUCLEAR POWER PLANT

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SRO-ADMIN-5

Facility: **Calvert Cliffs 1 & 2** Job Performance Measure No.: **SRO-ADMIN-5**

Task Title: Determine appropriate emergency response actions per the ERPIP

Task Number: 204.097

K/A Reference: **2.4.38 (2.4, 4.4)**

Method of testing:

Simulated Performance: ☐ Actual Performance: ☒

Classroom: ☒ Simulator: ☐

Plant: ☐

READ TO THE APPLICANT:

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.

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **An unisolable RCS leak has developed.**
3) **13 Charging pump is tagged out for maintenance.**
4) **Chemistry reports no activity in Steam Generators**
5) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to determine the RCS leak Rate per AOP-2A

Task Standard:

The candidate determines the RCS leak rate. Once the leak rate is calculated, the candidate will correctly classify the event and complete the initial notification form within 15 minutes.

Evaluation Criteria:

1. All critical steps completed (denoted by shading).
2. All sequential steps completed in order.
3. All time-critical steps (denoted by an asterisk) completed within allotted time.
4. JPM completed within validated time. Completion time may exceed the validated time if satisfactory progress is being made.

Required Materials:

1. Procedures and manuals normally available in the plant

General References:

1. AOP-2A, Excessive RCS Leakage
2. ERPIP, Emergency Response Plan Implementation Procedure

Time Critical Task:

No

Validation Time:

30 minutes

Simulator Setup:

_____ a. None

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The Shift Manager directs you to determine the RCS leak Rate per AOP-2A	
The candidate locates AOP-2A	Same as element
CUE: The STA has collected plant information on attachment 1 of AOP-2A	
Determine Factors: k. Estimate PZR volume factor based on RCS Pressure Step g.	The candidate determines 18.9
l. Estimate RCS expansion factor based on RCS Temp., T_{AVE} Step e.	The candidate determines 86.2
Calculate Leak Rate: m.PZR Level	The candidate calculates approximately 264
n. RCS Temperature	The candidate calculates approximately 86
o. RCS change	The candidate calculates approximately 17
p. Calculate Leak Rate	The candidate calculates approximately 100 gpm
CUE: Evaluate the ERPIP based on the calculated RCS leak rate	
ERPIP Call Time Start: _____	
The candidate locates ERPIP 3.0, IMMEDIATE ACTIONS	Same as element
Refers to Immediate Actions, identifies the category from the listing and goes to the appropriate Attachment.	Determines ATTACHMENT 2 is applicable

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
ATTACHMENT 2, EMERGENCY CLASSIFICATION	
A. **CLASSIFY** the Event	
1. **WHEN** an event is in progress potentially requiring emergency response, **THEN CONDUCT** the following actions in parallel:	
CUE: The Unit 2 CRS will perform step A.1.a	
a. DETERMINE if existing conditions warrant implementation of one of emergency response attachments: • Personnel Emergency, Att 15 • Fire, Att 16,17,18 • Radiological Event, Att 19 • Severe Weather, Att 20,21 • Hazardous Material Release, Att 22 • Containment Evacuation, Att 23 • Security, Att 24 • Large Area Loss, Att 25 • Large Steam Leak, Att 26 • Extensive Damage Mitigation Guidelines, Att 27 • S/G Level Monitoring During Extensive Damage Mitigation, Att 28	
*b. **EVALUATE** the existing conditions against Attachment 1, Emergency Action Level (EAL) Criteria, to determine if an EAL threshold has been met.	Determines an ALERT classification is warranted under FISSION PRODUCT BARRIER DEGRADATION, based on a potential loss of RCS barrier. RCS Barrier- Unisolable RCS Leakage > 50 gpm.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
B. **IMPLEMENT** Emergency Response Actions 1. **IF** existing conditions warrant implementation of an emergency response attachment, in parallel, **THEN GO TO** that attachment **AND** begin response actions.	Determines step is NOT applicable
2. **IF** an EAL condition is met, **THEN OBTAIN** an Attachment 3, Initial Notification Form, **AND GO TO** the appropriate EAL Declaration attachment: • General Emergency Actions, Att 4 • Site Area Emergency Actions, Att 9 • Alert Actions, Att 11 • Unusual Event Actions, Att 13	Determines from previous evaluation that an EAL is satisfied and obtains an Initial Notification form. Identifies ALERT Actions as the appropriate declaration attachment and goes to Attachment 11.
Candidate commences actions per Attachment 3, ALERT	
A.1 **COMPLETE** Attachment 3, Initial Notification Form.	Refers to Attachment 3, Initial Notification Form.
NOTE TO EVALUATOR: **Page 2 of ATTACHMENT 3 contains instructions for completing the form and may or may not be referred to as the applicant completes page 1.**	
CUE: Candidate completes Attachment 3 Initial Notification Form, following instructions provided on the back of the form	
Attachment 3, Initial Notification Form; Page-1 Section -A	
❑ Complete Item A1.	Checks "is" a drill
❑ Complete Item A2.	Checks "Unit 1"
❑ Complete Item A3.	Checks "ALERT"
❑ Complete Item A4.	Enters "H.A.5.1.2"
❑ Complete Item A5.	Checks "Yes"

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
❑ Complete Item A5a	Checks "Yes"
❑ Complete Item A5b	Checks "Airborne"
❑ Complete Item A6.	Checks 6.a "None"
❑ Complete Item A7.	Completes A.7 only after items 1 through 6 are completed, and within 15 minutes of determining an EAL is met.
ATTACHMENT 3, Page 1, Section B	
❑ B. Complete Section B.	Selects blocks for: Drill, ALERT, and Staff Normal Emergency Response Facilities. Prints name and signs.
CUE: The request for an STA peer check is acknowledged	
Terminating Cue: Terminating Cue: This JPM is complete when an EAL classification is determined based on given plant conditions and the Initial Notification Form is completed. No further actions are required.	
Time Stop: _____	
ERPIP Call Time Start _____ - Time Stop _____ = _____ (<15 Minutes)	

Verification of Completion

Job Performance Measure Number: **SRO-ADMIN-5**

Applicant: _____

NRC Examiner: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Follow up Question: _____

_____

_____

_____

Applicant Response: _____

_____

_____

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_____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

1) **Unit-1 is at 100% reactor power.**
2) **An unisolable RCS leak has developed.**
3) **13 Charging pump is tagged out for maintenance.**
4) **Chemistry reports no activity in Steam Generators**
5) **You are performing the duties of the CRS.**

Initiating Cue:

The Shift Manager directs you to determine the RCS leak Rate per AOP-2A