

**Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION

OPERATOR PROGRAM**

INITIAL CONDITIONS

Leakage has been identified on the "A" Service Water Supply Header.

The operating crew has implemented 0-AP-12, Loss of Service Water.

High volume blowdown of the Service Water Reservoir is **NOT** in service.

INITIATING CUE

You are requested to makeup to the Service Water Reservoir using 0-AP-12, Attachment 10, Operation of the Auxiliary Service Water Pumps.

The Unit Supervisor requests that you align 1-SW-P-4, Aux Service Water Pump, to the "B" Service Water Header.

Joey Linder is standing by in the rack room with the key and a copy of the attachment.

**Dominion
North Anna Power Station
JOB PERFORMANCE MEASURE EVALUATION
OPERATOR PROGRAM**

TASK

Makeup to the Service Water Reservoir in accordance with 0-AP-12, Attachment 10.

TASK STANDARDS

Service Water MOVs are aligned, 1-SW-P-4 is started, and Service Water Spray valves are opened.

K/A REFERENCE:

076-A4.01, Ability to manually operate and/or monitor in the control room: SWS pumps
(RO 2.9 / SRO 2.9)

ALTERNATE PATH:

N/A

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____
Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature /
Date _____

EVALUATOR'S COMMENTS

Dominion
North Anna Power Station

JOB PERFORMANCE MEASURE
(Evaluation)

OPERATOR PROGRAM

R452

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

PREREQUISITES

The trainee has completed the applicable course knowledge training at the reactor operator level.

INITIAL CONDITIONS

Leakage has been identified on the "A" Service Water Supply Header.

The operating crew has implemented 0-AP-12, Loss of Service Water.

High volume blowdown of the Service Water Reservoir is **NOT** in service.

INITIATING CUE

You are requested to makeup to the Service Water Reservoir using 0-AP-12, Attachment 10, Operation of the Auxiliary Service Water Pumps.

The Unit Supervisor requests that you align 1-SW-P-4, Aux Service Water Pump, to the "B" Service Water Header.

Joey Linder is standing by in the rack room with the key and a copy of the attachment.

EVALUATION METHOD

Perform if conducted in the simulator or in a laboratory (use Performance Cue(s))

Simulate if conducted in the station or on a dead simulator (use Simulation Cue(s))

TOOLS AND EQUIPMENT

Copy of 0-AP-12, Attachment 10

PERFORMANCE STEPS

START TIME _____

Note: Applicant will read the following procedure note:

NOTE: This Attachment provides instructions for aligning the Auxiliary Service Water Pumps for Service Water Makeup and for Lake-To-Lake Operation.

1	Request the Safeguards Operator to place the key-lock switches for the Service Water Overboard Discharge Valves in DEFEAT.	Procedure Step _____
---	--	----------------------

SAT [] UNSAT []

<u>Standards</u>	<p>Safeguards operator is requested to place the key-lock switches for the following valves in DEFEAT:</p> <ul style="list-style-type: none"> • 1-SW-MOV-120A • 2-SW-MOV-220A • 1-SW-MOV-120B • 2-SW-MOV-220B
------------------	---

<u>Evaluators Note</u>	<p>The following are expected alarms that will occur when the key-lock switches are placed in DEFEAT:</p> <ul style="list-style-type: none"> • K-E3, SER WTR SYS LOGIC CABS UNITS 1 & 2 DOOR OPEN (will come in and then clear twice, simulating opening and closing of each door) • J-F8, UNIT 1 SW KEY LOCK SWITCH DEF • J-G8, UNIT 2 SW KEY LOCK SWITCH DEF
------------------------	---

<u>Notes/Comments</u>	<p>When requested, Booth Operator will acknowledge direction from applicant and call back when action is complete.</p>
-----------------------	---

2	Verify Screen Wash Pumps are stopped.	Procedure Step _____
---	---------------------------------------	----------------------

SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>
------------------------------	--------------------------------

<u>Standards</u>	The following Screen Wash Pumps are verified STOPPED, (Green Light - LIT, Red Light – NOT LIT): <ul style="list-style-type: none">• 1-CW-P-2B• 2-CW-P-2A
------------------	--

Notes/Comments

3	Close Service Water System MOVs.	Procedure Step _____
---	----------------------------------	----------------------

SAT <input type="checkbox"/>	UNSAT <input type="checkbox"/>
------------------------------	--------------------------------

<u>Standards</u>	The following Service Water System MOVs are verified CLOSED, (Green Light - LIT, Red Light – NOT LIT): <ul style="list-style-type: none">• 1-SW-MOV-118• 1-SW-MOV-119• 2-SW-MOV-219
------------------	--

Notes/Comments
Valves are normally closed.

4	IF 1-SW-P-4 will be started on the "A" Header, THEN open the following valves:	Procedure Step _____
---	--	----------------------

SAT [] UNSAT []

<u>Standards</u>	Applicant N/As this step (based on the Initiating Cue provided).
------------------	---

Notes/Comments

5	IF 1-SW-P-4 will be started on the "B" Header, THEN open the following valves:	Procedure Step _____
---	--	----------------------

Critical Step	SAT [] UNSAT []
----------------------	-------------------

<u>Standards</u>	<p>The following valves are OPENED by momentarily depressing the OPEN push-button for each valve:</p> <ul style="list-style-type: none"> • 1-SW-MOV-118 • 1-SW-MOV-115B • 2-SW-MOV-215A • 1-SW-MOV-117
------------------	--

Notes/Comments

6	IF 2-SW-P-4 will be started on the "B" Header, THEN open the following valves:	Procedure Step _____
---	--	----------------------

SAT [] UNSAT []

<u>Standards</u>	Applicant N/As this step (based on the Initiating Cue provided).
------------------	---

Notes/Comments

7	IF 2-SW-P-4 will be started on the "A" Header, THEN open the following valves:	Procedure Step _____
---	--	----------------------

SAT [] UNSAT []

<u>Standards</u>	Applicant N/As this step (based on the Initiating Cue provided).
------------------	---

Notes/Comments

8	Start the desired auxiliary service water pump.	Procedure Step
---	---	----------------

Critical Step	SAT [] UNSAT []
----------------------	-----------------

<u>Standards</u>	1-SW-P-4 is STARTED by momentarily placing the control switch in START.
------------------	---

<u>Evaluators Note</u>	Annunciator J-E3, AUX SW PP 1-P4 LO FLOW, will alarm and remain locked in when the pump is started. As stated in the Annunciator Response Procedure for this alarm, "When 1-SW-P-4 is aligned to "B" SW header and running, this alarm is expected to be locked in".
------------------------	--

Notes/Comments	IF requested, Booth Operator will acknowledge direction from applicant to check out pump and call back that pump is ready for start and operating satisfactorily (as applicable).
----------------	--

9	IF Service Water Reservoir makeup is desired, THEN do the following:
---	--

9a	Open all Service Water Spray Valves.	Procedure Step _____
----	--------------------------------------	----------------------

Critical Step	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>
----------------------	---

<u>Standards</u>	<p>The following Service Water Spray Valves are OPENED, or verified OPEN as described for each valve:</p> <ul style="list-style-type: none">• 1-SW-MOV-121A (valve verified open)• 1-SW-MOV-122A (momentarily depress OPEN pushbutton)• 1-SW-MOV-121B• 1-SW-MOV-122B• 2-SW-MOV-221A• 2-SW-MOV-222A• 2-SW-MOV-221B• 2-SW-MOV-222B <p>ONLY those items shown in BOLD type are critical to this element, remaining items are NOT critical since they are already open (normal plant alignment).</p>
------------------	--

Notes/Comments

9b	Close Service Water Overboard Discharge Isolation Valves.	Procedure Step _____
----	---	----------------------

SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

<u>Standards</u>	<p>The following Service Water Overboard Discharge Valves are verified CLOSED, (Green Light - LIT, Red Light – NOT LIT)</p> <ul style="list-style-type: none">• 1-SW-MOV-120A• 1-SW-MOV-120B• 2-SW-MOV-220A• 2-SW-MOV-220B
------------------	---

Notes/Comments

10	IF Lake-To-Lake operation is desired, THEN do the following:	Procedure Step _____
----	--	----------------------

SAT []	UNSAT []
---------	-----------

<u>Standards</u>	Applicant N/As this step (based on the Initial Conditions provided).
------------------	---

Notes/Comments

11	IF high volume blowdown of Service Water Reservoir is in service, THEN secure high volume blowdown	Procedure Step _____
----	--	----------------------

SAT []	UNSAT []
---------	-----------

<u>Standards</u>	Applicant N/As this step (based on the Initial Conditions provided).
------------------	---

Notes/Comments

12	Return to step in effect.	Procedure Step _____
----	---------------------------	----------------------

SAT []	UNSAT []
---------	-----------

<u>Standards</u>	Candidate informs you they have completed their task.
------------------	---

Notes/Comments

>>>> END OF EVALUATION <<<<

STOP TIME _____

SIMULATOR SETUP

_____ Reset to IC

WHEN called by applicant to perform 0-AP-12, Att. 10, Step 1, (place SW OVBD Disch Vlvs in defeat), Then actuate Trigger 1, toggle override on annunciator to OFF and then ON again, actuate trigger 2, then set annunciator override to OFF AND report back that action is complete.

IF called by applicant to check out pump for start (0-AP-12, Att. 10, Step 8) and/or check for operation after start, acknowledge request and report back that pump is ready for start and/or operating satisfactorily as applicable.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit 1 is in Mode 5 following refueling.

1-OP-1.1, "Unit Startup from Mode 5 at less than 140°F to Mode 5 at less than 200°F," is in progress.

1-RC-P-1C has been started and is operating normally.

The plant is solid.

RHR System is in operation.

1-CH-FCV-122 is in MANUAL.

1-CH-PCV-1145 is in AUTO.

RCS pressure is approximately 340# (ordered band is 325 to 340 psig).

RCS Temperature is approximately 159°F (ordered band is 150°F - 170°F).

Plant is being maintained in stable condition while preparations are being made to increase RCS temperature and sample the RCS.

INITIATING CUE

You are requested to maintain stable plant conditions in accordance with the ordered bands.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Terminate spurious SI in accordance with 1-AP-0.1.

TASK STANDARDS

Running RCP (1-RC-P-1C) is stopped AND SI flow is terminated within 10 minutes from time of actuation.

K/A REFERENCE:

006 A2.13 (3.9 / 4.2)

ALTERNATE PATH:

The BIT inlet valve 1-SI-MOV-1867B will fail to close from the control room. The Operator will have to dispatch Operations personnel to locally close the valve in order to terminate SI flow.

TASK COMPLETION TIMES

Validation Time = 8 minutes Start Time = _____
Actual Time = _____ minutes Stop Time = _____

SIMULATION EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Operator (Print) _____

Evaluator (Print) _____

Evaluator's Signature /
Date _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE OPERATOR

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit 1 is in Mode 5 following refueling.

1-OP-1.1, "Unit Startup from Mode 5 at less than 140°F to Mode 5 at less than 200°F," is in progress.

1-RC-P-1C has been started and is operating normally.

The plant is solid.

RHR System is in operation.

1-CH-FCV-122 is in MANUAL.

1-CH-PCV-1145 is in AUTO.

RCS pressure is approximately 340# (ordered band is 325 to 340 psig).

RCS Temperature is approximately 159°F (ordered band is 150°F - 170°F).

Plant is being maintained in stable condition while preparations are being made to increase RCS temperature and sample the RCS.

INITIATING CUE

You are requested to maintain stable plant conditions in accordance with the ordered bands.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Perform if conducted in the simulator or in a laboratory (use Simulation Cue(s))

Simulate if conducted in the station or on a dead simulator (use Simulation Cue(s))

TOOLS AND EQUIPMENT

Copy of 1-AP-0.1 may be provided once the procedure entrance/applicability is stated, or operator will obtain a controlled copy from bookshelf or cabinet.

(discretion of evaluator)

SIMULATION STEPS

START TIME _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

1	STOP ALL RCPs.	Procedure Step 1
---	----------------	------------------

Critical Step	SAT [] UNSAT []
----------------------	-------------------

<u>Standards</u>	Operator momentarily places control switch for 1-RC-P-1C in STOP (RED LIGHT LIT).
------------------	---

<u>Simulation / Verbal Cue(s)</u>	If the Operator is reluctant to leave the board to continue with AP actions due to Pressurizer PORVs cycling, act as the SRO and tell the Operator that another Operator will monitor the PORV operation.
-----------------------------------	---

Notes/Comments
Step 1 should be performed from memory since this is an Immediate Operator Action step.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

2	RESET BOTH TRAINS OF SI AFTER 60 SECOND TIME DELAY.	Procedure Step 2
---	---	------------------

Critical Step	SAT [] UNSAT []
----------------------	-------------------

<u>Standards</u>	Operator momentarily places BOTH SI Reset switches in RESET.
------------------	--

Notes/Comments
Operator should note the change in status windows. (P- H1 will clear and P-H2 will illuminate upon successful reset of BOTH trains of SI.)
SI will not reset if the Operator does not wait 60 seconds.

3	CHECK ONLY ONE CHARGING PUMP RUNNING → YES	Procedure Step 3
---	--	------------------

SAT [] UNSAT []

<u>Standards</u>	Operator verifies that 1-CH-P-1A is the only running charging pump (RED LIGHT LIT).
------------------	---

Notes/Comments

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

4	CLOSE BIT INLET ISOLATION VALVES. (Alternate Path Step)	Procedure Step 4
----------	---	------------------

Critical Step	SAT [] UNSAT []
----------------------	-----------------

<u>Standards</u>	<p>Operator verifies/establishes required alignment.</p> <ul style="list-style-type: none"> <input type="checkbox"/> Operator momentarily depresses CLOSE pushbutton for 1-SI-MOV-1867A and verifies valve indicates closed. <input type="checkbox"/> Operator momentarily depresses CLOSE pushbutton for 1-SI-MOV-1867B and observes that valve position (full open) DID NOT Change. <input type="checkbox"/> Operator dispatches operations personnel to open breaker 1-EE-BKR-1J1-2N C3, and close 1-SI-MOV-1867B per procedure step 4 RNO.
------------------	--

<u>Notes/Comments</u>
<p>Booth operator will acknowledge the request to open the breaker and close the MOV and call back in a few minutes to report that the requested action is complete.</p>

5	STOP RUNNING LOW-HEAD SI PUMPS AND PUT IN AUTO-STANDBY.	Procedure Step 5
----------	---	------------------

SAT [] UNSAT []

<u>Standards</u>	Operator momentarily places control switches for any running LHSI Pump (1-SI-P-1A and 1-SI-P-1B) in STOP (GREEN LIGHT LIT).
------------------	---

<u>Notes/Comments</u>

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

6	STABILIZE RCS PRESSURE AS NECESSARY FOR PLANT CONDITIONS.	Procedure Step 6
----------	--	------------------

SAT [] UNSAT []

<u>Standards</u>	Operator monitors RCS pressure and determines that the PORV is cycling properly and controlling plant pressure at LTOP setpoint.
------------------	--

<u>Cue(s)</u>	As the SRO, confirm that you desire to allow the PORVs to cycle at the LTOP setpoint while recovery actions continue.
---------------	---

Notes/Comments	Cue may not be necessary (operator may determine based on plant conditions that this option is the most appropriate.)
----------------	---

7	CHECK AFW – IN-SERVICE → NO	Procedure Step 7
----------	------------------------------------	------------------

SAT [] UNSAT []

<u>Standards</u>	Operator determines AFW is NOT in-service by Control Board indications and/or knowledge of plant conditions (AFW isolated in this Mode) and goes to Step 8 (per RNO).
------------------	---

Notes/Comments	
----------------	--

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

8	EVALUATE CONTAINMENT EVACUATION, AS APPLICABLE.	Procedure Step 8
---	---	------------------

SAT [] UNSAT []

<u>Cue(s)</u>	As the SRO, inform the operator that the Shift Manager will evaluate the need for Containment evacuation.
---------------	---

Notes/Comments

9	CLOSE BIT OUTLET ISOLATION VALVES.	Procedure Step 9
---	------------------------------------	------------------

SAT [] UNSAT []

<u>Standards</u>	Operator verifies/establishes required alignment. <input type="checkbox"/> Operator momentarily depresses CLOSE pushbutton for 1-SI-MOV-1867C and verifies valve indicates closed (GREEN LIGHT LIT). <input type="checkbox"/> Operator momentarily depresses CLOSE pushbutton for 1-SI-MOV-1867D and verifies valve indicates closed (GREEN LIGHT LIT).
------------------	---

Notes/Comments

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

10	RESET BOTH TRAINS OF PHASE A ISOLATION.	Procedure Step 10
-----------	---	-------------------

Critical Step	SAT [] UNSAT []
----------------------	-----------------

<u>Standards</u>	Operator momentarily places BOTH Phase A Isolation Reset switches in RESET.
------------------	---

<p><u>Notes/Comments</u></p> <p>Operator should note change in annunciator window status, (K-H7 clears upon successful reset of BOTH trains of Phase A).</p>
--

11	CHECK IF RCP SEAL WATER RETURN CAN BE ESTABLISHED →YES.	Procedure Step 11
-----------	---	-------------------

SAT [] UNSAT []

<u>Standards</u>	<p>Operator confirms RCP Seal Water return parameters are satisfied and performs the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Operator momentarily depresses OPEN pushbutton for 1-CH-MOV-1380 and verifies valve indicates open (RED LIGHT LIT). <input type="checkbox"/> Operator momentarily depresses OPEN pushbutton for 1-CH-MOV-1381 and verifies valve indicates open (RED LIGHT LIT).
------------------	--

<p><u>Notes/Comments</u></p>

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

12	CHECK CHARGING AND LETDOWN REQUIRED FOR RCS PRESSURE AND LEVEL CONTROL → YES	Procedure Step 12
----	--	-------------------

SAT [] UNSAT []

<u>Standards</u>	Operator determines that Charging and Letdown are required to control RCS pressure.
------------------	---

Notes/Comments

<u>Cue(s)</u>	Assume that another operator will perform the remainder of this attachment. This completes the JPM.
---------------	---

>>>> END OF EVALUATION <<<<

STOP TIME _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

SIMULATOR SETUP

TASK

Terminate spurious SI in accordance with 1-AP-0.1.

CHECKLIST

NOTE: An instructor should be assigned as an extra operator on the floor to silence any unrelated nuisance alarms. Nuisance alarms can also be overridden as part of the IC shoot if desired.

_____ Recall IC #157 (Mode 5, solid, RHR in-service)

_____ Override close pushbutton (OFF) for 1-SI-MOV-1867B

_____ Ensure Charging & Letdown are setup with 1-CH-FCV-1122 in manual and adjusted such that 1-CH-PCV-1145 is controlling at ~50% demand in auto.

_____ **Once operator has assumed Unit responsibility, perform the following to initiate the spurious SI:**

Spurious SI: Trigger 1 / Spurious SI Train A/B

_____ **Delete the malfunction after triggering to allow SI to be reset by the Operator per Step 2 of the AP.**



As Aux Bldg Operator, acknowledge order to open breaker **1-EE-BKR-1J1-2N C3** for 1-SI-MOV-1867B and locally close the valve;

De-energize the MOV : Trigger 2 / SIMOV867B_RACKIN

Close the MOV: Trigger 3 / SIMOV867B



**After approximately 2 minutes, report back that the action is complete.
(Terminating SI is a time critical action)**

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit 1 is at 100% power and stable.

There are no limiting actions and there is no equipment out-of-service.

INITIATING CUE

You are directed to perform 1-PT-17.1, Control Rod Operability.

The following activities have been completed in preparation for performance of the PT:

- The Bank Overlap Counter reading is 614
- Predictive Analysis was contacted and will NOT be taking thermography data.
- HP has been notified of the potential for dose rates to increase.
- An additional set of PRZR heaters has been locked on.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Perform Control Rod Operability PT.

TASK STANDARDS

Candidate begins performance of Control Rod Operability PT IAW 1-PT-17.1; while withdrawing CBD two (2) CBB rods will drop without an automatic reactor trip; candidate will perform IOA Step 1, of 1-AP-1.2, Dropped Rod, and manually trip the reactor.

K/A REFERENCE:

001A2.11, Ability to (a) predict the impacts of the following malfunction or operations on the CRDS- and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Situations requiring a reactor trip. (RO 4.4 / SRO 4.7)

ALTERNATE PATH:

YES

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit 1 is at 100% power and stable.

There are no limiting actions and there is no equipment out-of-service.

INITIATING CUE

You are directed to perform 1-PT-17.1, Control Rod Operability.

The following activities have been completed in preparation for performance of the PT:

- The Bank Overlap Unit reading is 614
- Predictive Analysis was contacted and will NOT be taking thermography data.
- HP has been notified of the potential for dose rates to increase.
- An additional set of PRZR heaters has been locked on.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 1-PT-17.1 \(SRO step signed off\)](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Evaluators Note: Steps that appear in brackets [] are Immediate Operator Action (IOA) steps and are expected to be performed from memory.

Step / Action		Notes / Comments
1	Reviews ICs and P&Ls	
Procedure Step	Section 3.0 & 4.0	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reviews ICs and P&Ls of procedure.	

Step / Action		Notes / Comments
2	Record bank overlap counter reading	
Procedure Step	6.1.1	
	SAT [] UNSAT []	
	Note: information provided in ICs	
<u>Standards</u>	Candidate records 614.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Record Control Bank D step counter Reading	
Procedure Step	6.1.2	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate records 230.	

Step / Action		Notes / Comments
4	Calculate difference	
Procedure Step	6.1.3	
Critical Step	SAT [] UNSAT []	
Critical Step because if candidate calculates the incorrect value they will not be able to continue with the task		
<u>Standards</u>	Candidate calculates 384	

Evaluators Note: Step 6.1.4 is N/A (information provided in ICs)
 Step 6.1.5 is already signed off by the SRO (information provided in ICs)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Determine correct Subsection.	
Procedure Step	6.1.6	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate determines Subsection 6.2 based on plant conditions	

Step / Action		Notes / Comments
6	Verify Bank Overlap Counter correct for plant conditions.	
Procedure Step	6.2.1	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate N/As this step since the counter is reading the required value (384 steps)	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Test Control Bank D	
Procedure Step	6.2.2a-c	
Critical Step*	SAT [] UNSAT []	
<p>* ONLY those item(s) in BOLD type are critical to this element</p>		
<u>Standards</u>	Candidate performs the following: <ul style="list-style-type: none"> <input type="checkbox"/> checks that control bank D step counters both read the same. <input type="checkbox"/> Place Bank Selector switch in CBD <input type="checkbox"/> Record position for CBD 	

Evaluators Note: Step 6.2.2.d is N/A (based on plant conditions)

Step / Action		Notes / Comments
8	Complete data sheet for CBD Initial Position.	
Procedure Step	6.2.2.e	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate records data	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
9	Insert CBD 18 steps	
Procedure Step	6.2.2.f	
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate inserts CBD to 212 steps	

Step / Action		Notes / Comments
10	Observe IRPIs and record data.	
Procedure Step	6.2.2.g & 6.2.2.h	
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate observes that IRPIs responded properly and records data	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Evaluators Note: once candidate begins CBD withdrawal two (2) CBB rods will drop requiring the candidate to suspend performance of the PT and implement 1-AP-1.2, Dropped Rod

Step / Action		Notes / Comments
11	Return CBD to previous position.	
Procedure Step	6.2.2.i	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate begins withdrawing CBD to 230 steps.	

Step / Action		Notes / Comments
12	ALTERNATE PATH Verify only ONE control rod dropped (NO)	
Procedure Step	1-AP-1.2, Step [1]	
CUE: <u>WHEN</u> candidate states that they have completed the IOAs of 1-E-0, <u>THEN</u> acknowledge 1-E-0 IOAs complete and tell them this completes your task.		
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate identifies that two (2) rods have dropped and manually trips the reactor.	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Simulator Booth Instructions

- 1 ____ Recall 100% IC
 - 2 ____ Ensure both non-emergency group (2 and 5) backup heaters are locked on
 - 3 ____ Pre-load two control bank B rods drop (J7 & J9 **Trigger 1**)
 - 4 ____ Pre-load override RBL OFF for J9
 - 5 ____ Pre-load reactor fails to trip automatically (insurance)
 - 6 ____ Using mon-screen set nik403=10 (neg rate trip bistable sensor)
- → → **WHEN** operator begins withdrawing control rods to restore CBD to ARO, **THEN** actuate Trigger 1.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit is at 100% power and stable.

The POD has an activity to stroke 1-RC-LCV-1460A

INITIATING CUE

To support the POD activity, the Shift Manager has directed you to place Excess Letdown in service IAW 1-OP-8.5, Operation of Excess Letdown, Sub-section 5.1

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Place Excess Letdown in service.

TASK STANDARDS

Excess Letdown is placed in service IAW 1-OP-8.5.

K/A REFERENCE:

004A4.06, Ability to manually operate and/or monitor in the control room: Letdown isolation and flow control valves.
(RO 3.6 / SRO 3.1)

ALTERNATE PATH:

N/A

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit is at 100% power and stable.

The POD has an activity to stroke 1-RC-LCV-1460A

INITIATING CUE

To support the POD activity, the Shift Manager has directed you to place Excess Letdown in service IAW 1-OP-8.5, Operation of Excess Letdown, Sub-section 5.1

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 1-OP-8.5, Operation of Excess Letdown](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Step / Action		Notes / Comments
1	Verify ICs and review P&Ls.	
Procedure Step	5.1 & 5.2	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reviews Section 3.0 & 4.0	

Step / Action		Notes / Comments
2	Verify sufficient Component Cooling Water is supplied to Excess Letdown Heat Exchanger.	
Procedure Step	5.1.3	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate confirms that "G" Panel E-2, EXC LTDN HX CC OUT LO FLOW, is NOT LIT.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Close 1-CH-HCV-1137, Excess Letdown Pressure Control Valve.	
Procedure Step	5.1.4	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate verifies 1-CH-HCV-1137 is at 0% demand..	

Step / Action		Notes / Comments
4	Verify Seal Water Return Valves OPEN.	
Procedure Step	5.1.5	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate confirms that 1-CH-MOV-1380 and 1-CH-MOV-1381 are open	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Energize Loop Drain Valves.	
Procedure Step	5.1.6	
Note: Booth operator will acknowledge order and call back when action is complete.		
Critical Step*	SAT [] UNSAT []	
Note: Critical because the operator must direct this action to establish the required flowpath in order to complete the Task.		
<u>Standards</u>	Candidate directs operator to close 1-EP-CB-26B Bkr #22.	

Step / Action		Notes / Comments
6	Divert Excess Letdown to PDTT.	
Procedure Step	5.1.7	
Critical Step*	SAT [] UNSAT []	
Note: Critical because if this action is not performed there is a potential to cause a reactivity transient and/or render Safety Related ESF equipment inoperable (running Charging Pump).		
<u>Standards</u>	Candidate places selector switch for 1-CH-HCV-1389, Excess Letdown Flow Divert, in the PDTT position	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Delete F0134A (Letdown flow) from processing.	
Procedure Step	5.1.8	
	SAT [] UNSAT []	
CUE: Tell candidate the STA has deleted the point from processing.		
<u>Standards</u>	Candidate acknowledges	

Step / Action		Notes / Comments
8	Align Loop Drains.	
Procedure Step	5.1.9	
Critical Step*	SAT [] UNSAT []	
<u>Standards</u>	Candidate opens ONLY 1 valve IAW Sub-step 5.1.9a by placing only 1 control switch for 1-RC-HCV-1557A OR 1-RC-HCV-1557B OR 1-RC-HCV-1557C in the OPEN position	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
9	Open Excess Letdown HX Isolation Valve.	
Procedure Step	5.1.10	
Critical Step*	SAT [] UNSAT []	
<u>Standards</u>	Candidate places control switch for 1-CH-HCV-1201 in the OPEN position.	

Step / Action		Notes / Comments
10	Initiate Excess Letdown.	
Procedure Step	5.1.11	
Critical Step*	SAT [] UNSAT []	
<u>Standards</u>	Candidate increases demand on 1-CH-HCV-1137.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
11	Verify acceptable parameters.	
Procedure Step	5.1.12	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate confirms the following: 1-CH-TI=1139 < 195°F 1-CH-PI=1138 < 130 psig 1-CC-TI=151 < 140°F	

Step / Action		Notes / Comments
12	Align Excess Letdown to VCT.	
Procedure Step	5.1.13	
	CUE: <u>WHEN</u> candidate identifies 1-DG-LI-101, <u>AND</u> that they are waiting for a 10% level change <u>THEN</u> tell the candidate to assume the required level change has occurred.	
Critical Step*	SAT [] UNSAT []	
<u>Standards</u>	Candidate places selector switch for 1-CH-HCV-1389, Excess Letdown Flow Divert, in the VCT position	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
13	Maintain Pressurizer Level.	
Procedure Step	5.1.14	
CUE: Tell the candidate that another operator will continue with the procedure.		
	SAT [] UNSAT []	
<u>Standards</u>	Candidate acknowledges.	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Simulator Booth Instructions

- 1 ____ Recall 100% IC
- 2 ____ If desired Pre-load closing loop drain valve breaker
- 3 ____ When directed by operator to close 1-EP-CB-26B Bkr #22 (JPM Element 5) then acknowledge direction, close bkr (using pre-load or Page RC1 of Extremeview), and report back action complete.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit 1 is at 100% power and stable.

There are no limiting actions and there is no equipment out-of-service.

INITIATING CUE

Maintain stable plant conditions.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Respond to Power Range N-44 malfunction.

TASK STANDARDS

Candidate responds to N-44 malfunction IAW 1-AP-4.3 and actuates a manual reactor trip based on a full load rejection.

K/A REFERENCE:

015A2.02, Ability to (a) predict the impacts of the following malfunctions or operations on the NIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Faulty or erratic operation of detectors or compensating components.
(RO 3.1 / SRO 3.5)

ALTERNATE PATH:

N/A

TASK COMPLETION TIMES

Validation Time = 15 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit 1 is at 100% power and stable.

There are no limiting actions and there is no equipment out-of-service.

INITIATING CUE

Maintain stable plant conditions.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 1-AP-4.3](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Evaluators Note: Steps that appear in brackets [] are Immediate Operator Action (IOA) steps and are expected to be performed from memory.

Step / Action		Notes / Comments
1	Stop power increase (YES).	
Procedure Step	[1]	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate verbalizes that power is not increasing	

Step / Action		Notes / Comments
2	Verify N-44 NOT failed - NO. (RNO Step)	<p>Note: Critical per NUREG-1021 since a failure to implement this Abnormal Procedure correctly will result in an unnecessary actuation of the RPS and ESF systems.</p>
Procedure Step	[2]	
Cue:	Once candidate states they have completed the IOAs provide them a copy of 1-AP-4.3 and tell them that the Unit Supervisor requests you perform 1-AP-4.3	
Critical Step*	SAT [] UNSAT []	
Note:	Placing Rods in manual is the ONLY critical portion of this element since Main Feed Reg Bypass Valves are already in Manual (normal plant configuration at 100% power).	
<u>Standards</u>	Candidate places Rod Control in MANUAL and verifies Main Feed Reg Bypass Valves in Manual.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Verify 3 Power Range Instruments Operable (YES).	
Procedure Step	3	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate observes that N-41, N-42, and N-43 are indicating properly.	

Step / Action		Notes / Comments
4	Verify Unit in Mode 1 or 2 (YES).	
Procedure Step	4	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate confirms that power is ~100% (by definition Mode 1)	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Check Reactor Trip System Interlocks.	
Procedure Step	5	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate verifies the following annunciators NOT LIT: Panel "P" G-2 Panel "P" D-2 Panel "P" F-1	

Step / Action		Notes / Comments
6	Check Tavg within 1.5°F of Tref.	
Procedure Step	6	
Cue: IF Tavg & Tref are NOT within 1.5°F, THEN tell them that Operations Management is still discussing the method to be used to restore Tavg & Tref and the Unit Supervisor directs you to flag the step and continue with 1-AP-4.3.		
	SAT [] UNSAT []	
<u>Standards</u>	Candidate either 1) confirms Tavg & Tref are within 1.5°F <u>OR</u> 2) acknowledges cue	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Maintain RILs and AFD limits.	
Procedure Step	7	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate verifies the following annunciators NOT LIT: Panel "A" H-1, H-2, H-3, & H-4 Panel "A" H-7	

Step / Action		Notes / Comments
8	Remove failed channel (N-44) from service.	
Procedure Step	8.a & 8.b	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate performs the following operations: a) on comparator and rate drawer select N-44 b) on Misc Cntrl & ind drawer select N-44 for: <ul style="list-style-type: none"> • Rod Stop Bypass • Upper Section • Lower Section 	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
9	Remove failed channel (N-44) from service (cont'd).	
Procedure Step	8.c	
CUE: When asked, as the SRO tell the candidate it is NOT desired to remove the Instrument power fuses.		
Critical Step*	SAT [] UNSAT []	
<u>Standards</u>	Candidate removes control power fuses for N-44	

Evaluators Note: Once candidate has pulled control power fuses and comes back around the Benchboard, the Booth Operator will trigger the full load rejection.

Step / Action		Notes / Comments
10	ALTERNATE PATH STEP Transition to 1-E-0	
Procedure Step	AR-D-B1	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate suspends performance of 1-AP-4.3 and enters 1-E-0 based on annunciator response for valid reactor trip signal.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
11	Manually trip Reactor.	
Procedure Step	1-E-0, Step [1 - 4]	
CUE: <u>WHEN</u> candidate states that they have completed the IOAs of 1-E-0, <u>THEN</u> acknowledge 1-E-0 IOAs complete and tell them this completes your task.		
Critical Step	SAT [] UNSAT []	
Note: Only those items that are BOLDED are critical to this element.		
<u>Standards</u>	Candidate performs the following: <ol style="list-style-type: none"> 1) Manually trip reactor 2) Manually trip turbine AND Reset Reheaters 3) Verify power to Emergency Busses 4) Check SI 	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Simulator Booth Instructions

- 1 ____ Recall 100% IC
- 2 ____ Pre-load N-44 upper detector fails high (**trigger 1**)
- 3 ____ Pre-load Rods Insert at max speed in auto (**trigger 1** with 3 second time delay)

Note: item 3 simulates an industry event where the large rapid power mismatch caused the power mismatch controller to go into saturation; after the drawer was removed from service operators attempted to return rod control to auto (as expected) but when doing so rods began to step (due to the controller saturation) and rods were returned to manual and had to be maintained in manual control until troubleshooting discovered and corrected the problem.

- 4 ____ Pre-load:
ATWS reactor fails to trip automatically
and
switch override 1-RC-PCV-1455C CLOSE
- 5 ____ Pre-load override valve position limiter LOWER ON (**trigger 2**)

→ →→ Actuate trigger 2 after element 9 when candidate comes back around the benchboard

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit startup from mode 5 to mode 4 is in progress

The Reactor Coolant System has been filled and vented per 1-OP-5.1.

Reactor coolant pump "C" is in operation

Hot-leg and cold-leg loop "A" stop valves are open

Conditions have been established for starting the "A" reactor coolant pump

Reactor Coolant System pressure is 350 psig

Reactor Coolant System temperature is 190°F

"A" station service bus is not being supplied from reserve station service

Pressurizer bubble is being used for Reactor Coolant System pressure control

Reactor coolant filters and a mixed-bed ion exchanger are in service

1-OP-5.2 has been completed through step 5.1.8

INITIATING CUE

You are requested to start the "A" reactor coolant pump in accordance with 1-OP-5.2.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Start a Reactor Coolant Pump.

TASK STANDARDS

"A" RCP was started, then both RCPs are tripped when spurious closure of 1-RC-MOV-1380 causes loss of #1 Seal D/P.

K/A REFERENCE:

003-A1.01(RO 2.9 / SRO 2.9)

ALTERNATE-PATH

YES.

TASK COMPLETION TIMES

Validation Time = 15 minutes

Start Time = _____

Actual Time = _____ minutes

Stop Time = _____

PERFORMANCE EVALUATION

Rating

SATISFACTORY

UNSATISFACTORY

Candidate (Print)

Evaluator (Print)

Evaluator's Signature /
Date

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit startup from mode 5 to mode 4 is in progress

The Reactor Coolant System has been filled and vented per 1-OP-5.1

Reactor coolant pump "C" is in operation

Hot-leg and cold-leg loop "A" stop valves are open

Conditions have been established for starting the "A" reactor coolant pump

Reactor Coolant System pressure is 350 psig

Reactor Coolant System temperature is 190°F

"A" station service bus is not being supplied from reserve station service

Pressurizer bubble is being used for Reactor Coolant System pressure control

Reactor coolant filters and a mixed-bed ion exchanger are in service

1-OP-5.2 has been completed through step 5.1.8

INITIATING CUE

You are requested to start the "A" reactor coolant pump in accordance with 1-OP-5.2.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in the electrical laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 1-OP-5.2 signed off through step 5.1.8](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

PERFORMANCE STEPS

START TIME _____

1	Start "A" Reactor Coolant Pump Oil Lift Pump	Procedure Step 5.1.9
---	--	-------------------------

CRITICAL STEP	SAT [] UNSAT []
----------------------	-------------------

<u>Standards</u>	Candidate momentarily places the control switch for "A" Reactor Coolant Pump Oil Lift Pump to START
------------------	---

Notes/Comments: Applicant may review precautions and limitations prior to beginning task.

2	Verify that the "A" reactor coolant pump oil pressure start permissive indicating light is lit.	Procedure Step 5.1.10
---	---	--------------------------

SAT [] UNSAT []

<u>Standards</u>	Oil pressure start permissive white indicating light is verified lit
------------------	--

Notes/Comments:

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

3	Verify that the "A" reactor coolant pump annunciators are not lit.	Procedure Step 5.1.11
---	--	--------------------------

SAT UNSAT

<u>Standards</u>	The following RCP annunciators are verified NOT lit: C-C1, C-E1, C-F1, C-G1, C-H1
------------------	--

Notes/Comments: Step 5.1.12 is N/A

4	Ensure the Chemical and Volume Control System is operating	Procedure Step 5.1.13
---	--	--------------------------

SAT UNSAT

<u>Standards</u>	CVCS parameters are verified within specifications: <ul style="list-style-type: none">Seal injection flow rate is between 6 gpm and 10 gpmSeal injection (VCT) temperature is between 60°F and 150°FVCT pressure is between 15 psig and 65 psig
------------------	---

Notes/Comments

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

5	Verify the Component Cooling Water System is operating	Procedure Step 5.1.14a
---	--	---------------------------

SAT UNSAT

<u>Standards</u>	CCW parameters are verified within specifications: <ul style="list-style-type: none">• Upper oil cooler flow is between 140 and 180 gpm• Stator cooler flows are between 100 and 140 gpm• Lower oil cooler flows is between 4 and 10 gpm• Thermal Barrier flow is between 40 and 60 gpm• CC HX outlet temperature is 105°F or less
------------------	--

Notes/Comments: Step 5.1.14b is N/A

6	Ensure that RCS pressure is above the required value	Procedure Step 5.1.15b
---	--	---------------------------

SAT UNSAT

<u>Standards</u>	RCS pressure is verified above 280 psig
------------------	---

Notes/Comments: Step 5.1.15a is N/A based on Initial Conditions of the JPM

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

7	Ensure no pressurizer spray flow exists during the RCP start.	Procedure Step 5.1.16
---	---	--------------------------

SAT UNSAT

<u>Standards</u>	All spray valves are closed
------------------	-----------------------------

Notes/Comments

8	Verify that the bearing lift pump has operated for at least two minutes.	Procedure Step 5.1.17
---	--	--------------------------

SAT UNSAT

<u>Standards</u>	RCP "A" bearing lift pump is verified running at least two minutes
------------------	--

Notes/Comments: Step 5.1.18 is N/A based on plant conditions.

9	Ensure that all personnel are clear of the reactor coolant pump to be started.	Procedure Step 5.1.19
---	--	--------------------------

SAT UNSAT

<u>Standards</u>	RCP start is announced on the plant paging system
------------------	---

Notes/Comments

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

10	Start the "A" Reactor Coolant Pump, 1-RC-P-1A	Procedure Step 5.1.20
----	---	--------------------------

CRITICAL STEP	SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>
----------------------	---

<u>Standards</u>	Control switch for 1-RC-P-1A is momentarily placed in START
------------------	---

Notes/Comments

11	Verify that reactor coolant flow is increasing.	Procedure Step 5.1.21
----	---	--------------------------

SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

<u>Standards</u>	Flow in "A" Reactor Coolant Loop is verified increasing by observing the following: <ul style="list-style-type: none"> • 1-RC-FI-1414 • 1-RC-FI-1415 • 1-RC-FI-1416
------------------	--

Notes/Comments

12	Verify that annunciator 1A-E5, RCP 1A VIBRATION ALERT/DANGER, is not lit.	Procedure Step 5.1.22
----	---	--------------------------

SAT <input type="checkbox"/> UNSAT <input type="checkbox"/>

<u>Standards</u>	Annunciator is verified NOT lit
------------------	---------------------------------

Notes/Comments:

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

13	Respond to decreasing #1 Seal D/P ALTERNATE PATH STEP	Procedure Step 1C-G5
----	---	-------------------------

SAT [] UNSAT []

<u>Standards</u>	Candidate observes seal D/P indications and determines that both running RCPs are affected.
------------------	---

Notes/Comments

14	Stop RCPs	Procedure Step See Note
----	-----------	----------------------------

CRITICAL STEP	SAT [] UNSAT []
----------------------	-------------------

<u>Standards</u>	Control switches for 1-RC-P-1A & 1-RC-P-1C are momentarily placed in STOP (although not required it is acceptable for the candidate to place the control switches in P-T-L)
------------------	---

Notes/Comments This action may be performed from memory.

>>>> END OF EVALUATION <<<<

STOP TIME _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

SIMULATOR SETUP

CHECKLIST

- Recall the IC for mode 5, 350 psig, 180°F, bubble in the pressurizer
- Ensure initial conditions match IC Sheet
- Pre-load switch override 1-CH-MOV-1380 Close Pushbutton ON (**Trigger 1**)

→ → Actuate **Trigger 1** shortly after the "A" RCP is started.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Unit is at 100% power and stable.

INITIATING CUE

You are requested to raise PRT to between 10-11psig using 1-OP-5.7, Sub-section 5.4.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Raise PRT pressure by adding nitrogen.

TASK STANDARDS

PRT pressure is raised to between 10-11psig IAW 1-OP-5.7, Section 5.4.

K/A REFERENCE:

007A1.02, Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining Quench Tank pressure.
(RO 2.7 / SRO 2.9)

ALTERNATE PATH:

N/A

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Unit is at 100% power and stable.

INITIATING CUE

You are requested to raise PRT to between 10-11psig using 1-OP-5.7, Sub-section 5.4.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 1-OP-5.7](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Step / Action		Notes / Comments
1	Verify ICs and review P&Ls.	
Procedure Step	5.4.1 & 5.4.2	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reviews Section 3.0 & 4.0	

Step / Action		Notes / Comments
2	Verify nitrogen is aligned to the supply header.	
Procedure Step	5.4.3	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate confirms nitrogen is aligned.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Reduce demand on 1-SI-HIC-100 to 0%.	
Procedure Step	5.4.4	
	SAT [] UNSAT []	
<u>Standards</u>	Candidate turns potentiometer for 1-SI-HIC-100 counter-clockwise to obtain 0% demand.	

Step / Action		Notes / Comments
4	Open 1-SI-TV-100.	
Procedure Step	5.4.5	
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate opens 1-SI-TV-100 by momentarily depressing 1-SI-TV-100A AND B OPEN pushbuttons.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Open 1-RC-HCV-1550.	
Procedure Step	5.4.6	
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate opens 1-RC-HCV-1550 by placing control switch to OPEN.	

Step / Action		Notes / Comments
6	Open 1-SI-HCV-1898.	
Procedure Step	5.4.7	
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate opens 1-SI-HCV-1898 by momentarily depressing the OPEN pushbuttons.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Secure raising PRT pressure.	
Procedure Step	5.4.8 a & b	
Critical Step*	SAT [] UNSAT []	
NOTE: Since valves are in series it is only critical to close ONE of the valves.		
<u>Standards</u>	<p>WHEN PRT pressure is 10-11 psig, THEN candidate secures lineup by performing the following:</p> <ol style="list-style-type: none"> 1) close 1-SI-HCV-1898 by momentarily depressing the CLOSE pushbutton <p style="text-align: center;"><u>AND</u></p> <ol style="list-style-type: none"> 2) close 1-RC-HCV-1550 by placing the control switch in CLOSE. 	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
8	Secure nitrogen lineup.	
Procedure Step	5.4.8 c	
	SAT [] UNSAT []	
NOTE: Sub-step 5.4.8.d is N/A (based on the Initial Conditions of the JPM).		
<u>Standards</u>	<p>Candidate secures Nitrogen lineup by performing the following:</p> <ol style="list-style-type: none"> 1) close 1-SI-TV-100 by momentarily depressing the CLOSE pushbutton for 1-SI-TV-100A OR B. <p style="text-align: center;"><u>AND</u></p> <ol style="list-style-type: none"> 2) Raises output of 1-SI-HIC-100 by turning the potentiometer clockwise to obtain 100% demand. 	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
9	Report task completion to Unit Supervisor.	
Procedure Step	N/A	
Cue: Acknowledge task completion.		
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reports that PRT pressure has been raised IAW 1-OP-5.7	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Simulator Booth Instructions

1 ____ Recall 100% IC.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

Fire has occurred in the Control Room.

INITIATING CUE

The WCCS directs you to perform 0-FCA-1, Attachment 12, steps 1-3.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Transfer Aux Monitoring Panel and Remote Monitoring Excore Neutron Flux Detectors to backup power.

TASK STANDARDS

The Aux Monitoring Panel and Remote Monitoring Excore Neutron Flux Detectors for BOTH units are transferred to backup IAW 0-FCA-1, Attachment 12, Steps 1-3.

K/A REFERENCE:

067AA2.16, Ability to determine and interpret the following as they apply to the Plant Fire on Site: Vital equipment and control systems to be maintained and operated during a fire (RO 3.3 / SR 4.0)

ALTERNATE PATH:

NO

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

Fire has occurred in the Control Room.

INITIATING CUE

The WCCS directs you to perform 0-FCA-1, Attachment 12, steps 1-3.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

[Copy of 0-FCA-1, Att.12, to be provided to applicant.](#)

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Step / Action		Notes / Comments
1	Obtain keys.	
Procedure Step	Att. 12, step 1	
See Note Below		
Cue: You have the keys you described.		
	SAT [] UNSAT []	
Note: Provide cue once candidate describes the location (how) they would get the required keys.		
<u>Standards</u>	Candidate describes how to obtain the following keys: 10, 11, 12, OR 13 AND 73 AND 74	

Step / Action		Notes / Comments
2	Place disconnect switch on 2-EB-CB-001 to OFF.	
Procedure Step	Att. 12, step 2a	
Cue: The disconnect switch is positioned as you described it.		
Critical Step	SAT [] UNSAT []	
Note: Administrative lock key is required to operate this switch.		
<u>Standards</u>	2-EB-CB-001 disconnect switch is placed in OFF.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Verify 2-VB-INV-01 supplying load	
Procedure Step	Att. 12, step 2b	
Cue: The indication you described is as you see it now.		
	SAT [] UNSAT []	
<u>Standards</u>	2-VB-INV-01 Inverter supplying load light is verified LIT.	

Step / Action		Notes / Comments
4	Place transfer switch in backup.	
Procedure Step	Att. 12, step 2c	
Cue: The switch appears as you described it.		
Critical Step	SAT [] UNSAT []	
Note: Key 73 is required to operate this switch.		
<u>Standards</u>	1-XFR-SW-202 on panel 2-EI-CB-202 is positioned to backup.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Place disconnect switch on 1-EB-CB-001 to OFF.	
Procedure Step	Att. 12, step 3a	
Cue: The disconnect switch is positioned as you described it.		
Critical Step	SAT [] UNSAT []	
Note: Administrative lock key is required to operate this switch.		
<u>Standards</u>	1-EB-CB-001 disconnect switch is placed in OFF.	

Step / Action		Notes / Comments
6	Verify 1-VB-INV-01 supplying load	
Procedure Step	Att. 12, step 3b	
Cue: The indication you described is as you see it now.		
	SAT [] UNSAT []	
<u>Standards</u>	1-VB-INV-01 Inverter supplying load light is verified LIT.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Place transfer switch in backup.	
Procedure Step	Att. 12, step 2c	
Cue: The switch appears as you described it.		
Critical Step	SAT [] UNSAT []	
Note: Key 74 is required to operate this switch.		
<u>Standards</u>	1-XFR-SW-202 on panel 2-EI-CB-202 is positioned to backup.	

Step / Action		Notes / Comments
8	Report status to WCCs.	
Procedure Step	N/A	
Cue: Acknowledge completion of 0-FCA-0.1, Attachment 12, Steps 1-3.		
	SAT [] UNSAT []	
<u>Standards</u>	WCCS is notified that 0-FCA-0.1, Attachment 12, Steps 1-3 are complete.	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

The OATC attempted to trip UNIT 2 and the reactor DID NOT trip.

INITIATING CUE

You have been directed to trip **UNIT 2** locally IAW Attachment 4, Remote Reactor Trip, of 2-FR-S.1, Response to Nuclear Power Generation/ATWS.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Trip the reactor by opening the reactor trip breakers or the rod-drive motor generator breakers locally (2-FR-S.1).

TASK STANDARDS

The reactor is tripped by locally tripping MG set supply breakers in 307 Switchgear.

K/A REFERENCE:

029-EA1.12, Ability to operate and monitor the following as they apply to a ATWS: M/G set power supply and reactor trip breakers (RO 4.1 / SRO 4.0)
(Note: This task is categorized as Safety Function 1 per ES-401-2)

ALTERNATE PATH:

YES

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

The OATC attempted to trip UNIT 2 and the reactor DID NOT trip.

INITIATING CUE

You have been directed to trip **UNIT 2** locally IAW Attachment 4, Remote Reactor Trip, of 2-FR-S.1, Response to Nuclear Power Generation/ATWS.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

Copy of 2-FR-S.1, Att.4, to be provided to applicant.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Evaluators Note: The candidate may perform actions 1-4, checking for a response after each individual action is performed, or may elect to perform all of the actions (1-4) then check the responses afterwards, either method is acceptable.

Step / Action		Notes / Comments
1	Locally trip the reactor from the rod drive room.	
Procedure Step	Att. 4, step 1a	
Cue: The breaker indication is how you see it now.		
	SAT [] UNSAT []	
Note: Bypass breakers are normally racked in and open. Pushbuttons on the bypass breakers DO NOT have to be depressed PROVIDED they are verified OPEN (green OPEN mechanical flag showing).		
<u>Standards</u>	TRIP pushbuttons for the Reactor Trip and Reactor Trip Bypass breakers are depressed.	

Step / Action		Notes / Comments
2	Put both M-G Set Generator Output Breakers control switches to TRIP.	
Procedure Step	Att. 4, step 1a (cont'd)	
Cue: The breaker indication is how you see it now.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator sets are placed in TRIP.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Press the TRIP buttons for both M-G Set Generator Output Breakers.	
Procedure Step	Att. 4, step 1a (cont'd)	
Cue: The breaker indication is how you see it now.		
	SAT [] UNSAT []	
<u>Standards</u>	Depresses the TRIP push-button for each motor generator output breakers.	

Step / Action		Notes / Comments
4	Put both M-G Set Motor Supply Breakers control switches to TRIP.	
Procedure Step	Att. 4, step 1a (cont'd)	
Cue: The breaker indication is how you see it now.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator set supply breakers are placed in TRIP.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Verify at least one of the following conditions satisfied: <ul style="list-style-type: none"> • All reactor trip and bypass breakers are open - NO • Both M-G set output breakers are open -NO • Both M-G set supply breakers are open – NO 	
Procedure Step	Att. 4, step 1b	
Cue: The breaker indication is how you see it now (cue may not be necessary IF information was provided previously as the individual actions were performed).		
SAT [] UNSAT []		
NOTE: ALTERNATE PATH STEP		
<u>Standards</u>	Candidate proceeds to Step 3 based on the Response Not Obtained.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
6	Locally trip the reactor from the 307 Switchgear room.	
Procedure Step	Att. 4, step 3a	
Cue: SEE NOTE BELOW When the candidate describes the expected response for the actions (breaker changes state as indicated by the green OPEN mechanical flag) inform the candidate that the breaker shows a green OPEN flag.		
Critical Step	SAT [] UNSAT []	
NOTE: Each of these breakers has two TRIP pushbuttons. The right pushbutton ONLY works with the breaker in test. IF the candidate pushes ONLY the RIGHT pushbutton they should be cued that the breaker appears as they see it now (i.e. no change of state occurs so the breaker remains closed)		
Standards	LEFT Mechanical TRIP pushbutton for BOTH M-G set motor supply breakers are depressed: <ul style="list-style-type: none"> • 2-EP-BKR-24A1-3, 2-ED-MG-1A Rod Drive M-G Set Motor Supply Breaker. • 2-EP-BKR-24C2-12, 2-ED-MG-1B Rod Drive M-G Set Motor Supply Breaker. 	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Notify the control room operator of status of the rod power supply breakers.	
Procedure Step	Att. 4, step 3b	
CUE: Acknowledge report and inform candidate that their task is complete.		
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reports status of Rod Drive MG Set power supply breakers to the Control Room.	

END OF EVALUATION

Stop Time: _____

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

INITIAL CONDITIONS

An unisolable leak has been identified on the Unit 2 CC supply header.

INITIATING CUE

You have been directed by the WCCS to split CC IAW 1-AP-15, Attachment 5.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

TASK

Align CC system for split operations (1-AP-15).

TASK STANDARDS

The CC system cross-connects valves are closed and common loads are aligned to Unit 1.

K/A REFERENCE:

026AA2.03, Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: The valve lineups necessary to restart the CCWS while bypassing the portion of the system causing the abnormal condition.
(RO 2.6 / SRO 2.9)
(Note: CC is a shared system)

ALTERNATE PATH:

NO

TASK COMPLETION TIMES

Validation Time = 10 minutes Start Time = _____

Actual Time = _____ minutes Stop Time = _____

PERFORMANCE EVALUATION

Rating SATISFACTORY UNSATISFACTORY

Candidate (Print) _____

Evaluator (Print) _____

Evaluator's Signature / Date _____

EVALUATOR'S COMMENTS

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

READ THE APPLICABLE INSTRUCTIONS TO THE CANDIDATE

Instructions for Simulator JPMs

I will explain the initial conditions, and state the task to be performed. All control room steps shall be performed for this JPM, including any required communications. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

Instructions for In-Plant JPMs

I will explain the initial conditions, and state the task to be performed. All steps, including any required communications, shall be simulated for this JPM. Under no circumstances are you to operate any plant equipment. I will provide initiating cues and reports on other actions when directed by you. Ensure you indicate to me when you understand your assigned task. To indicate that you have completed your assigned task return the handout sheet I provided you.

INITIAL CONDITIONS

An unisolable leak has been identified on the Unit 2 CC supply header.

INITIATING CUE

You have been directed by the WCCS to split CC IAW 1-AP-15, Attachment 5.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

EVALUATION METHOD

Demonstration if conducted in the simulator or in a laboratory (use DEMONSTRATION cues)

Verbal-visual if conducted in the station or on a dead simulator (use VERBAL-VISUAL cues)

TOOLS AND EQUIPMENT

Copy of 1-AP-15, Attachment 5, to be provided to applicant.

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Start Time: _____

Step / Action		Notes / Comments
1	Close CC pump suction header cross-connect.	
Procedure Step	Att. 5, step 1	
Cue: The valve is positioned as you described it.		
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate closes 1-CC-40 by turning the valve handwheel in the clockwise direction.	

Step / Action		Notes / Comments
2	Close CC pump discharge header cross-connect.	
Procedure Step	Att. 5, step 2	
Cue: The valve is positioned as you described it.		
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate closes 1-CC-49 by turning the valve handwheel in the clockwise direction.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
3	Close CC heat exchanger cross-connect.	
Procedure Step	Att. 5, step 3	
Cue: The valve is positioned as you described it.		
Critical Step	SAT [] UNSAT []	
<u>Standards</u>	Candidate closes 1-CC-57 by turning the valve handwheel in the clockwise direction.	

Step / Action		Notes / Comments
4	Put both M-G Set Motor Supply Breakers control switches to TRIP.	
Procedure Step	Att. 5, step 4.a.1	
Cue: The valve is positioned as you described it.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator set supply breakers are placed in TRIP.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
5	Put both M-G Set Motor Supply Breakers control switches to TRIP.	
Procedure Step	Att. 5, step 4.a.2	
Cue: The valve is positioned as you described it.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator set supply breakers are placed in TRIP.	

Step / Action		Notes / Comments
6	Put both M-G Set Motor Supply Breakers control switches to TRIP.	
Procedure Step	Att. 5, step 4.a.3	
Cue: The valve is positioned as you described it.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator set supply breakers are placed in TRIP.	

North Anna Power Station

Job Performance Measure (Evaluation) - Operator Program

Step / Action		Notes / Comments
7	Put both M-G Set Motor Supply Breakers control switches to TRIP.	
Procedure Step	Att. 5, step 4.a.4	
Cue: The valve is positioned as you described it.		
	SAT [] UNSAT []	
<u>Standards</u>	Control switches for both motor generator set supply breakers are placed in TRIP.	

Step / Action		Notes / Comments
8	Notify the control room / WCCS.	
Procedure Step	Att. 4, step 5	
CUE: Acknowledge report and inform candidate that their task is complete.		
	SAT [] UNSAT []	
<u>Standards</u>	Candidate reports that 1-AP-15, Attachment 5 is complete.	

END OF EVALUATION

Stop Time: _____