

APPLICANT: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

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. Sections 6.2 through 6.4 have not been performed.
3. Position indication testing is not required.
4. 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: If requested, provide the candidate with test pages 1-19	
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 : <ul style="list-style-type: none">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: _____

Applicant Response: _____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

5. Unit-1 is at 100% reactor power.
6. STP O-5A-1, AUXILIARY FEEDWATER SYSTEM QUARTERLY SURVEILLANCE TEST, Section 6.1 has just been performed. Sections 6.2 through 6.4 have not been performed.
7. Position indication testing is not required.
8. 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
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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.
<p>1. WHEN the RCS parameters have been stabilized, THEN evaluate the need for a plant cooldown based on:</p> <ul style="list-style-type: none"> • 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.
<p>1. Determine the amount of makeup water required to perform an ADV cooldown and a TBV cooldown, based on the time after shutdown:</p> <p>a. ADV cooldown and time after shutdown</p>	Candidate enters uses table 'INVENTORY REQUIRED TO COOL DOWN TO 300F' and determines 625067 gallons are required.
<p>b. TBV cooldown and time after shutdown</p>	Candidate enters uses table 'INVENTORY REQUIRED TO COOL DOWN TO 300F' and determines 94828 gallons are required.
<p>2. Determine the amount of makeup water available in the CSTs:</p> <p>a. Record the level in 11 CST.</p> <p>b. Record the level in 12 CST.</p> <p>c. Record the level in 21 CST.</p>	<p>The candidate determines the tank levels from the initiating cue.</p> <p>11: 27 feet</p> <p>12: 22 feet</p> <p>21: 26 feet</p>
<p>d. Determine the status of Unit 2 (check one):</p> <p>(1) ___ Mode 1, 2 or 3 and does NOT require AFW operation.</p> <p>(2) ___ Mode 1, 2 or 3 and does require AFW operation.</p> <p>(3) ___ Mode 4, 5, 6 or defueled.</p>	<p>Candidate checks d.2.</p> <p>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.</p>

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) step 2.b _____ ft - 2.5 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 kv 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
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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) **STP M-651C-1A is not required.**
- 5) **You are performing the duties of the CRS.**

Initiating Cue:

- 1) **The Shift Manager directs you to prepare STP O-8A-1 for performance by completing SRO portions of step 4.0.A**
- 2) **List sections of the test that will be performed.**

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 4.0A. **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 initial conditions.

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

NOTETaking 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)

Candidate checks this checkbox based on the preceding note

- 1A DG in LOCAL during ESFAS test:**

ELEMENT

STANDARD

(SHADED = CRITICAL STEP)

<input type="checkbox"/> 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: <input type="checkbox"/> Slow start of 1A DG:	Candidate checks this checkbox based on the surveillance requirements (Non-fast speed start)
<input type="checkbox"/> Emergency start of 1A DG:	Candidate does not check this checkbox based on the surveillance requirements.
<input type="checkbox"/> 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	
<input type="checkbox"/> YES - Performance of Sect. 6.1 is required <input type="checkbox"/> Monthly FO TRANSFER PP Automatic Start test required.	Candidate checks these checkboxes based on the surveillance requirements.
<input type="checkbox"/> Quarterly IST FO TRANSFER PP Performance Capacity test required.	Candidate checks this checkbox based on the surveillance requirements.
<input type="checkbox"/> NO - Performance is NOT required; LEAVE Sect. 6.1 blank	Candidate does not check this checkbox based on the surveillance requirements.
<input type="checkbox"/> YES - Performance of Sect. 6.9 is required	Candidate checks this checkbox based on the surveillance requirements
<input type="checkbox"/> 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: _____

Applicant Response: _____

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) **STP M-651C-1A is not required.**
- 5) **You are performing the duties of the CRS.**

Initiating Cue:

- 1) **The Shift Manager directs you to prepare STP O-8A-1 for performance by completing SRO portions of step 4.0.A**
- 2) **List sections of the test that will be performed.**

APPLICANT: _____

**CALVERT CLIFFS
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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. Expected radiological protective clothing for valve operation**
- 2. Highest radiation level in the work area**
- 3. Expected dose for this assignment**
- 4. Dose rate alarm**
- 5. Low dose waiting 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

TIME START _____

_____	Review survey map and RWP.	Same as element.
_____*	1. State Expected radiological protective clothing for valve operation	Candidate states partial anti-Cs (gloves and booties) or full anti-Cs.
_____*	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 $1/6 * 50\text{mR/hr} = \mathbf{8.3\ mR}$
_____*	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.

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: _____

Applicant Response: _____

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. **Expected radiological protective clothing for valve operation**
2. **Highest radiation level in the work area**
3. **Expected dose for this assignment**
4. **Dose rate alarm**
5. **Low dose waiting area**

APPLICANT: _____

CALVERT CLIFFS
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OPERATOR EXAM

JPM #: SRO-ADMIN-5

**Note: This JPM should be performed in the simulator at the
completion of SIM-2 JPM**

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) Plant conditions have not changed**
- 2) You are performing the duties of the CRS.**

Initiating Cue:

This task is time critical. The Shift Manager directs you to evaluate the ERPIP based on plant conditions.

Task Standard:

The candidate determined the RCS leak rate in the previous JPM, Sim-2. Sim-2 RCS leak rate is approximately 75 gpm. 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:

YES

Validation Time:

30 minutes

Simulator Setup:

_____ a. None

**Note: This JPM should be performed in the simulator
at the completion of SIM-2 JPM**

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

Time Start: _____

CUE: Evaluate the ERPIP based on plant conditions (Sim-2 RCS leak rate is approximately 75 gpm)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

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

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

<p>b. EVALUATE the existing conditions against Attachment 1, Emergency Action Level (EAL) Criteria, to determine if an EAL threshold has been met.</p>	<p>Determines an ALERT classification is warranted under FISSION PRODUCT BARRIER DEGRADATION, based on a potential loss of RCS barrier. <u>RCS Barrier</u>- Unisolable RCS Leakage > 50 gpm.</p>
<p>B. IMPLEMENT Emergency Response Actions</p> <p>1. IF existing conditions warrant implementation of an emergency response attachment, in parallel, THEN GO TO that attachment AND begin response actions.</p>	<p>Determines step is NOT applicable</p>
<p>2. IF an EAL condition is met, THEN OBTAIN an Attachment 3, Initial Notification Form, AND GO TO the appropriate EAL Declaration attachment:</p> <ul style="list-style-type: none"> • General Emergency Actions, Att 4 • Site Area Emergency Actions, Att 9 • Alert Actions, Att 11 • Unusual Event Actions, Att 13 	<p>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.</p>
<p>Candidate commences actions per Attachment 3, ALERT</p>	
<p>A.1 COMPLETE Attachment 3, Initial Notification Form.</p>	<p>Refers to Attachment 3, Initial Notification Form.</p>
<p style="text-align: center;"><u>NOTE TO EVALUATOR:</u></p> <p>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.</p>	
<p>CUE: Candidate completes Attachment 3 Initial Notification Form, following instructions provided on the back of the form</p>	
<p>Attachment 3, Initial Notification Form; Page-1 Section -A</p>	
<p><input type="checkbox"/> Complete Item A1.</p>	<p>Checks "is" a drill</p>

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

<input type="checkbox"/> Complete Item A2.	Checks "Unit 1"
<input type="checkbox"/> Complete Item A3.	Checks "ALERT"
<input type="checkbox"/> Complete Item A4.	Enters "H.A.5.1.2"
<input type="checkbox"/> Complete Item A5.	Checks "Yes"
<input type="checkbox"/> Complete Item A5a	Checks "Yes"
<input type="checkbox"/> Complete Item A5b	Checks "Airborne"
<input type="checkbox"/> Complete Item A6.	Checks 6.a "None"
<input type="checkbox"/> 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	
<input type="checkbox"/> 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: _____	
Time Stop _____ - Time Start _____ = _____ (<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: _____

Result: SAT _____ UNSAT _____

Examiner's Signature and Date: _____

APPLICANT'S CUE SHEET

Initial Conditions:

- 1) **Plant conditions have not changed**
- 2) **You are performing the duties of the CRS.**

Initiating Cue:

This task is time critical. The Shift Manager directs you to evaluate the ERPIP based on plant conditions.

APPLICANT: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-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: <ul style="list-style-type: none"> 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: <ol style="list-style-type: none"> Shut the VCT M/U valve, 1-CVC-512-CV. 	The candidate places the handswitch for 1-CVC-512-CV in close.
<ol style="list-style-type: none"> 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
<ol style="list-style-type: none"> Open the BAST GRAVITY FD valves: <ul style="list-style-type: none"> 1-CVC-508-MOV 	Candidate opens 1-CVC-508-MOV
<ul style="list-style-type: none"> 1-CVC-509-MOV 	Candidate opens 1-CVC-509-MOV
<ol style="list-style-type: none"> Verify the M/U MODE SEL SW, 1-HS-210, is in MANUAL. 	The candidate verifies 1-HS-210 in manual.
<ol style="list-style-type: none"> 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: <ul style="list-style-type: none"> • 11 and 12 RC M/U PPs are secured 	Candidate verifies 11 and 12 RCMU pumps are secured.
<ul style="list-style-type: none"> • VCT M/U valve, 1-CVC-512-CV, is shut 	Candidate verifies 1-CVC-512-CV is shut.
<ul style="list-style-type: none"> • 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: _____

Applicant Response: _____

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**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-2

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 developed.**
- 3. You are the Control Room Operator**

Initiating Cue:

The CRS directs you to quantify the leak rate per AOP-2A Attachment (1)

Task Standard:

The candidate will attempt leak isolation. 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 quantify the leak rate per AOP-2A Attachment (1)	
Locates AOP-2A Attachment (1)	Same as element
Record the following information ...	Same as element.
Determine Factors:	Candidate will use 18.9 gpm for step K and 86.2 for step L.
Calculate Leak Rate:	Candidate will calculate leak rate to be approximately 75 gpm (+/- 5 gpm)
CUE: The CRS directs you to perform AOP-2A starting on step IV.A.5	
5. IF Pressurizer level is being maintained by ONE Charging Pump, THEN PROCEED to Section V., RCS LEAKAGE WITHIN THE CAPACITY OF ONE CHARGING PUMP, Page 11.	The candidate determines the leak is greater than the capacity of a charging pump and step is N/A
6. IF the Unit is in Mode 1 or 2, AND RCS leakage exceeds the capacity of ONE Charging Pump, THEN PROCEED to Section VI., RCS LEAKAGE EXCEEDS ONE CHARGING PUMP, MODES 1 & 2, Page 27.	The candidate determines the step is applicable and proceeds to Section VI on page 27
CUE: The CRS directs you to perform AOP-2A block 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: <ul style="list-style-type: none"> • 1-CVC-515-CV 	Candidate will place hand switches for 1-CVC-515-CV in close.
<ul style="list-style-type: none"> • 1-CVC-516-CV 	Candidate will place hand switches for 1-CVC-516-CV in close.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
2. Check there is NO PORV leakage by following indications: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 1-RC-105-SV • 1-RC-106-SV 	The candidate verifies the PZR vent valves closed
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: <ul style="list-style-type: none"> a. Stop all but ONE CHG PP. 	Same as element
<ul style="list-style-type: none"> 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.
<ul style="list-style-type: none"> 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.

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

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: <ul style="list-style-type: none"> • 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 CLR in HIGH.	Same as element
b. Open the CNTMT CLR EMER OUT valves for the operating CNTMT AIR CLR.	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: <ul style="list-style-type: none"> • 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	

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

CUE: If the applicant attempts to re-calculate the leak rate: '**The leak rate has not changed**'

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: _____

Applicant Response: _____

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 developed.**
- 3. You are the Control Room Operator**

Initiating Cue:

The CRS directs you to quantify the leak rate per AOP-2A Attachment (1)

APPLICANT: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-3

Facility: **Calvert Cliffs 1 & 2**
Path)

Job Performance Measure No.: **SIM-3 (Alt**

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 start 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Ensure electrical power is available to valves and pumps. 	Same as element
CUE: Another operator will verify Safety Injection lineup per attachment 2.	
<ul style="list-style-type: none"> • Verify safety injection system lineup PER ATTACHMENT (2), SIAS VERIFICATION CHECKLIST. 	
<p>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.</p>	

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: _____

Applicant Response: _____

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: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-4

Form ES-C-1
WorksheetFacility: **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: <ul style="list-style-type: none"> • 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
CUE: If the candidate reports that breaker 552-22 did not open then provide cue 'Acknowledge and continue'	
d. IF the Turbine was paralleled to the grid, THEN verify the Turbine Generator Output breakers open: <ul style="list-style-type: none"> • 11 GEN BUS BKR, 0-CS-552-22 	The candidate determines breaker 552-22 did not open and takes its handswitch to open.
<ul style="list-style-type: none"> • 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
WorksheetELEMENT
(SHADED = CRITICAL STEP)

STANDARD

<p>f. Verify 11 EXCITER FIELD BKR, 1-CS-41E, is open.</p>	<p>The candidate will open the exciter field breaker.</p> <p>The exciter field breaker will not automatically open.</p> <p>Not critical since the turbine and generator have severely over sped.</p>
<p>3. Ensure BOTH MSR 2ND STG STM SOURCE MOVS are shut:</p> <ul style="list-style-type: none"> • 1-MS-4025-MOV (11 MSR) • 1-MS-4026-MOV (12 MSR) 	<p>Determines the valves have not shut due to loss of power and alternate action step 3.1 is required.</p>
<p>3.1 IF EITHER MSR 2ND STG STM SOURCE MOV failed to shut, THEN perform the following actions:</p> <p>a. Verify the MSR 2ND STG HIGH LOAD MOV is shut:</p> <ul style="list-style-type: none"> • (11 MSR) 1-MS-4018-MOV • (12 MSR) 1-MS-4017-MOV 	<p>Same as element.</p> <p>(Not critical since Main Steam Isolation Valves were closed in step b.1 and turbine overspeed has already occurred due to stop and control valve failure)</p>
<p>b. Dispatch an operator to verify the MSR 2ND STAGE BYPASS CONTROL VALVE panel loader in MANUAL with panel loader output at zero.</p>	<p>Same as element</p>
<p>The Candidate will report 'Turbine Trip is complete' or similar</p>	
<p>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.</p>	
<p>Time Stop: _____</p>	

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: _____

Applicant Response: _____

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: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-5

Facility: **Calvert Cliffs 1 & 2
Path)**

Job Performance Measure No.: **SIM-5 (Alt**

Task Title: **Identify, Isolate, and Confirm the Affected Steam Generator**

Task Number: 201.165

K/A Reference: **035 A2.01 (4.5, 4.6)**

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 plant transient and manual Reactor trip have occurred**
- 3. EOP-4 has been implemented**
- 4. The CRO has just completed isolating 11 S/G per EOP-4.**
- 5. You are performing the duties of the an extra operator**

Initiating Cue:

Initiating Cue: The CRS directs you to independently verify the most affected S/G was isolated per step G.3 on page 15

Task Standard:

This JPM is complete when the operator determines the wrong S/G was isolated, restores feeding and steaming to 11 S/G, and isolates 12 S/G. 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. EOP-4, EXCESS STEAM DEMAND EVENT

Time Critical Task:

No

Validation Time:

25 minutes

Simulator Setup:

- _____ 1. Reset to IC-24 (both units at 100%)
- _____ 2. Place an off-normal pink ring next to the '11 Steam Generator' sign (under 11 S/G level safety channels)
- _____ 3. Enter malfunctions:
 - _____ a. MS010_02 10% leak, 12 Steam generator rupture in containment
 - _____ b. AFW006-01, Failure of AFAS block
 - _____ c. AFW006-02, Failure of AFAS block
 - _____ d. AFW006-03, Failure of AFAS block
 - _____ e. AFW006-04, Failure of AFAS block
- _____ 4. Place simulator in run
- _____ 5. When containment pressure high pre-trip alarm actuates, manually trip the unit.
- _____ 6. Stop all RCPs
- _____ 7. Isolate Letdown
- _____ 8. Isolate 11 S/G per EOP-4 step G on page 12

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
Time Start: _____	
CUE: The CRS directs you to peer check the CRO by verifying the most affected S/G was isolated per Block Step G.3 on page 15	
Identify and locate EOP-4 block step G.3	Same as element.
CUE: If the candidate asks which S/G was the most affected tell them that 'the most affected S/G should be independently assessed'.	
<p>3. Verify the most affected S/G was isolated by checking the following:</p> <ul style="list-style-type: none"> • S/G pressure lower for the affected S/G • S/G level lowering for the affected S/G and stabilized for the unaffected S/G • RCS loop T_{COLD} lower in the affected loop 	<p>The candidate determines 12 S/G is the most affected and the wrong S/G has been isolated based on:</p> <ul style="list-style-type: none"> • Pressure is lower in 12 S/G • Level is lower and lowering in 12 S/G. 11 S/G level is relatively steady • T_{cold} is lower in 12 loop
CUE: The candidate may report that the wrong S/G was isolated. The evaluator should acknowledge the report and give cue to 'continue with the procedure'	
3.1 IF the wrong S/G was isolated, THEN perform the following actions:	Candidate determines the steps should be performed
<p><u>CAUTION</u></p> <p>Severe waterhammer may result if Main Feedwater flow is restored after it has been stopped for greater than 80 minutes.</p>	
CUE: If asked how long main feed water flow has been lost tell the candidate 'The plant was tripped 20 minutes ago'	

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
<p>a. Restore feeding and steaming capability to the least affected S/G.</p>	<p>The candidate will at a minimum:</p> <p>Restore Steaming:</p> <ol style="list-style-type: none"> 1. Direct the TBO to transfer control of 11 ADV to the control room (Align 11 S/G Hand Transfer Valves to POSITION 1) or direct manual operation. <p>Restore feeding:</p> <ol style="list-style-type: none"> 1. Place 1-MS-4070-CV HS in Open or Auto 2. Opens at least 2 S/G block valves in series for 11 S/G: <ul style="list-style-type: none"> • 1-AFW-4520-CV (11 AFW PP) • 1-AFW-4521-CV (11 AFW PP) • 1-AFW-4522-CV (13 AFW PP) • 1-AFW-4523-CV (13 AFW PP)
<p>b. WHEN RCS heat removal has been re-established to the least affected S/G, THEN isolate the most affected S/G PER step G.2.</p>	<p>The candidate proceeds to step G.2 to isolate 12 S/G</p>
<p>G.2. Isolate the affected S/G.</p> <p>a. IF 11 S/G is the affected S/G, THEN isolate 11 S/G by performing the following actions:</p>	<p>Candidate determines step 2.a is N/A</p>

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
b. IF 12 S/G is the affected S/G, THEN isolate 12 S/G by performing the following actions:	Candidate determines step 2.b is applicable.
<p>(1) Shut 12 ADV using the Hand Transfer Valves on the West wall of the Unit 1 45 ft Switchgear Room as follows:</p> <p>(a) IF 12 ADV was locally operated, THEN remove the manual override.</p> <p>(b) Verify 12 ADV controller, 1-HC-4056B, at 1C43 is set at 0% output.</p> <p>(c) Align 12 S/G Hand Transfer Valves to 1C43 (POSITION 2):</p> <ul style="list-style-type: none"> • 1-HV-3939A • 1-HV-3939B 	Candidate directs the TBO to 'Align 12 ADV to 1C43 with a zero percent output' or similar. The candidate may alternatively direct EOP-4 step numbers.
(2) Verify 12 SG FW ISOL valve 1-FW-4517-MOV, is shut.	Candidate places 4517-mov HS in close. (Valve may be shut at this point due to ESFAS actuations)
(3) Verify 12 MSIV BYP valve, 1-MS-4052-MOV, is shut.	Same as element
(4) Shut 12 S/G B/D valves: <ul style="list-style-type: none"> • 1-BD-4012-CV • 1-BD-4013-CV 	Candidate places 4013 HS to close (Valve may be shut at this point due to ESFAS actuations)
(5) Shut 12 SG AFW STM SUPP & BYPASS valves, 1-MS-4071-CV and 1-MS-4071A-CV.	Candidate places 4071 hand switch to close. May be previously performed per step K when re-establishing feed.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
<p>(6) Shut 12 S/G AFW BLOCK valves by placing the handswitches in SHUT:</p> <ul style="list-style-type: none"> • 1-AFW-4530-CV • 1-AFW-4531-CV • 1-AFW-4532-CV • 1-AFW-4533-CV 	Same as element
<p>(7) Shut the MS UPSTREAM DRN ISOL VLVS by placing handswitch 1-HS-6622 in CLOSE.</p>	<p>Same as element. Not critical because the valve is already in this position from simulator setup.</p>
<p>(8) Observe locally, the S/G Safety Valves are NOT leaking.</p>	Candidate directs an operator to check for leaking S/G safety valves
TIME STOP _____	
<p>TERMINATING CUE: This JPM is complete when the operator determines the wrong S/G was isolated, restores feeding and steaming to 11 S/G, and isolates 12 S/G. The evaluator is expected to end this JPM.</p>	

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: _____

Applicant Response: _____

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 plant transient and manual Reactor trip have occurred**
3. **EOP-4 has been implemented**
4. **The CRO has just completed isolating 11 S/G per EOP-4.**
5. **You are performing the duties of the an extra operator**

Initiating Cue:

Initiating Cue: The CRS directs you to independently verify the most affected S/G was isolated per step G.3 on page 15

APPLICANT: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-6

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 is in Mode 1 at 100% power.**
- 2. You are the Control Room Operator**

Initiating Cue:

The CRS directs you to respond to conditions that arise.

Task Standard:

The candidate will recommend AOP-7J. 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 when directed by the examiner.

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

Time Start: _____	
CUE: The CRS directs you to respond to conditions that arise.	
Upon initiation, multiple alarms will be received	The candidate will announce 'Multiple Alarms' and check if RPS is calling for a trip. Candidate will determine RPS is not calling for a trip and report this to the examiner.
CUE: Acknowledge. What actions do you recommend?	
<p>The candidate, based on multiple alarms and status of RPS, should recommend AOP-7J.</p> <p>The candidate may decide to use alarm manual guidance to take stabilizing actions for pressurizer level and pressure alarms. If the candidate takes stabilizing actions, the candidate should be asked (when actions are complete) 'Which AOP do you recommend?'</p>	
CUE: The CRS directs you to Perform AOP-7J block step IV.A, Preliminary	
Locates the AOP-7J	Same as element.
CUE: The CRS will perform step 1	
<p>1. Perform the following immediate actions:</p> <ul style="list-style-type: none"> 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.

ELEMENT (SHADED = CRITICAL STEP)	STANDARD
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.
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: <ul style="list-style-type: none"> • 1-CVC-515-CV 	Candidate shuts 1-CV-515 (not critical, will shut on its own)
<ul style="list-style-type: none"> • 1-CVC-516-CV 	Candidate shuts 1-CV-516 (not critical, will shut on its own)
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). Candidate may refer to OI-2A for procedure.
8. Operate Pressurizer HTRs and PRZR SPRAY VLVs as necessary to maintain RCS pressure between 2225 and 2275 PSIA.	Same as element. Candidate will place heaters in Off is pressure is above 2275 (likely).
Note: The candidate may perform the following step from memory or by using OI-16 section 6.4.	

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

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: _____

Applicant Response: _____

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. You are the Control Room Operator**

Initiating Cue:

The CRS directs you to respond to conditions that arise.

APPLICANT: _____

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NUCLEAR POWER PLANT**

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INITIAL LICENSED

OPERATOR EXAM

JPM #: SIM-7

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 400 psia**
- 2. You are performing duties as the Reactor Operator**

Initiating Cue:

The CRS directs you to respond to conditions that arise

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. Place simulator in run
- ____ 3. Add trigger 1: CW002-01
 - ____ a. T1: Override 1-PI-103-1 to 1533#
 - ____ b. T1: Override PORV 402 to "manopen"
 - ____ c. F1: CW002-01 with 0 initial, 0 final, 0 ramp
 - ____ d. Override PORV HS not in auto alarm OFF
- ____ 4. Initiate F1 when directed by the examiner

ELEMENT
(SHADED = CRITICAL STEP)

STANDARD

Time Start: _____	
CUE: The CRS directs you to respond to conditions that arise	
Failure is initiated	Candidate performs panel scan and reports 'PORV ENERGIZED ALARM'
CUE: Acknowledge alarm	
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. If RCS pressure lowers to 300# candidate determines RCP are in the non-operating area of the curve. Candidate secures 11A and 12B RCPs

Worksheet

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: _____

Applicant Response: _____

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 400 psia**
- 2. You are performing duties as the Reactor Operator**

Initiating Cue:

The CRS directs you to respond to conditions that arise

APPLICANT: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: PLANT-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 HEAD 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:**

Same as element

- Open Component Cooling Head Tank Condensate Supply, 2-CD-145.

- 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:

Same as element

- a. Component Cooling Head Tank:
(1) Open Component Cooling Head Tank Makeup Bypass, 2-CC-108

- (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: _____

Applicant Response: _____

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: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

JPM #: PLANT-2

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: _____

Applicant Response: _____

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: _____

**CALVERT CLIFFS
NUCLEAR POWER PLANT**

2011 NRC

INITIAL LICENSED

OPERATOR EXAM

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:**0**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

Same as element

- Overboard, 1-CV-5149, to **OVERRIDE TO CLOSE**.

2. Place the following Hand valves to **OVERRIDE** (from left to right):

Same as element

- East HV transfer stanchion
 - a. 11B SRW HX SW OUTLET, 1-HV-5210

CUE: 1-HV-5209 manual operator is frozen and cannot be operated

b. 11A SRW HX SW OUTLET, 1-HV-5209

From CUE the step cannot be performed. The candidate will call 1C43 for direction

CUE: 1C43 requests that you perform actions to place 1-CV-5209 in its AOP-9A position and methods that may be used to perform the action.

Place 1-CV-5209 in its AOP-9A position

Candidate will describe methods that could be employed to place 1-CV-5209 in its failed position. Isolating the operating air and bleeding off air pressure would placing the valve in its fail position.

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: _____

Applicant Response: _____

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