

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7I-NEW

SYSTEM: Diesel Generator

TASK: 020480101 1A/0C DG Fast Start from the Control Room

PURPOSE: Evaluate the Operator's ability to emergency start the 0C DG to repower 21 4KV

JOB PERFORMANCE MEASURE

CALVERT CLIFFS NUCLEAR POWER PLANT

LICENSED OPERATOR

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7I-NEW

TASK: 020480101 1A/0C DG Fast Start from the Control Room

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

PREREQUISITES:

EVALUATION LOCATION:

SIMULATOR

EVALUATION METHOD:

ACTUAL PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

15 MINUTES

TIME CRITICAL TASK:

NO

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

AOP-7I

TASK STANDARDS:

This JPM is complete when the 0C DG has been emergency started and 21 4KV bus is energized.

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TASK: 020480101 1A/0C DG Fast Start from the Control Room

DIRECTIONS TO EVALUATOR:

1. Simulator Setup
 - a. IC-13 Unit 1 100% power (Unit 2 is assumed to be in Mode 5).
 - b. Place the Normal and Alternate Feeders for 21 4KV Bus in PTL
 - c. Tagout 2A DG out put breaker, 21 4KV Bus alternate feed
 - d. Insert a "Start Failure Malfunction" on 2A DG

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE AOP-7I-NEW**

TASK: 020480101 1A/0C DG Fast Start from the Control Room

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

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TASK: 020480101 1A/0C DG Fast Start from the Control Room

6.0 Locally starting a pump (cont'd)

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.

Check for proper Pump operation (as applicable):

- Smooth, quiet operation consistent with pump history
- Oil level remains good
- Proper seal leakoff
- Proper discharge pressure
- Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7I-NEW

ELEMENT

STANDARD

(* = CRITICAL STEP)

TIME START _____

_____ Locate AOP-7I, Section V.B. step 1.

Same as element.

CUE: No fault exists.

CAUTION: A bus can NOT be re-energized if a fault exists on the bus.

_____ 1. **WHEN** normal or alternate power can be restored to the 11 4KV Bus,
THEN energize 11 4KV Bus **PER** OI-27C, 4.16 KV System.

Determines step is N/A, refers to Alternate Actions.

CUE: 07 4KV Bus is energized.

CAUTION: 0C DG prelube will be lost if 07 4KV Bus has been deenergized for greater than 30 minutes, requiring a local emergency start per OI-21C, 0C DIESEL GENERATOR.

- | | | |
|---------|--|---|
| 1.1 | IF the normal or alternate feed is NOT available
AND 2A DG is out of service,
THEN place 0C DG on 21 4KV Bus as follows: | Determines step is applicable |
| * _____ | a. IF the 07 4KV Bus has been deenergized for less than 30 minutes,

THEN start the 0C DG using the EMERGENCY START PB, 0-HS-0707 | Determines step is applicable

0-HS-0707, 1C19C checks 0C DG speed and voltage rising |
| _____ | b. IF the 07 4KV Bus has been deenergized for greater than 30 minutes, | Determines step is not applicable. |
| _____ | c. Verify 07 4KV bus FDR, 152-0704 in PULL TO LOCK. | Same as element |
| _____ | d. Verify 0C DG 21 4KV Bus FDR, 152-2106 in PULL TO LOCK. | Same as element |
| _____ | e. Verify 2A DG OUT BKR, 152-2103 in PULL TO LOCK. | Same as element |

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JOB PERFORMANCE MEASURE AOP-7I-NEW

ELEMENT (* = CRITICAL STEP)		STANDARD	
* ___	f.	Dispatch an operator to CLOSE disconnect 189-2106 as follows:	Calls TBO to perform this step
___	g.	WHEN the 0C DG is up to rated speed and voltage, THEN verify the 0C DG OUT BKR, 152-0703 is closed.	Checks 0C DG speed at 60 Hz and voltage at 4160 volts, on 1C19C {5.0}

CUE: TBO reports Disconnect 189-2106 is closed.

___	h.	WHEN disconnect 189-2106 and breaker 152-0703 are closed, THEN perform the following:	Observes the disconnect closed
* ___	(1)	Close 07 4KV BUS TIE, 152-0701	{3.0}
* ___	(2)	Insert the sync stick and close the 0C DG 21 4KV BUS FDR, 152-2106	{3.0}

TIME STOP ___

TERMINATING CUE: This JPM is complete when the 0C DG has repowered 21 4KV bus. No further actions are required.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020480101

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools
2. Initial Conditions:
 - a. The 2A DG has been tagged out for repairs.
 - b. The 21 4kv bus tripped. Neither the Normal or Alternate Feeder are available to restore the bus.
 - c. You are performing the duties of an extra Licensed Operator.
3. Initiating Cue: The CRS directs you to emergency start 0C DG and restore power to 21 4KV Bus per AOP-7I Step V.B.1. Are there any questions? You may begin.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2F

TASK: 020070315 Align Containment Spray Pump for SDC

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2F

TASK: 020070315 Align Containment Spray Pump for SDC

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

PREREQUISITES:

Completion of the knowledge requirement of the Initial License class training program for the Safety Injection System.

EVALUATION LOCATION:

_____ PLANT _____ SIMULATOR _____ CONTROL ROOM

EVALUATION METHOD:

_____ ACTUAL PERFORMANCE _____ DEMONSTRATE PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

15 MINUTES

ACTUAL TIME
TO COMPLETE JPM:

_____ MINUTES

TIME CRITICAL
TASK:

YES

TASK LEVEL:

LEVEL 1

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

AOP-3B

TASK STANDARDS:

This JPM is completed when SDC flow has been restored using a Contmt Spray Pump, per AOP-3B.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2F

TASK: 020070315 Align Containment Spray Pump for SDC

DIRECTIONS TO EVALUATOR:

1. Simulator Setup *ie.*
 - a. IC to be determined. Mode 5, 134 DEG with bubble.
 - b. Malfunction SI003_02 (12 LPSI Pp Bkr Failure).
 - c. Malfunction 11 LPSI Pp Bkr Failure.
 - d. Remote Functions to align 11 CS as a LPSI pp
Open 1-SI- 444 11 LPSI pp (Use P&ID or RFI)

Open 1-SI-314 11 CS PP (Use P&ID or RFI SI028)

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE AOP-3B-2F**

TASK: 020070315 Align Containment Spray Pump for SDC

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE AOP-3B-2F**

TASK: 020070315 Align Containment Spray Pump for SDC

6.0 Locally starting a pump (cont'd)

- Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check for proper Pump operation (as applicable):
- Smooth, quiet operation consistent with pump history
 - Oil level remains good
 - Proper seal leakoff
 - Proper discharge pressure
 - Expected system flow

7.0 Locally stopping a pump

- Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

- Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

- Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

- Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

- Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

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JOB PERFORMANCE MEASURE AOP-3B-2F

ELEMENT (* = CRITICAL STEP)	STANDARD
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TIME START _____

_____ Locates AOP-3B, Step IV.A.5.	Same as element.
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CUE: When monitored, SI-651 and SI-652 indicate open. When monitored, alarm windows H24 and/or H28 are clear. When monitored, M4 is in ALARM.

_____ IV.A.5. IF SDC is lost due to failure of the operating LPSI PP, AND the cause will NOT result in a common mode failure, THEN complete the following actions:	Determines step is applicable. Monitors SI-651 and 652 position indication, on 1C09. Monitors alarm window H24 and H28, on 1C09. Monitors M4, on 1C18. Determines that a 12 LPSI failure will not result in a common mode failure.
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_____ a. Place the failed PP handswitch in PULL TO LOCK.	Places HS-302Y, on 1C08, in PTL.
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CUE: When checked, CVC-520 indicates in the BYPASS position.
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_____ b. IF RCS purification is in service, THEN place IX BYP valve handswitch 1-HS-2520 in the BYP position.	HS-2520, on 1C07 [3]
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CUE: When checked, SI-657 indicates shut.

* _____ c. Shut S/D COOLING TEMP CONTR valve, 1-SI-657-CV.	Lowers output of HIC-3657, on 1C09, to zero or places HS-3657, on 1C09 to CLOSE. Checks position indication for SI-657.
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* _____ d. Place the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, in MANUAL.	Shifts FIC-306, on 1C08, to MANUAL.
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CUE: When adjusted, FIC-306 output indicates 95%.

* _____ e. Adjust the output of the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, to 95%.	Adjusts output of FIC-306 to 95%.
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JOB PERFORMANCE MEASURE AOP-3B-2F

ELEMENT (* = CRITICAL STEP)	STANDARD
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CUE: When checked, HS-302XA and 302YA are in the OVERRIDE position.

_____	f. Verify BOTH RAS OVERRIDE switches in OVERRIDE:	Checks position on HS-302XA and 302YA, on 1C08 and 1C09. If not in OVERRIDE position, places HS in OVERRIDE.
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11 LPSI PP RAS
OVERRIDE, 1HS-302XA

12 LPSI PP RAS
OVERRIDE, 1-HS-
302YA.

CAUTION: Before starting the standby LPSI PP, the cause for the running LPSI PP failure should be determined to preclude a common mode failure.

CUE: 11 LPSI pump trips. ABO reports 11 LPSI pump made a very loud squealing noise and then stopped running.
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_____	g. Start the standby LPSI PP.	[1.0]
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CUE: CRS reports Step B to be performed by another operator and directs you to go to Step C.5.
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_____	g.1. IF the standby LPSI PP does NOT start, THEN PROCEED to Step B.	Determines the breaker trips upon start, refers to Step C.5.
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_____	C.5. IF NO LPSI PPs are available, THEN align the CS PPs for cooling.	Determines step is applicable.
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CAUTION: To prevent CS PP shaft seal and bearing damage, RCS temperature shall be less than 120°F OR the associated ECCS Pump Room Air Cooler shall be functional.

**CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-3B-2F**

ELEMENT (* = CRITICAL STEP)	STANDARD
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CUE: When checked, CET temperatures indicate ~140°F. ECCS PP Room Air Coolers are not OOS.

<hr/>	a. Verify RCS temperature less than 120°F OR the associated ECCS PP Room Air Cooler is functional.	Checks CET temperatures, on 1C05, or checks that ECCS PP Room Air Coolers are not OOS.
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CAUTION: To prevent over pressurization of the ECCS PP suction headers, RCS pressure shall be less than 170 PSIA.

CUE: When checked, RCS pressure is 130 PSIA.

<hr/>	b. Check that RCS pressure is less than 170 PSIA.	Checks RCS pressure on PI-103 and/or PI-103-1, on 1C06.
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CUE: When checked, SI-651 and 652 indicate open.

<hr/>	c. Check that the SDC HDR RETURN ISOL valves are open: 1-SI-651-MOV 1-SI-652-MOV	On 1C09 [4]
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CUE: When checked, SI-4142 and 4143 indicate shut.

<hr/>	d. Shut the II RWT OUT valves: 1-SI-4142-MOV 1-SI-4143-MOV	HS-4142 and 4143, on 1C08 and 1C09 [3]
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<hr/>	e. Isolate CS PP Min Flow to the RWT:	
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CUE: When checked, lockout lights, on HS-3659 and 3660, are out.

<hr/>	(I) Place the SI PP RECIRC LOCKOUT handswitches to ON: 1-HS-3659A 1-HS-3660A	Places HS-3659A and 3660A, on 1C09, in ON position. Checks lockout light on HS-3659 and 3660, on 1C09, are out.
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CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2F

ELEMENT

STANDARD

(* = CRITICAL STEP)

CUE: When checked, SI-659 and 660 indicate shut.

*	(2)	Shut the MINI FLOW RETURN TO RWT ISOL valves: 1-SI-659-MOV 1-SI-660-MOV	HS-3659 and 3660, on 1C09, in CLOSE [3]
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CUE: CRS directs use of 11 CS PP.

*	f.	IF 11 CS PP is desired for SDC, THEN open the following valves:	Determines step is applicable.
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CUE: When dispatched, PO reports SI-314 and 444 are open.

*		11 CS PP Discharge valve, 1-SI-314	
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*		11 LPSI PP NORM SUCT ISOL valve, 1-SI-444	Dispatches PO to open SI-314 and SI-444.
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_____	g.	IF 12 CS PP is desired for SDC,	Determines step is N/A.
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CUE: When checked, SI-657 indicates shut.

_____	h.	Shut the S/D COOLING TEMP CONTR valve, 1-SI-657-CV.	Verifies output of HIC-3657 is zero or HS-3657 is in CLOSE. Checks position indication for SI-657.
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CUE: When checked, FIC-306 is in MANUAL.

_____	i.	Place the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, in MANUAL.	Verifies FIC-306, on 1C08, to MANUAL.
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CUE: When checked, FIC-306 output indicates 95%.

_____	j.	Adjust the output of the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, to 95%.	Verifies output of FIC-306 is 95%.
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CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2F

ELEMENT

STANDARD

(* = CRITICAL STEP)

CUE: When started, 11 CS Pp has normal running indication.

* k. Start the selected CS PP. HS-4146, on 1C08 [1]

CUE: When adjusted, flow stabilizes at 1500 GPM.

* l. Slowly adjust the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, to raise SDC flow to 1500 GPM. Slowly lowers output of FIC-306, on 1C08. Checks flow indication for FIC-306. Lowers output until flow indicates 1500 GPM.

CUE: When previewed, Auto output matches MANUAL output.

m. Place the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, in AUTO, if desired. Depresses MODE SELECTOR, on FIC-306, to preview Auto output signal. Adjusts auto setpoint to match Auto output to MANUAL output. When outputs are matched, shifts FIC-306 to AUTO.

CUE: When checked, SI-657 indicates intermediate and SDC temperature is 185°F and slowly lowering.

* n. Adjust the S/D COOLING TEMP CONTR valve, 1-SI-657-CV, as desired. If HS-3657 is in CLOSE, places HS-3657, on 1C09, to AUTO. Raises output of HIC-3657. Checks position indication for SI-657 indicates intermediate. Checks SDC temperature slowly lowering (TR-351, on 1C09).

6. IF RCS temperature can NOT be maintained using one CS PP, AND RCS level is above the 37.6 foot elevation, Determines one CS Pp is able to maintain RCS temperature.

TERMINATING CUE: This JPM is complete when SDC has been restored. No further actions are required.

TIME STOP _____

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-3B-2F

TASK: 020070315 Align Containment Spray Pump for SDC

Document below any instances of failure to comply with industrial safety practices, radiation safety practices and use of event free tools

COMMENTS:

The operator's performance was evaluated against the standards contained in this JPM and determined to be

SATISFACTORY UNSATISFACTORY

EVALUATOR'S SIGNATURE: _____

DATE: _____

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020070315

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools

2. Initial Conditions:
 - a. Unit 1 has been shutdown for 5 days and is presently in Mode 5.
 - b. SDC is in service, using 12 LPSI Pp, and RCS temperature is ~134°F.
 - c. RCS pressure is ~136#, with a bubble in the Pressurizer.
 - d. ABO reported smoke coming from 12 LPSI Pp motor.
 - e. 12 LPSI Pp has just tripped.
 - f. You are performing the duties of the Unit 1 CRO.

3. Initiating Cue: The CRS directs you to respond to the loss of SDC by implementing AOP-3B, at Step IV.A.5.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2

TASK: 020070303 Respond to a loss of SDC w/ RCS pressurization possible

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2

TASK: 020070303 Respond to a loss of SDC w/ RCS pressurization possible

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

PREREQUISITES:

Completion of the knowledge requirement of the Initial License class training program for the Safety Injection System.

EVALUATION LOCATION:

_____ PLANT _____ SIMULATOR _____ CONTROL ROOM

EVALUATION METHOD:

_____ ACTUAL PERFORMANCE _____ DEMONSTRATE PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

15 MINUTES

ACTUAL TIME
TO COMPLETE JPM:

_____ MINUTES

TIME CRITICAL
TASK:

YES

TASK LEVEL:

LEVEL 1

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

AOP-3B

TASK STANDARDS:

This JPM is completed when SDC flow has been restored per AOP-3B.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2

TASK: 020070303 Respond to a loss of SDC w/ RCS pressurization possible

DIRECTIONS TO EVALUATOR:

1. Simulator Setup
 - a. IC to be determined. Mode 5, 134 DEG with bubble.
 - b. Malfunction SI003_02 (12 LPSI Pp Bkr Failure).

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE AOP-3B-2**

TASK: 020070303 Respond to a loss of SDC w/ RCS pressurization possible

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2

TASK: 020070303 Respond to a loss of SDC w/ RCS pressurization possible

6.0 Locally starting a pump (cont'd)

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check for proper Pump operation (as applicable):

- Smooth, quiet operation consistent with pump history
- Oil level remains good
- Proper seal leakoff
- Proper discharge pressure
- Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-3B-2

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

TIME START _____

_____ Locates AOP-3B, Step IV.A.5.	Same as element.
------------------------------------	------------------

CUE: When monitored, SI-651 and SI-652 indicate open. When monitored, alarm windows H24 and/or H28 are clear. When monitored, M4 is in ALARM.

_____ IV.A.5. IF SDC is lost due to failure of the operating LPSI PP, AND the cause will NOT result in a common mode failure, THEN complete the following actions:	Determines step is applicable. Monitors SI-651 and 652 position indication, on 1C09. Monitors alarm window H24 and H28, on 1C09. Monitors M4, on 1C18. Determines that a 12 LPSI failure will not result in a common mode failure.
--	--

_____ a. Place the failed PP handswitch in PULL TO LOCK.	Places HS-302Y, on 1C08, in PTL.
--	----------------------------------

CUE: When checked, CVC-520 indicates in the BYPASS position.
--

_____ b. IF RCS purification is in service, THEN place IX BYP valve handswitch 1-HS-2520 in the BYP position.	HS-2520, on 1C07 [3]
---	----------------------

CUE: When checked, SI-657 indicates shut.

* _____ c. Shut S/D COOLING TEMP CONTR valve, 1-SI-657-CV.	Lowers output of HIC-3657, on 1C09, to zero or places HS-3657, on 1C09 to CLOSE. Checks position indication for SI-657.
--	---

* _____ d. Place the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, in MANUAL.	Shifts FIC-306, on 1C08, to MANUAL.
---	-------------------------------------

CUE: When adjusted, FIC-306 output indicates 95%.

* _____ e. Adjust the output of the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, to 95%.	Adjusts output of FIC-306 to 95%.
---	-----------------------------------

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-3B-2

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

CUE: When checked, HS-302XA and 302YA are in the OVERRIDE position.

_____	f. Verify BOTH RAS OVERRIDE switches in OVERRIDE: 11 LPSI PP RAS OVERRIDE, 1HS-302XA 12 LPSI PP RAS OVERRIDE, 1-HS-302YA.	Checks position on HS-302XA and 302YA, on 1C08 and 1C09. If not in OVERRIDE position, places HS in OVERRIDE .
-------	--	---

CAUTION: Before starting the standby LPSI PP, the cause for the running LPSI PP failure should be determined to preclude a common mode failure.

CUE: 11 LPSI pump starts.

* _____	g. Start the standby LPSI PP.	[1.0]
* _____	h. IF RCS level is above the 37.6 foot elevation, THEN complete the following actions: (1) Slowly adjust the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, to obtain the flowrate that SDC was at prior to the loss of flow. [B0072] (2) Place the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, in AUTO if desired.	Determines step is applicable.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-3B-2

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

CAUTION: Do NOT exceed the following cooldown limits in any one hour: [B0053]

- | | |
|----------------------|----------|
| • Greater than 270°F | 100°F/hr |
| • 184°F to 270°F | 20°F/hr |
| • less than 184°F | 10°F/hr |

CAUTION: Do NOT exceed a heatup rate of 14°F/MIN for the Shutdown Cooling Heat Exchanger as indicated on TI-303X and TI-303Y.

- | | | |
|------------|--|--|
| * _____ i. | Adjust the SDC COOLING TEMP CONTR, 1-HIC-3657, as necessary to maintain the desired temperature. | If HS-3657 is in CLOSE, places HS-3657, on 1C09, to AUTO. Raise output of HIC-3657. Checks SI-657 position indication. Checks SDC temperature slowly lowering, TR-351 on 1C09. |
|------------|--|--|

CUE: When checked, SDC flow indicates 3000 GPM.

- | | | |
|----|---|-------------------------------------|
| 6. | Check that the SHUTDOWN CLG FLOW CONTR, 1-FIC-306, is controlling flow. | Checks SDC flow on 1-FIC-306, 1C09. |
|----|---|-------------------------------------|

CUE: When checked, HS-3657 is in AUTO, SI-657 indicates intermediate and SDC temperature is lowering slowly.

- | | | |
|----------|---|--|
| _____ 7. | Verify the S/D COOLING TEMP CONTR valve, 1-SI-657-CV, is operating from 1C09. | |
|----------|---|--|

- | | | |
|----------|--|---|
| _____ a. | Ensure that the SDC TEMP CONTR valve keyswitch, 1-HS-3657, is in AUTO. | Checks HS-3657 position |
| _____ b. | Adjust 1-HIC-3657 to control temperature. | Raises output of HIC-3657. Checks SI-657 position indication. Checks SDC temperature slowly lowering, TR-351 on 1C09. |

CUE: The CRS will complete step 8.

- | | | |
|----|---|----------------------|
| 8. | IF SDC has been retored, THEN complete the following actions: | No actions necessary |
|----|---|----------------------|

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-3B-2

ELEMENT

STANDARD

(* = CRITICAL STEP)

TERMINATING CUE:	This JPM is complete when SDC has been restored. No further actions are required.
------------------	---

TIME STOP _____

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020070303

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools
2. Initial Conditions:
 - a. Unit 1 has been shutdown for 5 days and is presently in Mode 5.
 - b. SDC is in service, using 12 LPSI Pp, and RCS temperature is ~136°F.
 - c. RCS pressure is 130#, with a bubble in the Pressurizer.
 - d. ABO reported smoke coming from 12 LPSI Pp motor.
 - e. 12 LPSI Pp has just tripped.
 - f. You are performing the duties of the Unit 1 CRO.
3. Initiating Cue: The CRS directs you to respond to the loss of SDC by implementing AOP-3B, at Step IV.A.5.

**CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-7A-2F**

TASK: 020400203 Restore CC/trip RCPs due to a SW Pump Failure in Modes 3-6

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

TASK: 020400203 Restore CC/trip RCPs due to a SW Pump Failure in Modes 3-6

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

PREREQUISITES:

Completion of the knowledge requirement of the Initial License class training program for the Salt Water System.

EVALUATION LOCATION:

_____ PLANT _____ SIMULATOR _____ CONTROL ROOM

EVALUATION METHOD:

_____ ACTUAL PERFORMANCE _____ DEMONSTRATE PERFORMANCE

ESTIMATED TIME TO COMPLETE JPM:

5 MINUTES

ACTUAL TIME TO COMPLETE JPM:

_____ MINUTES

TIME CRITICAL TASK:

NO

TASK LEVEL:

LEVEL 1

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

AOP-7A

TASK STANDARDS:

This JPM is complete when the RCP's are tripped on high thrust bearing temperature.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

TASK: 020400203 Restore CC/trip RCPs due to a SW Pump Failure in Modes 3-6

DIRECTIONS TO EVALUATOR:

1. Simulator Setup
 - a. IC to be determined. Setup for Mode 3, HSB.
 - b. Panel display 1C13
Override SW 1-HS-3826 to Close
 - c. Malfunction SW002_01 (11 SW PP)
 - d. Isolate Component Cooling to Containment until bleedoff or bearing temperature is near trip setpoint.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-7A-2F

TASK: 020400203 Restore CC/trip RCPs due to a SW Pump Failure in Modes 3-6

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
 Identify the Control Switch and Indicating Lights, using authorized identification.
 Operate the Control Switch, to START, and check expected Indicating Light response.
 Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
 Operate the Control Switch, to STOP, and check expected Indicating Light response.
 Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
 Select the Control Switch to the desired position.
 Check Valve/Breaker position, using position Indicating Lights.
 Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
 Check the Valve/Breaker is in the correct position.
 If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
 Check the Valve/Breaker is in the correct position.
 If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE AOP-7A-2F**

TASK: 020400203 Restore CC/trip RCPs due to a SW Pump Failure in Modes 3-6

- Adequate Suction Pressure
- Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check for proper Pump operation (as applicable):
- Smooth, quiet operation consistent with pump history
 - Oil level remains good
 - Proper seal leakoff
 - Proper discharge pressure
 - Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

TIME START _____	
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_____	Locate AOP-7A, Step VI.A.	Same as element
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CUE:	If checked:
	a. RCP lower seal temperatures are between 142°F and 149°F
	b. RCP bleed-off temperatures are between 154°F and 161°F
	c. 12A RCP thrust bearing temperature is 170°F, all others are approximately 160°F.
	d. 12A RCP guide bearing temperature is 170°F, all others are approximately 160°F.

CUE:	None of these temperature limits have been exceeded.
------	--

_____ A.1. **IF ANY** of the following RCP temperature limits are exceeded:

On 1C06:		Monitors temperatures, on 1C06.
· Upper Thrust Bearing Temp	195°F	
· Downward Thrust Brg Temp	195°F	
On the Plant Computer (Groups 009 and 010):		Monitors temperature, on Plant Computer.
· Upper Guide Bearing Temp	195°F	
· Lower Guide Bearing Temp	195°F	
· Controlled Bleed-off Temp	200°F	

THEN perform the following actions: Determines step is continuously applicable when any of the above temperature limits are exceeded.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-7A-2F

ELEMENT	STANDARD
(* = CRITICAL STEP)	

<p>CUE: If checked,</p> <p style="margin-left: 20px;">a. 11 CC heat exchanger outlet 1-HIC-5206 indicates intermediate (5%).</p> <p style="margin-left: 20px;">b. 11 CC heat exchanger outlet 1-CC-3824-CV indicates open.</p>
--

<p>___ B.1. On the unaffected SW header, place the associated CC HX in service PER ATTACHMENT (1), <u>SHIFTING CC HEAT EXCHANGERS.</u></p>	<p>Refers to Attachment (1).</p>
---	----------------------------------

ATTACHMENT 1

<p>CUE: The CVCS IX is in service. When checked, CVC-520 indicates bypass position.</p>

<p>___ 1. IF the CVCS IX is in service, THEN bypass the IX by placing the CVCS IX BYP handswitch, 1-HS-2520 in BYP.</p>	<p>Places 1-HS-2520, on 1C07, in BYP. Checks position indication for 1-CVC-520.</p>
---	---

<p>CUE: When 1-HIC-5208 is throttled, 12 CC Heat Exchanger Outlet (1-SW-5208) indicates intermediate.</p>

<p>___ 2. Throttle open the CC HX SW FLOW CONTR for the <u>unaffected</u> HX:</p> <p style="margin-left: 40px;">(11 CC HX) 1-HIC-5206</p> <p style="margin-left: 40px;">(12 CC HX) 1-HIC-5208</p>	<p>Throttles 1-HIC-5208, on 1C13.</p>
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<p>CUE: When open is selected on 1-CC-3826-CV, 12 Component Cooler Heat Exchanger discharge valve does not respond (valve indicates fully shut).</p>
--

<p>CUE: When the SS or CRS has been informed that 1-CC-3826-CV cannot be opened or that Attachment (1) cannot be completed,</p> <p style="margin-left: 20px;">a. Acknowledge report.</p> <p style="margin-left: 20px;">b. Alarms E-50 and E-62 have just come in (If necessary, direct RO to investigate alarms).</p>

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

ELEMENT

(* = CRITICAL STEP)

STANDARD

3. Open the CC HX CC OUT valve for the unaffected HX:

(11 CC HX) 1-CC-3824-CV
 (12 CC HX) 1-CC-3826-CV

Places 1-HS-3826 in the OPEN. Checks position indication for 1-CC-3826. When it has been determined that 1-CC-3826 will not open, informs CRS or SS that 1-CC-3826 will not open or that Attachment (1) cannot be completed.

CUE: Direct monitoring RCP temperatures per Block step A.

When monitored,

- a. 11A and 11B motor thrust bearing temperatures are 185°F
 b. 12A and 12B motor thrust bearing temperatures are 205°F.

If tripping RCPs is recommended, direct tripping all RCPs.

* A.1. IF ANY of the following RCP temperature limits are exceeded:

On 1C06:

Upper Thrust Bearing Temp 195°F
 Downward Thrust Brg Temp 195°F

Monitors temperatures, on 1C06.

On the Plant Computer (Groups 009 and 010):

Upper Guide Bearing Temp 195°F
 Lower Guide Bearing Temp 195°F
 Controlled Bleed-off Temp 200°F

Monitors temperatures, on Plant Computer.

THEN perform the following actions:

- a. Stop ALL RCPs.

Stops all RCPs (HS-151, 161, 171 and 181 on 1C06).

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

ELEMENT

STANDARD

(* = CRITICAL STEP)

TIME STOP _____

TERMINATING CUE:

The JPM is complete when handswitches for all RCPs have been placed in the tripped position. No further actions are required.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-7A-2F

TASK: 020400203 Restore CC/trip RCPs due to a SW Pp Failure in Modes 3-6

Document below any instances of failure to comply with industrial safety practices, radiation safety practices and use of event free tools

COMMENTS:

The operator's performance was evaluated against the standards contained in this JPM and determined to be

SATISFACTORY

UNSATISFACTORY

EVALUATOR'S SIGNATURE: _____ DATE: _____

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020400203

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools
2. Initial Conditions:
 - a. Unit one is in mode 3 at 532°F with all RCPs running.
 - b. 11 Component Cooling heat exchanger is in service.
 - c. The CRS and the CRO have implemented AOP-7A.
 - d. 11 Salt Water header has been lost.
 - e. You are performing the duties of Unit 1 RO.
3. Initiating Cue: The CRS has directed you to implement AOP-7A beginning at Step VI.A. Are there any questions? You may begin.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

SYSTEM: Engineered Safety Features Actuation

TASK: 020630402 Verify a Recirculation Actuation Signal (RAS)

PURPOSE: Evaluates an Operator's ability to verify RAS actuation and operate equipment.

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

TASK: 020630402 Verify a Recirculation Actuation Signal (RAS)

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

EVALUATION LOCATION:

SIMULATOR

EVALUATION METHOD:

ACTUAL PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

15 MINUTES

TIME CRITICAL TASK:

NO

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

EOP-5
EOP Attachment (6) and Attachment (12)

TASK STANDARDS:

This JPM is complete when RAS has been verified and second CC HX and pump have been placed in service.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

TASK: 020630402 Verify a Recirculation Actuation Signal (RAS)

DIRECTIONS TO EVALUATOR:

1. Simulator Setup
 - a. IC-13, U1, 100%
 - b. Insert Malfunction RCS 001, Cold Leg Rupture
 - c. Run simulator until RAS
 - d. Place 11 CC pump Breaker failure malfunction on a trigger for 1-CC-3826-CV (or if camera is available to monitor 1C13, use a function key setup)
 - e. Place SI-659 & 660 lockout H/S to ON.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

TASK: 020630402 Verify a Recirculation Actuation Signal (RAS)

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

Identify the Control Switch and Indicating Lights, using authorized identification.

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)**

TASK: 020630402 Verify a Recirculation Actuation Signal (RAS)

Operate the Control Switch, to START, and check expected Indicating Light response.

Check for proper Pump operation (as applicable):

- Smooth, quiet operation consistent with pump history
- Oil level remains good
- Proper seal leakoff
- Proper discharge pressure
- Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.

Operate the Control Switch, to STOP, and check expected Indicating Light response.

Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.

Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).

Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.

Operate the Control Switch and check expected Indicating Light response.

Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.

Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).

If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.

Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).

If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

TIME START _____	
------------------	--

_____ Locate EOP-5, Section IV.S.	Same as element.
-----------------------------------	------------------

CUE: When checked:	
--------------------	--

- | | |
|--|--|
| <ul style="list-style-type: none"> • 1-LIA-4142 indicates off-scale low. • 1-LIA-4143 indicates approximately 0.5 feet. • "ACTUATION SYS RAS TRIPPED" alarm has actuated. | |
|--|--|

_____ 1.	WHEN RWT level drops .75 feet OR the "ACTUATION SYS RAS TRIP" alarm is received, THEN perform the following actions:	Checks RWT level at 1-LIA-4142 and 1-LIA-4143, on 1C08 and 1C09. Verifies "ACTUATION SYS RAS TRIPPED" alarm actuation, on 1C08.
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_____ a.	Verify RAS actuation.	Verifies RAS actuation (LPSI PPs off, Containment Sump MOVs open.
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CUE: When checked, 1-LI-4146 and 1-LI-4147 indicate approximately 70.0 inches of water in the containment sump.	
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_____ b.	Ensure that a minimum containment sump level of at least 28 inches is indicated on the CNTMT WR WATER LVL indication, 1-LI-4146 or 1-LI-4147.	Checks Containment sump level 1-LI-4146 or 1-LI-4147, on 1C10.
----------	---	---

NOTE TO EVALUATOR: Attachment (6) is provided in the back of this JPM.

_____ c.	Verify RAS lineup PER ATTACHMENT (6), RAS VERIFICATION CHECKLIST	Same as element
----------	---	-----------------

* _____ d.	IF RAS lineup is verified, THEN shut the RWT OUT valves:	Same as element
------------	---	-----------------

- | | |
|--|--|
| <ul style="list-style-type: none"> • 1-SI-4142-MOV • 1-SI-4143-MOV | |
|--|--|

e.	Place a second CC HX in service as follows:	
----	--	--

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE EOP-5-3 (MODIFIED)

ELEMENT	STANDARD
(* = CRITICAL STEP)	

CUE: SW-5208 indicates intermediate and SW flow to 12 CCHX is indicated.

- | | | |
|---------|--|---|
| * _____ | (1) Throttle open the appropriate CC HX SALTWATER OUT valve: | Places appropriate HIC-5208 to approximately the same output as 11 CC HX SALTWATER OUT. |
| | <ul style="list-style-type: none"> • 1-HIC-5206 • 1-HIC-5208 | |

CUE: When positioned/checked, 1-CC-3824-CV and 1-CC-3826-CV indicate OPEN.

- | | | |
|---------|--|-----------------------------|
| * _____ | (2) Open the appropriate CC HX CC OUT valve: | HS-3824 (3826), 1C13, {3.0} |
| | <ul style="list-style-type: none"> • 1-CC-3824-CV • 1-CC-3826-CV | |

CUE: When initial pump is started:

- Component Cooling Pump breaker indicates closed momentarily, then trips free.
- Ammeter indicates running amps approximately 0 amps.
- No common mode failure conditions indicated

When remaining pump is started:

- Component Cooling Pump breaker indicates closed.
- Ammeter indicates running amps approximately 160 amps.

- | | | |
|---------|---------------------------|--|
| * _____ | (3) Start a second CC PP. | <p>Initial start of second pump results in a tripped condition.</p> <p>Checks for common mode failure conditions (CC Head Tk level, Sys pressure, 480 V ESF Bkr Alarm</p> <p>Starts a Second Component Cooling Pump, on 1C13.</p> <p>Checks Pump breaker indication closed.</p> <p>Checks Pump running amps at approximately 160 amps.</p> |
|---------|---------------------------|--|

TIME STOP _____

TERMINATING CUE: This JPM is complete when RAS has been verified and a second Heat Exchanger and Pump have been started. No further actions are required.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020630402

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools.
2. Initial Conditions:
 - a. One hour ago, a major transient occurred on Unit 1, resulting in a reactor trip and SIAS actuation.
 - b. A LOCA has been diagnosed and EOP-5 has been implemented.
 - c. RWT level has dropped to below 0.75 Ft. and RAS actuation has occurred.
 - d. Both 11 and 13 HPSI pumps are running and HPSI total flow is ~1200 gpm.
 - e. RCS pressure is ~25 psia.
3. Initiating Cue: The CRS directs you to verify RAS actuation per EOP-5, Section IV.S and place a second CC Heat Exchanger and pump in service. Are there any questions? You may begin.

ATTACHMENT (6)
Page 1 of 1

RAS VERIFICATION CHECKLIST

2C08, 2C09, 2C10

- a. 21 and 22 LPSI PPs Off
- b. SI PP RECIRC isolation MOVs:
 - 2-SI-659-MOV Shut
 - 2-SI-660-MOV Shut
- c. CNTMT SUMP DISCH valves:
 - 2-SI-4144-MOV Open
 - 2-SI-4145-MOV Open

2C13

- a. CAC SRW INL valves:
 - 2-SRW-1581-CV Open
 - 2-SRW-1584-CV Open
 - 2-SRW-1589-CV Open
 - 2-SRW-1592-CV Open

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

SYSTEM: Nuclear Instrumentation System

TASK: 020570501 Calibrate Excore/RRS NI channels

PURPOSE: Evaluates an Operator's Ability to calibrate one channel of NI per OI-30 during Steady State power

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE OI 30 (NEW)

TASK: 020570501 Calibrate Excore/RRS NI Channel

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

EVALUATION LOCATION:

SIMULATOR

EVALUATION METHOD:

ACTUAL PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

25 MINUTES

TIME CRITICAL TASK:

NO

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

OI-30

TASK STANDARDS:

This JPM is complete when one NI Channel has been calibrated per OI-30 Section 6.2.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI 30 (NEW)

TASK: 020570501 Calibrate Excore/RRS NI Channel

DIRECTIONS TO EVALUATOR:

1. Setup instructions:
 - a. Select IC-13 for 100% power.
 - b. Adjust Channel B NUCLEAR POWER CALIBRATE pot to insert $>.5\%$ to $<3\%$ deviation from D/T power

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

TIME START _____

CUE: OI-30 Section 6.2 Step A and B.1 are complete. Begin at Step 2.

_____ 2. **CALCULATE** the required trip unit voltage as follows:

CUE: Use PA912.

- | | |
|---|--|
| <p>a. IF PA912 is used, THEN OBTAIN the value from the Plant Computer for PAPCNTPW OR DIVIDE PA912 value by 27 AND RECORD this number in the NUCLEAR INSTRUMENTATION CALIBRATION log sheet as CAL. CALCULATED POWER _____%</p> | |
| <p>b. IF PA912 is NOT used,</p> | <p>Same as Element</p> |
| <p>c. DIVIDE the percent power calculated above by 20 AND RECORD this number in the NUCLEAR INSTRUMENTATION CALIBRATION log sheet as CAL. POWER/20 _____ VOLTS</p> | <p>Determines step is N/A</p> <p>Same as Element</p> |

NOTE: Excore NI Power Range Safety Channel As-found data is collected one entire channel at a time, with channels selected in any order.

_____ 3. **OBTAIN** As-found data for each channel requiring calibration, by performing steps a. through f. for a specific channel. **RECORD** all data in the As-found section of the NUCLEAR INSTRUMENTATION

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT (* = CRITICAL STEP)	STANDARD
_____ a.	RECORD the NUCLEAR PWR CALIBRATE Potentiometer Dial setting (FIGURE 1- Item D) Same as Element
_____ b.	RECORD the ΔT PWR CALIBRATE Potentiometer Dial setting (FIGURE 1 – Item E) Same as Element
_____ c.	PLACE the DVM METER INPUT switch (FIGURE 1 – Item B) in METER INPUT Same as Element
_____ d.	<p>Momentarily DEPRESS each of the Reference Voltage Pushbuttons (FIGURE 1- Item A) AND CHECK the DVM readings within the following limits:</p> <p>+10..... +9.990 to +10.010</p> <p>-10 -9.990 to -10.010</p> <p>ZERO..... -0.010 to +0.010</p> <p style="text-align: right;">Determines step is N/A</p> <p>IF any DVM readings is out of range,</p>
_____ e.	CHECK the DVM Scaling Amplifier as follows:

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	(* = CRITICAL STEP)	STANDARD
_____	(1) PLACE the DVM METER INPUT switch in Δ T PWR AND RECORD the DVM reading as DELTA T PWR %.	Same as Element
_____	(2) DEPRESS AND HOLD the METER READING- CALIBRATE pushbutton AND ALLOW the DVM to stabilize	Same as Element
_____	(3) CHECK the DVM reading between 199 and 201 %	Same as Element
_____	(4) RELEASE the METER READING- CALIBRATE pushbutton	Same as Element
_____	(5) IF the DVM reading is out of range,	Determines step is N/A
_____	(6) PLACE the DVM METER INPUT switch in NUC PWR AND RECORD the DVM reading as NUC PWR %	Same as Element

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	(* = CRITICAL STEP)	STANDARD
_____	(7) DEPRESS AND HOLD the METER READING- CALIBRATE pushbutton AND ALLOW the DVM to stabilize	Same as Element
_____	(8) CHECK the DVM reading between 199 to 201 %	Same as Element
_____	(9) RELEASE the METER READING- CALIBRATE pushbutton.	Same as Element
_____	(10) IF the DVM reading is out of range,	Determines step is N/A
_____	f. REPEAT Steps a. through f. for the next NI Channel until As-found data is obtained for all channels requiring calibration.	Collects data on other channels as determined by the evaluator
_____	4. DETERMINE the difference between the following for each channel: • CALCULATED POWER % AND DELTA T PWR% • CALCULATED POWER % AND NUC PWR %	Same as Element

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT (* = CRITICAL STEP)	STANDARD
<p>_____ 5. IF any of the following apply, THEN PROCEED to Step 7:</p> <ul style="list-style-type: none"> • Power less than or equal to 70% • PA912 dies NOT have a good quality point • Either difference calculated in step 4 is greater than or equal to ½% for a specific channel 	Determines Step 7 applies to channel B
<p>_____ 6. IF BOTH differences calculated in step 4 are less than ½% for a specific channel, THEN PERFORM the following for that channel:</p>	Determines step applies to Channels A, C and D
<p>_____ (a) RECORD the following As-found data in the As-left column:</p> <ul style="list-style-type: none"> • DELTA T PWR % • NUC PWR % 	Same as Element
<p>_____ (b) N/A the As-found AND As-left NUC PWR (V)</p>	Same as Element
<p>_____ (c) RECORD the As-found NUCLEAR PWR CALIBRATE Potentiometer Dial setting in the As-left column</p>	Same as Element
<p>_____ (d) RECORD the As-found DELTA T PWR CALIBRATE potentiometer dial setting in the As-left column</p>	Same as Element

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	STANDARD																				
(* = CRITICAL STEP)																					
* _____ (e) COMPARE the ΔT PWR CALIBRATE potentiometer setting to the As-found ΔT PWR CALIBRATE potentiometer setting AND the Plant Setpoint File.	Determines all are in spec for each Channel compared to the Plant Setpoint File																				
_____ (f) IF the ΔT PWR CALIBRATE potentiometer setting is outside the tolerance listed in the Plant Setpoint file,	Determines step is N/A																				
_____ 7. IF directed by Step 5, THEN CALIBRATE each channel requiring calibration, by performing Steps <u>a. through af.</u> for a specified channel. RECORD all data in the As Left section of the NUCLEAR INSTRUMENTATION CALIBRATION log sheet (unless otherwise specified).	Determines Channel B requires calibration																				
a. BYPASS the following RPS trips for the channel to be calibrated.	Same as element																				
<table border="0"> <thead> <tr> <th></th> <th><u>TRIP UNIT</u></th> <th><u>BYPASS KEY</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>* _____</td> <td>HI POWER.....</td> <td>1</td> <td rowspan="5">Same as element</td> </tr> <tr> <td>* _____</td> <td>HI RATE.....</td> <td>2</td> </tr> <tr> <td>* _____</td> <td>TM/LO PRESS.....</td> <td>7</td> </tr> <tr> <td>* _____</td> <td>LOSS LOAD.....</td> <td>8</td> </tr> <tr> <td>* _____</td> <td>AXIAL PWR.....</td> <td>10</td> </tr> </tbody> </table>		<u>TRIP UNIT</u>	<u>BYPASS KEY</u>		* _____	HI POWER.....	1	Same as element	* _____	HI RATE.....	2	* _____	TM/LO PRESS.....	7	* _____	LOSS LOAD.....	8	* _____	AXIAL PWR.....	10	
	<u>TRIP UNIT</u>	<u>BYPASS KEY</u>																			
* _____	HI POWER.....	1	Same as element																		
* _____	HI RATE.....	2																			
* _____	TM/LO PRESS.....	7																			
* _____	LOSS LOAD.....	8																			
* _____	AXIAL PWR.....	10																			
b. INDEPENDENTLY CHECK that RPS Trip Units 1, 2, 7, 8, 10 are bypassed.	Evaluator should acknowledge this action as a PEER check.																				
c. PLACE the Linear Power Drawer Operate-Test switch in ZERO for the channel to be calibrated.	Same as element																				

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	STANDARD
(* = CRITICAL STEP)	
* _____	d. PLACE the ΔT , TM/LP CALCULATR MODE switch in ZERO/EXT INPUT. Same as element
_____	e. ENSURE the DVM METER INPUT switch in NUCLEAR PWR AND OBSERVE DVM reading. Same as element
_____	f. IF the DVM reading is equal to or greater than 1%, THEN PERFORM the following: Determines to be N/A
* _____	g. PLACE the Linear Power Operate – Test switch in OPERATE Same as element
_____	h. Momentarily DEPRESS the Reset pushbutton on the front of the Linear Power Drawer. Same as element
_____	i. IF tripped, THEN RESET VOPT AND associated Control Room annunciators. Reset VOPT, resets applicable RPS trip units
* _____	j. CONNECT the RPS Trip Test Cable to the RPS HI POWER Trip Unit. Same as element
* _____	k. PLACE the DVM METER input SWITCH in meter input. Same as element
_____	l. RECORD the DVM reading as NUC PWR (V) in the As Found section of the NUCLEAR INSTRUMENTATION CALIBRATION log sheet. Same as element

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	STANDARD
(* = CRITICAL STEP)	
NOTE:	Clockwise rotation of the potentiometers lowers the DVM reading and counterclockwise rotation raises the reading.
CAUTION:	Potentiometer adjustments must be stopped immediately if 1C05 annunciator "POWER LEVEL HIGH CHANNEL PRE_TRIP" alarms while adjusting a potentiometer.
* _____	m. UNLOCK AND Slowly ADJUST the NUCLEAR PWR CALIBRATE potentiometer to obtain a DVM reading equal to the REQUIRED TRIP UNIT INPUT VOLTAGE calculated in Step 6.2.B.2.c Same as element
_____	(1) IF 1C05 annunciator "POWER LEVEL HIGH CHANNEL PRE-TRIP" alarms while the potentiometer is being adjusted, THEN STOP the adjustment AND ENSURE the test switch alignment is correct. Determines step is N/A
_____	(2) IF 1C05 annunciator "POWER LEVEL HIGH CHANNEL PRE-TRIP" alarmed AND the test switch alignment is correct, Determines step is N/A
_____	n. LOCK the locking device on the NUCLEAR PWR CALIBRATE potentiometer. Same as element
_____	o. IF the DVM reading changed while locking the potentiometer above, THEN GO TO Step 1. Same as element
_____	p. RECORD the DVM reading as NUC PWR (V). Same as element

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT	(* = CRITICAL STEP)	STANDARD
_____	q. RECORD the NUCLEAR PWR CALIBRATE potentiometer setting as NUC PWR POT SET.	Same as element
_____	r. PLACE the DVM METER INPUT switch in NUCLEAR PWR AND RECORD the DVM reading as NUC PWR %.	Same as element
* _____	s. PLACE the ΔT , TM/LP CALCULATOR MODE switch in OPERATE	Same as element
_____	t. DISCONNECT the RPS Trip Test cable from the HI POWER Trip Unit.	Same as element
NOTE: The deviation meter will fluctuate due to noise in the ΔT Power Channels. Nuclear Power and D/T Power DVM readings are equal at the zero mark		
_____	u. PLACE the DVM METER INPUT switch to ΔT PWR.	Same as element
_____	v. UNLOCK AND ADJUST the D/T PWR CALIBRATE potentiometer to null the NUCLEAR PWR- ΔT PWR (%) deviation meter such that fluctuations occur evenly about the zero mark.	Same as element
_____	w. LOCK the locking device on the ΔT PWR CALIBRATE potentiometer.	Same as element
_____	x. IF the DVM reading changed while locking the potentiometer above, THEN GO TO Step u	Same as element

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE OI-30 (NEW)

ELEMENT (* = CRITICAL STEP)		STANDARD	
_____	y.	COMPARE the ΔT PWR CALIBRATE potentiometer setting to the As Found ΔT PWR CALIBRATE potentiometer setting AND the Plant Setpoint File. [B0071].	Same as element
_____	z.	IF the ΔT PWR CALIBRATE potentiometer setting is outside the tolerance listed in the PLANT Setpoint File, THEN REFER to APPENDIX B for appropriate actions.	Determines it is in spec
_____	aa.	RECORD the DVM reading as DELTA T PWR %.	Same as element
_____	ab.	RECORD the Δ/T PWR CALIBRATE potentiometer setting as DELTA T PWR POT SET.	Same as element
_____	ac.	IF tripped, THEN RESET VOPT AND RPS Trip Units 1, 7 and 10 AND associated Control Room annunciators.	Same as element
* _____	ad.	REMOVE the Trip Bypass Keys from RPS Trip Units 1, 2, 7, 8 and 10.	Same as element

TIME STOP _____

TERMINATING CUE:	This task is complete when the Channel B has been calibrated (through Step ad). No further actions are required.
-------------------------	--

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 020570501

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools.
2. Initial Conditions:
 - a. Unit 1 is in Mode 1, at 100% power for 230 days.
 - b. You are performing the duties of the CRO.
3. Initiating Cue: The CRS directs you to complete Section 6.2.B of OI-30, NI Calibration.
4. Are there any questions? You may begin.

UNIT ONE NUCLEAR

INSTRUMENTATION CALIBRATION DATA SHEET

DATE: _____

CALCULATED POWER: _____ (%)

TIME: _____

CALCULATED POWER / 20 _____ (VDC)

AS FOUND

CHAN	NUC	NUC	NUC PWR	DELTA T	DELTA T PWR
	PWR %	PWR V	POT SET	PWR %	POT SET
A					
B					
C					
D					

AS LEFT

NUC	NUC	NUC PWR	DELTA T	DELTA T	DELTA T PWR
PWR %	PWR V	POT SET	PWR %	POT SET	POT STPT.

DELTA T POT SETPOINT TOLERANCE * _____

* SETPOINTS AND ALLOWABLE TOLERANCES ARE FROM THE SETPOINT FILE. S.R 3.3.1.2 (CR LOG BASIS 213)

**CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-9A-NEW**

SYSTEM: Emergency Diesel Generators
TASK: 010480313 Take LOCAL Diesel Generator Control
PURPOSE: Evaluates an Operator's Ability to Shutdown an DG Using Local Engine Control

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-9A-NEW

TASK: 010480313 Take LOCAL Diesel Generator Control

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

EVALUATION LOCATION:

PLANT

EVALUATION METHOD:

DEMONSTRATE PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

15 MINUTES

TIME CRITICAL TASK:

NO

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

AOP-9A

TASK STANDARDS:

This JPM is complete when 1A Diesel Generator and Breakers are in local control

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-9A-NEW

TASK: 010480313 Take LOCAL Diesel Generator Control

DIRECTIONS TO EVALUATOR:

None

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-9A-NEW

TASK: 010480313 Take LOCAL Diesel Generator Control

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-9A-NEW

TASK: 010480313 Take LOCAL Diesel Generator Control

Check for proper Pump operation (as applicable):

- Smooth, quiet operation consistent with pump history
- Oil level remains good
- Proper seal leakoff
- Proper discharge pressure
- Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE AOP-9A-NEW

ELEMENT (* = CRITICAL STEP)	STANDARD
--------------------------------	----------

TIME START _____

CUE: Give the operator a copy of AOP-9A.
--

- | | | |
|---------|---|------------------|
| _____ | Identify AOP-9A, Step AJ. | Same as element. |
| * _____ | 1. Place a Local/Remote Key into 1A DG Output Breaker LOCAL/REMOTE handswitch, 1-HS-1703A, and unlock it. | Same as element |
| * _____ | 2. Place 1A DG Output Breaker LOCAL/REMOTE handswitch, 1-HS-152-1703A to LOCAL. | Same as element |

CUE: "1A DG Output Breaker is tripped".

- | | | |
|---------|--|---|
| * _____ | 3. Place 1A DG OUT BKR Local Control handswitch, 1-HS-1703B to TRIP | Same as element |
| _____ | 4. Notify 1C43 that 1A Diesel Generator Output Breaker is in LOCAL and TRIPPED. | Simulates call with examiner |
| _____ | 5. Perform step AY. | Locates step AY and proceeds per procedure. |
| _____ | Identify AOP-9A, Step AY | |
| * _____ | 1. Place a Local/Remote Key into 17-11 4KV Bus Tie Breaker LOCAL/REMOTE handswitch, 1-HS-1701A, and unlock it. | Same as element |
| * _____ | 2. Place 17-11 4KV Bus Tie Breaker LOCAL/REMOTE handswitch, 1-HS-152-1701A to LOCAL. | Same as element |

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-9A-NEW

ELEMENT	(* = CRITICAL STEP)	STANDARD
* ___ 3.	Place a Local/Remote key into U440-17 4KV Feeder Breaker LOCAL/REMOTE handswitch, 1-HS-1702A and unlock it	Same as element
* ___ 4.	Place U440-17 4KV Feeder Breaker LOCAL/REMOTE handswitch 1-HS-1702A to LOCAL.	Same as element
* ___ 5.	Place a Local/Remote Key into 17 480V Bus Feeder LOCAL/REMOTE handswitch 1-HS-52-1701A and unlock it .	Same as element
* ___ 6.	Place 17 480V Bus Feeder Breaker LOCAL/REMOTE handswitch 1-HS-52-1701A to LOCAL.	Same as element
___ 7.	GO TO back of Panel 1C188-4 and open door (NOTE: DO NOT OPEN DOOR)	Candidate identifies the panel only
* ___ 8.	Insert key and unlock the 43/LR switch. (NOTE: This is discussed only)	Element is N/A
CUE: "43/LR Switch is in Local Position".		
* ___ 9	Place the 43/LR switch handle in the upper, LOCAL position.	Element is N/A
___ 10.	Lock 43/LR switch, remove key, and close the door.	Element is N/A
CUE: 1A DG is running.		
11.	IF 1A Diesel Generator is running, THEN:	
* ___	a. Simultaneously depress BOTH local emergency stop pushbuttons, 1A LOCAL EMER STOP PB, 1-HS-10335 AND 1-HS-1-10336	Simulates lifting cover to depress the pushbuttons

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE AOP-9A-NEW

ELEMENT

STANDARD

(* = CRITICAL STEP)

CUE: "1A DG Emergency Shutdown is Reset".

- | | | |
|-------|---|---|
| _____ | b. Reset 1A Diesel Generator by depressing 1A GEN EMER S/D RESET PB, 1-HS-10337 | Simulates lifting cover to depress the pushbutton |
| _____ | 12. Notify 1C43 that 1A Diesel and Breakers are in local control. | Simulates call with examiner |

TIME STOP _____

TERMINATING CUE:	This JPM is complete when 1C43 has been notified. No further actions are required.
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CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 010480313

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools.
2. Initial Conditions:
 - a. A severe fire has resulted in a control room evacuation.
 - b. All diesel generators are operating.
 - c. You are performing the duties of the outside operator.
 - d. You have the AOP-9A keys.
3. Initiating Cue: The CRO at 1C43 has directed you to place the 1A diesel generator and breakers in local control per AOP-9A, Step AJ and AY. Are there any questions? You may begin.

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE STP-O-55 (NEW)

SYSTEM: Containment

TASK: 010010501 Verify Containment Integrity (Modes 1-4)

PURPOSE: Evaluates an Operator's Ability to verify Containment Integrity

**JOB PERFORMANCE MEASURE
CALVERT CLIFFS NUCLEAR POWER PLANT
LICENSED OPERATOR TRAINING**

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE STP-O55 (NEW)

TASK: 010010501 Verify Containment Integrity (Modes 1-4)

PERFORMER'S NAME: _____

APPLICABILITY:

RO and SRO

EVALUATION LOCATION:

PLANT

EVALUATION METHOD:

ACTUAL PERFORMANCE

ESTIMATED TIME
TO COMPLETE JPM:

20 MINUTES

TIME CRITICAL TASK:

NO

TOOLS AND EQUIPMENT:

None

REFERENCE PROCEDURE(S):

STP O-55-2

TASK STANDARDS:

This JPM is complete when the Containment Integrity is verified for the selected penetration(s).

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE STP-O55 (NEW)

TASK: 010010501 Verify Containment Integrity (Modes 1-4)

DIRECTIONS TO EVALUATOR:

None

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE STP-O55 (NEW)

TASK: 010010501 Verify Containment Integrity (Modes 1-4)

JPM STANDARDS

(List of minimum Standard Practices for common evolutions at CCNPP)

1.0 Starting a pump

If non-emergency condition, dispatches a PO to verify pump is ready to be started.
Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check proper pump operation (as applicable):

- Motor amps
- Pump discharge pressure
- System flow
- Activation/Clearing of applicable Annunciators (e.g.; Hi Disch Press, Lo Hdr Press)

2.0 Stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level)

3.0 Operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights, using authorized identification.
Select the Control Switch to the desired position.
Check Valve/Breaker position, using position Indicating Lights.
Check expected system response (e.g.; flow, pressure, level, volts, amps, KW)

4.0 Checking Valve/Breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, report Valve/Breaker position to CRS.

5.0 Verifying valve/breaker position

Identify the Valve/Breaker Indicating Lights, using authorized identification.
Check the Valve/Breaker is in the correct position.
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

6.0 Locally starting a pump

Verify the following:

- Suction Valve open
- Discharge Valve position (as applicable)
- Miniflow Valve position (as applicable)
- Pump and Motor oil levels are normal
- Adequate Suction Pressure

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to START, and check expected Indicating Light response.
Check for proper Pump operation (as applicable):

CCNPP LICENSED OPERATOR**JOB PERFORMANCE MEASURE STP-O55 (NEW)**

TASK: 010010501 Verify Containment Integrity (Modes 1-4)

- Smooth, quiet operation consistent with pump history
- Oil level remains good
- Proper seal leakoff
- Proper discharge pressure
- Expected system flow

7.0 Locally stopping a pump

Identify the Control Switch and Indicating Lights, using authorized identification.
Operate the Control Switch, to STOP, and check expected Indicating Light response.
Check expected system response (e.g.; flow, pressure, level).

8.0 Operating a Manual Valve

Identify the Valve, using authorized identification.
Operate the Valve and check expected position indication change (e.g.; stem rise, pointer).
Check expected System response (e.g.; fluid flow sounds, pressure changes, tank levels).

9.0 Locally operating Control Valves/Motor Operated Valves/Circuit Breakers

Identify the Control Switch and Indicating Lights (if applicable), using authorized identification.
Operate the Control Switch and check expected Indicating Light response.
Check expected System response (e.g.; flow, pressure, levels, volts, amps).

10.0 Locally checking Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, report Valve/Breaker position to Control Room.

11.0 Locally verifying Valve/Breaker position

Identify the Valve/Breaker, using authorized identification.
Check the Valve/Breaker is in the correct position, using appropriate position indication (e.g.; pointer, stem rise, flags, indicating lights).
If Valve/Breaker is not in correct position, operates Valve/Breaker to correct position.

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE STP O-55 (NEW)

ELEMENT (* = CRITICAL STEP)	STANDARD
TIME START _____	
_____ Identify & locate Penetration on applicable page of STP O-55-2.	Determines penetrations are on page 92, 93 & 94 of STP O-55-2
_____ Verified the penetrations as described in STP O-55-2	Same as element
CUE: CANISTER 2ZEC1 has 1 PSIG indicated.	
* _____ • Attachment 2, 45' East Pent. Canisters, Page 92 & 93	Charges CANISTER 2ZEC1
OI-4 STEP 6.6.B	
_____ 1. NOTIFY the Control Room of electrical penetration canister charging operation.	Notifies evaluator
_____ 2. ENSURE SHUT the nitrogen charging hose isolation valve.	{8.0}
* _____ 3. OPEN the nitrogen outlet from the associated electric penetration PCV:	
• OUT ISOL FOR 1-N2-6326-PCV (E Pen) ... 0-N2-353	{8.0}
• OUT ISOL FOR 1-N2-6328-PCV (W Pen) ... 0-N2-355	Determines N/A
• OUT ISOL FOR 2-N2-6326-PCV (E Pen) ... 0-N2-384	Determines N/A
• OUT ISOL FOR 2-N2-6328-PCV (W Pen) ... 0-N2-386	Determines N/A
_____ 4. SHUT the PRESSURE SWITCH ISOL VLV on the canister to be charged.	{8.0}
* _____ 5. REMOVE the cap from the fill connection below the isolated pressure switch.	Same as element

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE STP O-55 (NEW)

ELEMENT (* = CRITICAL STEP)	STANDARD
* ___ 6.	CONNECT the charging hose to the fill connection on the canister to be charged. Same as element
* ___ 7.	OPEN the PRESSURE SWITCH ISOL VLV on the canister to be charged. {8.0}
* ___ 8.	OPEN the hose isolation valve and charge canister to 25 to 30 PSIG. {8.0}
* ___ 9.	WHEN the canister is between 25 and 30 PSIG, THEN SHUT the hose isolation valve. {8.0}
* ___ 10.	SHUT the PRESSURE SWITCH ISOL VLV on the canister just charged. {8.0}
<u>WARNING:</u> The nitrogen hose will be pressurized between 25 and 30 PSIG, use caution when venting off the trapped pressure.	
___ 11.	Slowly LOOSEN the nitrogen hose connection and depressurize the hose. Same as element
* ___ 12.	REMOVE hose connection from the canister fill connection. Same as element
* ___ 13.	REPLACE the cap on the canister fill connection AND TIGHTEN securely. Same as element
* ___ 14.	OPEN the PRESSURE SWITCH ISOL VLV on the canister just charged. {8.0}
___ 15.	REPEAT steps 4 through 14 for each canister requiring charging. Determines N/A

CCNPP LICENSED OPERATOR

JOB PERFORMANCE MEASURE STP O-55 (NEW)

ELEMENT	STANDARD
(* = CRITICAL STEP)	
____ 16. SHUT the nitrogen outlet from the associated electric penetration PCV opened above:	
• OUT ISOL FOR 1-N2-6326-PCV (E Pen) ... 0-N2-353	{8.0}
• OUT ISOL FOR 1-N2-6328-PCV (W Pen) ... 0-N2-355	Determines N/A
• OUT ISOL FOR 2-N2-6326-PCV (E Pen) ... 0-N2-384	Determines N/A
• OUT ISOL FOR 2-N2-6328-PCV (W Pen) ... 0-N2-386	Determines N/A
____ 17. ROTATE the handle on the local alarm panel clockwise AND counter-clockwise to reset the local dropped flag and signal to the Control Room alarm.	Same as element
____ 18. CHECK 1(2)C10 "EAST (WEST) PENET RM CANISTER PRESS LO" annunciator clear.	Notifies evaluator
____ 19. IF the leak tightness of the cap is questionable OR the rate of canister leakage increases, THEN LEAK CHECK the cap on the canister fill connection.	
____ a. IF leakage is evident, THEN TIGHTEN as necessary.	Same as element
____ b. IF cap leakage can NOT be stopped, THEN INITIATE an IR.	Determines N/A
* ____ • Attachment 2 45' East Pent. Cont.press xmitters, page 94	Same as element
____ Signs off STP O-55-2 each sheet	Same as element, check SAT

TIME STOP _____

CCNPP LICENSED OPERATOR
JOB PERFORMANCE MEASURE

TASK: 010010501

DIRECTIONS TO TRAINEE:

1. To complete the task successfully, you must:
 - perform each critical element correctly. You must inform the evaluator of the indications you are monitoring. Where necessary, consider the evaluator to be the CRS.
 - comply with industrial safety practices, radiation safety practices and use of event free tools.
2. Initial Conditions:
 - a. Unit 2 is in Mode 1.
 - b. You are performing the duties of an extra Licensed Operator.
3. Initiating Cue: The CRS directs you to verify containment integrity per STP O-55-2 in the 45' East Electrical room using Attachment 2. Are there any questions? You may begin.