

Task No.:

Task Title: Verify Valve Positions (Mockup) (ALT Path)

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

NOTE: This is an ALTERNATE PATH JPM requiring the student to identify a valve out of position, report the valve to the CRS and correct the mis-positioned valve.

Additional Program Information:

1. Appropriate Performance Locations: Mockup Facility
2. Appropriate Trainee Levels: SO / RO / SRO
3. Evaluation Method: _____ Simulate _____ Perform
4. Performance Time: 25 minutes
5. NRC K/A:

Directions to Examiner:

1. The Instructor will have to insure that the valves are aligned properly prior to presenting this JPM. **The TM-11 should be closed prior to starting this JPM**, which is the wrong position according to the valve lineup. The other valves should be in their correct alignment.
2. This JPM evaluates the trainee's ability to determine the position of two different types of valves.
2. Give the trainee his copy of the Directions to the Trainee (Attachment 1) and Attachment 2 TM Valve Lineup when ready to start the JPM.
3. Brief the trainee and tell the trainee to begin.
4. All blanks must be filled out with either initials or an "NP" for "not performed", and an explanation may also be written in the space if desired by the examiner.

NOTE: This JPM requires the instructor to position the valves on Attachment 2 to the desired position prior to performing this JPM.

Directions to Trainee:

When I tell you to begin, you are to complete the valve lineup on the TM system. The Valve lineup is partially completed and only requires three valves to be checked. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

You are to notify the CRS when you have completed the lineup.

Task No.:

=====

Task Title: Verify Valve Positions (Mockup) (ALT Path)

=====

General Conditions:

1. The plant is at rated power.
2. There are three valves on the attached lineup that still need to be verified.
3. The valves are located in a non-radioactive and non-contaminated area.

General References:

1. Attachment 2, TM System Valve Lineup
2. Procedure 0.31, Equipment Status Control

General Tools and Equipment:

1. Gloves
2. Hardhat

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The CRS has directed you to complete Attachment 2, TM System Lineup and report when you have completed that lineup.

Task No.:

Task Title: Verify Valve Positions (Mockup) (ALT Path)

Performance Checklist	Standards	Initial
NOTE: The valves to be verified are in classroom 7 of the MTF. The piping and valves are located on the mockup.		
NOTE: Any order can be used while performing the lineup.		
1. Obtain a copy of Attachment 2.	Obtains a copy of Attachment 2.	_____
2. Note that the three valves are not signed off on the list.	Notes that the three valves are TM-V20, TM-V22 and TM-V11.	_____
3. Locates first valve TM-V20.	The operator locates TM-V20 on the piping mockup.	_____
4. Verifies valve tag versus the lineup sheet.	The operator verifies that the valve number is correct with the lineup sheet (Attachment 2)	_____
5. Takes valve handwheel to closed.	The operator rotates the handwheel in the clockwise direction enough to verify stem movement.	_____*
6. Takes valve handwheel to open direction.	The operator rotates the valve handwheel in the counterclockwise direction until the valve is on the backseat.	_____*
7. Takes valve handwheel to closed direction.	The operator rotates the valve handwheel in the clockwise direction until the valve is off the backseat.	_____
8. Signs off Attachment 2.	The operator signs off Attachment for TM-V20.	_____
9. Locates next valve TM-V22.	The operator locates TM-V22 on the piping mockup.	_____

Task No.:

Task Title: Verify Valve Positions (Mockup) (ALT Path)

Performance Checklist		Standards	Initial
10.	Verifies valve tag versus the lineup sheet.	The operator verifies that the valve number is correct with the lineup sheet (Attachment 2)	_____
11.	Takes valve handwheel to closed.	The operator rotates the handwheel in the clockwise direction without excessive force and verifies no movement.	_____*
12.	Takes valve handwheel to open direction.	The operator rotates the valve handwheel in the counterclockwise direction until the handwheel is free moving.	_____
13.	Signs off Attachment 2.	The operator signs off Attachment for TM-V22.	_____
14.	Locates last valve TM-V11.	The operator locates TM-V11 on the piping mockup.	_____
15.	Verifies valve tag versus the lineup sheet.	The operator verifies that the valve number is correct with the lineup sheet (Attachment 2)	_____
NOTE: The operator may notice that the valve indicates that it is closed before operating it and may call the CRS for direction on how to proceed. CUE: As the CRS tell the operator to proceed with the lineup and when he is done the CRS will ensure that a notification is written to document the problem if one is found.			
16.	◆ Takes valve handwheel to closed.	The operator rotates the handwheel in the clockwise (Closed) direction and with normal force and notices that the handwheel and stem did not move. He may call the control room for direction on how to proceed. CUE: If called, as the CRS tell the operator to proceed with the lineup and when he is done the CRS will ensure that a notification is written to document the problem.	_____*
17.	Takes valve handwheel to open direction.	The operator rotates the valve handwheel in the counterclockwise direction until the valve is on the backseat.	_____*

Task No.:

Task Title: Verify Valve Positions (Mockup) (ALT Path)

Performance Checklist		Standards	Initial
18.	Takes valve handwheel to closed direction.	The operator rotates the valve handwheel in the clockwise direction until the valve is off the backseat.	_____
19.	Signs off Attachment 2.	The operator signs off Attachment for TM-V11 and notes a discrepancy in the comment section.	_____
20.	Notifies the CRS when the lineup is completed.	The operator contacts the CRS when he has completed the Lineup. CUE: As the CRS respond to the report.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to complete the valve lineup on the TM system. The Valve lineup is partially completed and only requires three valves to be checked. Before you start, I will state the general plant conditions, the initiating cues, and answer any questions you may have.

You are to notify the CRS when you have completed the lineup.

General Conditions:

1. The plant is at rated power.
2. There are three valves on the attached lineup that still need to be verified.
3. The valves are located in a non-radioactive and non-contaminated area.

Initiating Cue(s):

The CRS has directed you to complete Attachment 2, TM System Lineup and report when you have completed that lineup.

ATTACHMENT 2

VALVE NUMBER	DESCRIPTION	LOCATION	CONTROL LOCATION	NORMAL POSITION	PERFORMED BY	COMMENTS
TM-V17	TM Pump suction	TM Skid	Local	Closed	MAB	
TM-V18	TM discharge isolation	TM Skid	Local	Closed	MAB	
TM-V19	TM Pump suction	TM Skid	Local	Closed	MAB	
TM-V20	TM Check Valve V21 upstream isolation	TM Skid	Local	Open		
TM-V22	TM Check Valve V21 downstream isolation	TM Skid	Local	Closed		
TM-V11	TM keepfill isolation	TM Skid - above TM V21	Local	Open		
TM-V12	TM keepfill isolation	TM Skid - above TM V21	Local	Open	MAB	

Initials

Printed Name

Initials

Printed Name

MAB / Michael A. Barton

/

/

/

/

/

Task No.: 299015O0301

=====

Task Title: Perform RO Review of Daily Logs (Alt Path)

=====

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

NOTE: This is an ALTERNATE PATH JPM.

Additional Program Information:

1. Appropriate Performance Location: SIM
2. Appropriate Trainee level: RO
3. Evaluation Method: Perform
4. Performance Time: 10 minutes
5. NRC K/A 2.1.23 (3.9/4.0)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform an RO review of the daily logs.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.
5. Hand the candidate the correct ATTACHMENT 1.

Directions to Trainee:

When I tell you to begin, you are to perform an RO review of the daily logs. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

=====

Task No.: 299015O0301

=====

Task Title: Perform RO Review of Daily Logs (Alt Path)

=====

General Conditions:

1. The plant is operating at 100% power.
2. The 08:00 readings from PC-TR-24 are:

General References:

1. Procedure 6.LOG.601

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".
2. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

You are to fill out Attachment 15, Torus Average Temperature and Drywell Bulk Average Temperature, for Div I, using TR-24 and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

Task No.: 299015O0301

Task Title: Perform RO Review of Daily Logs (Alt Path)

SIMULATOR SET-UP

A. Materials required

None

B. Initialize the Simulator in any IC that will support full power operation (IC-18, 19 or 20 suggested)

Batch File name - JPM/3450XX

C. Change the Simulator conditions from those of the IC as follows:

1. Triggers

<u>Number</u>	<u>File Name</u>	<u>Description</u>
None		

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
None		N/A	N/A	N/A	N/A	N/A

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
None		N/A	N/A	N/A	N/A

Task No.: 299015O0301

Task Title: Perform RO Review of Daily Logs (Alt Path)

4. Overrides

<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
zaopctr240 (1)	Suppression Pool Temperature Recorder Pt 0	A	N/A	95	N/A
zaopctr240 (2)	Suppression Pool Temperature Recorder Pt 1	A	N/A	90	N/A
zaopctr240 (3)	Suppression Pool Temperature Recorder Pt 2	A	N/A	94	N/A
zaopctr240 (4)	Suppression Pool Temperature Recorder Pt 3	A	N/A	95	N/A
zaopctr240 (5)	Suppression Pool Temperature Recorder Pt 4	A	N/A	92	N/A
zaopctr240 (6)	Suppression Pool Temperature Recorder Pt 5	A	N/A	94	N/A
zaopctr240 (7)	Suppression Pool Temperature Recorder Pt 6	A	N/A	90	N/A
zaopctr240 (8)	Suppression Pool Temperature Recorder Pt 7	A	N/A	95	N/A

5. Panel Set-up

- a. Place Simulator in RUN.
- b. Run batch file JPM/3450XX
- c. Verify that the temperatures readings on PC-TR-24 are those inputted by running the batch file.

Note: If this JPM is to be performed more than once, snap the Simulator into an IC after the panel set-up is complete.

Task No.: 299015O0301

Task Title: Perform RO Review of Daily Logs (Alt Path)

Performance Checklist	Standards	Initials
1. Refer to 6.LOG.601.	Refers to 6.LOG.601 Attachment 15.	_____
2. Record Values.	Records PC-TR_24 reading on Attachment 15.	_____*
3. Sums OPERABLE points.	Sums reading from PC-TR-24 in appropriate block.	_____
4. Calculates Average Temperature.	Divides Sum by total number of OPERABLE points and records that value in appropriate block.	_____*
5. Performs a review of the Data.	While reviewing the data the trainee should indicate that the suppression pool temperature > 92°F, enter the Conditions and Required Actions of LCO 3.6.2.1 and contact Engineering to determine available instrument margin.	_____*
6. Notifies CRS.	The trainee informs the CRS that the Div I Average Torus Temperature is above 92°F, and that the Conditions and Required Actions of LCO 3.6.2.1 needs to be done. CUE: As the CRS, acknowledge the report.	_____*

NOTE: It is not necessary to sign the sign-off and review sheet.

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to enter the data on the appropriate log sheet and complete the RO review of the daily log. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

General Conditions:

1. The plant is operating at 100% power.
2. It is 08:00 and the readings from PC-TR-24 need to be entered into 6.LOG.601

Initiating Cues:

You are to fill out Attachment 15, Torus Average Temperature and Drywell Bulk Average Temperature, for Div I, using the data provided and complete an RO review of the log sheet per 6.LOG.601. Inform the CRS when the review is complete.

RO DATA SHEET

ATTACHMENT 15 TORUS AVERAGE TEMPERATURE AND DRYWELL BULK AVERAGE TEMPERATURE

LOC	INSTRUMENT NUMBER	0700-1000 READING	1900-2200 READING	OPERABILITY LIMIT	MAX Δ	MODES	ATT. 21 NOTES
VBD-J	PC-TR-24 POINT 0	MCO		≥ 4 RTDs OPERABLE with no 2 adjacent RTDs INOP	$\leq 6^{\circ}\text{F}^{(a)}$	1, 2, 3	27
VBD-J	PC-TR-24 POINT 1	MCO					
VBD-J	PC-TR-24 POINT 2	MCO					
VBD-J	PC-TR-24 POINT 3	MCO					
VBD-J	PC-TR-24 POINT 4	MCO					
VBD-J	PC-TR-24 POINT 5	MCO					
VBD-J	PC-TR-24 POINT 6	MCO					
VBD-J	PC-TR-24 POINT 7	MCO					
Sum of OPERABLE points for PC-TR-24		MCO		N/A	N/A	N/A	N/A
Divide sum of PC-TR-24 by total number of OPERABLE points		MCO		$\leq 92^{\circ}\text{F}^{(b)}$	N/A	1, 2, 3	57

- (a) For MAX Δ check, compare like points. Examples: Compare PC-TR-24 Point 0 to PC-TR-25 Point 0 or compare PC-TR-24 Point 0 to PMIS Point N031. (PMIS Point to TR-25 point number relationship is available in Surveillance Procedure 6.2PC.303.)
- (b) If suppression pool temperature $> 92^{\circ}\text{F}$ during normal operation or $> 102^{\circ}\text{F}$ during testing which adds heat to suppression pool, enter the Conditions and Required Actions of LCO 3.6.2.1, then contact Engineering to determine available instrument margin. If suppression pool temperature $> 95^{\circ}\text{F}$ during normal operation or $> 105^{\circ}\text{F}$ during testing which adds heat to suppression pool, ensure LCO 3.6.2.1 is entered.

Task No.: 215040A0101

=====

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

=====

Trainee: _____ Examiner: _____

Pass:___ Fail:___ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee Level: RO/SRO
3. Evaluation Method: Perform
4. Performance Time: 15 min
5. NRC K/A 215005 A1.07(3.0.3.4)

Directions to Examiner:

NOTE: THIS IS A **FAULTED** JPM. APRM “D” GAF WILL NOT ADJUST.

1. This JPM evaluates the trainee's ability to perform APRM calibration with a valid CTP available with only one RR loop in operation.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an “NP” for “not performed”.
5. Brief the trainee, place the simulator in run, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to perform APRM gain adjustment with a valid CTP available with only one RR loop in operation. Before you start, I will state the general plant conditions, the initiating cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders, and controls you would be using. State the position of controls as you would have manipulated them to perform APRM gain adjustment with a valid CTP available with only one RR loop in operation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. Recirc Pump “B” has been secured IAW SOP 2.2.68.1 for rebrushing the RRMG set.

Task No.: 215040A0101

=====

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

=====

General References:

1. Procedure 10.1

General Tools and Equipment:

1. Small screwdriver
2. NPP 10.1, Attachment 2 and 4

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".
4. Faulted steps denoted by "◆."

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

Conditions have stabilized since securing Recirc Pump "B" and the Control Room Supervisor directs you to obtain an Official Case or OD-3 and adjust APRM AGAFs for single loop operation. Inform the CRS when the task is complete and provide him with completed Attachment(s) for his review.

Note: Place the Simulator in RUN and tell the trainee to begin.

Task No.: 215040A0101

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

Performance Checklist	Standards	Initials
1. Obtain Official Case or OD-3 (PMIS Terminal)	Demand and obtain an Official Case or OD-3 from PMIS/typer.	_____ *
2. Obtain Procedure	Obtain NPP 10.1, Attachment 2.	_____
3. Ensure APRM recorder energized, APRM/IRM switch in APRM and pen not stuck	Ensures APRM recorder energized, APRM/IRM switch in APRM and pen not stuck.	_____
4. Record CTP on Attachment 2	Record CTP from Official Case or OD-3 on Attachment 2.	_____ *
5. Calculate FRP and record on Attachment 2	Calculate and record FRP on Attachment 2. (FRP = CMWT/2381)	_____ *
6. Record IMPULSE pressure.	Record impulse pressure.	_____
7. Compare recorded Impulse pressure with Attachment 4, record SAT or UNSAT.	Operator marks SAT for Impulse pressure comparison.	_____
8. Calculate and record APRM Desired value.	Calculate and record APRM Desired (APRM Desired = Core Thermal Power + 6.6).	_____ *
9. Record APRM - % CTP Initial	Record APRM - %CTP Initial from Official Case or OD-3.	_____ *

Task No.: 215040A0101

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

Performance Checklist	Standards	Initials
NOTE: Both APRM “A” and APRM “D” will need to be adjusted. If “A” is selected first then mark steps 10 through 13 first. If “D” is selected first then mark steps 14 through 17 first and come back to 10 through 13.		
10. Bypass APRMs that require adjustment	Bypass APRM “A” with the MANUAL BYPASS JOYSTICK.	_____
11. Verify APRM “A” Meter Switch is in AVERAGE	Verify APRM “A” meter switch is in the AVERAGE.	_____
12. Adjust APRM Desired	Adjust to APRM Desired	_____ *
13. Unbypass APRM “A”	Unbypass APRM “A” with the MANUAL BYPASS JOYSTICK.	_____
14. Verify APRM “D” Meter Switch is in AVERAGE	Verify APRM “D” meter switch is in the AVERAGE.	_____
◆ 15. Adjust APRM Desired	Attempts are made to adjust the Gain Adjustment Potentiometer	_____
◆ 16. Determine APRM “D” GAF cannot be adjusted.	Recognize APRM “D” GAF cannot be adjusted, report to the CRS. #CUE: CRS acknowledges the report. Maintain the “D” APRM in bypass.	_____
◆ 17. Leave APRM “D” bypassed.	Leave APRM “D” bypassed.	_____
18. Generate OD-3 report (PMIS terminal)	Demand an OD-3 (PMIS Terminal).	_____ *

Task No.: 215040A0101

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

Performance Checklist	Standards	Initials
19. Record APRM %CTP Final from OD-3	Record (APRM %CTP) from official case or Core Power & Flow Log & Attach to Attachment 2. Ensure all are reading 4.6 to 8.6.	_____*
20. Complete NPP 10.1 Attachment 2	Sign, date, and enter time on Attachment 2.	_____
21. Check Acceptance Criteria	Determine Acceptance Criteria is satisfied (except for APRM "D").	_____
22. Inform the CRS that the task is complete	Inform the Control Room Supervisor that APRM AGAFs have been adjusted with the exception of APRM "D" and provide him with the completed Attachment 2 for his review. #CUE: The CRS acknowledges the report.	_____

Task No.: 215040A0101

=====

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

- B. Initialize the simulator to any full power IC (suggested). Any IC that supports power operation above 25% power in single loop will work.

Batch File Name - JPM\342019.

- C. Change the simulator conditions as follows:

1. Triggers - None
2. Malfunctions - None
3. Remotes - None

4. Overrides

<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
APRM Ch. D Gain Adjust Potentiometer	ZAINMPOTR4D	A	0	0.29	0

5. Panel Setup

- a. Initialize Simulator to any full power IC and place both 1DN and 1DS in pulled to lock.
- b. Ensure total core flow is ≈ 42 Mlbm/hr with "A" RR Pump.
- c. Allow conditions to stabilize and ensure that PMIS/typer will provide proper edits/options when requested.
- d. Hang Danger tags on 1DN and 1DS.
- e. Adjust GAFs so 4 APRMs read 1.066 X FRTP (i.e. 75% pwr thermal, make 4 APRMs read 80%)

Task No.: 215040A0101

=====

Task Title: Perform APRM Gain Adjustment (With a Valid CTP) for Single Loop (Alternate Path)

=====

- f. Ensure APRM calibration is needed for “A” and “D” APRMs.

Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform APRM gain adjustment with a valid CTP available with only one RR loop in operation. Before you start, I will state the general plant conditions, the initiating cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders, and controls you would be using. State the position of controls as you would have manipulated them to perform APRM gain adjustment with a valid CTP available with only one RR loop in operation. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. Recirc Pump “B” has been secured IAW SOP 2.2.68.1 for rebrushing the RRMG set.

Initiating Cues:

Conditions have stabilized since securing Recirc Pump “B” and the Control Room Supervisor directs you to obtain an Official Case or OD-3 and adjust APRM AGAFs for single loop operation. Inform the CRS when the task is complete and provide him with completed Attachment(s) for his review.

Task No.:208028P0101

=====

Task Title: Separation of REC Critical Loops

=====

Trainee: _____ Examiner: _____

Pass:___ Fail:___ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: __ Simulate __ Perform
4. Performance Time: 5 minutes
5. NRC K/A 295018; AA1.03 (3.3/3.4), AK3.07 (3.1/3.2)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to separate the REC Critical Loops.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
5. Brief the trainee, place the simulator in run, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to separate the REC Critical Loops. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated to separate the REC Critical Loops. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====

Task No.:208028P0101

Task Title: Separation of REC Critical Loops

General Conditions:

1. Reactor was operating at 100% rated power,when a transient occurred in the REC system.
2. Several alarms associated with the REC system have been received in the Control Room.
2. Emergency Procedure 5.2REC, Loss of REC, has been entered and actions taken up to separating the REC Critical Loops.

General References:

1. Procedure 5.2REC
2. Procedure 2.2.65.1

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Control Room Supervisor directs you to separate the REC Critical Loops per 2.2.65.1, using the NORTH Critical Loop. Inform the CRS when you have separated the REC Critical Loops.

NOTE: Place the Simulator in RUN and tell the trainee to begin. (Delete malfunction SW12b).

Task No.:208028P0101

Task Title: Separation of REC Critical Loops

Performance Checklist	Standards	Initials
1. Obtain a copy of 2.2.65.1	The operator obtains a current revision of 2.2.65.1, section 14.	_____
2. Close REC-MO-695.	The operator closes REC-MO-695, CRITICAL LOOP SUPPLY CROSSTIE CUE: GREEN light ON, RED light OFF.	_____*
3. Close REC-MO-694.	The operator closes REC-MO-694, CRITICAL LOOP SUPPLY CROSSTIE CUE: GREEN light ON, RED light OFF.	_____*
4. Close REC-MO-721.	The operator closes REC-MO-721, NON CRITICAL HEADER RETURN CUE: GREEN light ON, RED light OFF.	_____*
5. Close REC-MO-722.	The operator closes REC-MO-722, NON CRITICAL HEADER RETURN CUE: GREEN light ON, RED light OFF.	_____*
6. Ensure Station Operator performs steps 14.6 through 14.9.	The operator directs the S.O. to perform steps 14.6 through 14.9 and inform him when they are completed. #CUE: As the S.O., report steps 14.6 through 14.9 are completed.	_____
7. Ensure REC-TCV-451A switch is in open.	The operator Ensure REC-TCV-451A, REC HX A SW OUTLET TEMPERATURE CONTROL, switch is in OPEN. CUE: Switch is in OPEN.	_____
8. Throttle open SW-MO-650	The operator Throttle open SW-MO-650 to obtain 400 to 1200 gpm flow on SW-FI-387A, REC HX A SW OUTLET. CUE: SW-FI-387A indicates 600 gpm.	_____*

Task No.:208028P0101

Task Title: Separation of REC Critical Loops

Performance Checklist	Standards	Initials
9. Ensure REC-MO-712 is closed	The operator Ensure REC-MO-712, HX A OUTLET VLV, is closed. CUE: GREEN light On, RED light Off.	_____*
10. Ensure REC-MO-711 is open	Operator ensures REC-MO-711, NORTH CRITICAL LOOP SUPPLY is open CUE: GREEN light OFF, RED light ON.	_____*
NOTE: The student may direct the Station Operator to obtain a surge tank level. Student may make decision about whether REC Surge Tank is available by status of annunciator M1/A3, REC SURGE TANK LOW Level and if it is clear or not.		
11. Open REC-MO-722	The operator opens REC-MO-722 if the REC Surge Tank is available, #CUE: Student may make decision about whether REC Surge Tank is available by status of annunciator M1/A3, REC SURGE TANK LOW Level and if it is clear or not.	_____
12. Ensure REC PUMP C or D is running	The operator Ensure REC PUMP C or D is running. CUE: REC PUMP C or D is running	_____*
13. Inform CRS	The operator informs the CRS that REC Critical Loops are separated. CUE: CRS responds that he understands the REC Critical Loops are separated.	_____

Task No.:208028P0101

Task Title: Separation of REC Critical Loops

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in any power IC.

Batch File Name - none.

C. Change the simulator conditions as follows:

1. Triggers

None

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
						1
SW12b	REC HX 1B Tube Leak	N/A	N/A	60%	N/A	N/A

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>Value</u>	<u>Ramp</u>
SW02	REC HX1B Inlet Isol Vlv (REC-V-18)	2	CLOSE	N/A
SW04	REC HX1A Inlet Isol Vlv (REC-V-20)	2	CLOSE	N/A

4. Overrides

None

Task No.:208028P0101

Task Title: Separation of REC Critical Loops

5. Panel Setup

- a. Place the Simulator in RUN. Insert above listed malfunction.
- b. Perform actions of EP 5.2REC up to the point of splitting the REC Critical Loops (all REC pumps off).
- c. Activate Trigger 2.
- d. FREEZE the simulator.
- e. When JPM begins and simulator is taken to RUN, DELETE the malfunction.

Note: If this JPM is to be performed more than once, snap the simulator into an IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to separate the REC Critical Loops. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to separate the REC Critical Loops. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. Reactor was operating at 100% rated power, when a transient occurred in the REC system.
2. Several alarms associated with the REC system have been received in the Control Room.
3. Emergency Procedure 5.2 REC, Loss of REC, has been entered and actions taken up to separating the REC Critical Loops.

Initiating Cues:

The Control Room Supervisor directs you to separate the REC Critical Loops per 2.2.65.1, using the NORTH Critical Loop. Inform the CRS when you have separated the REC Critical Loops.

Task No.: 200267A0501

=====

Task Title: Primary Containment Venting for PCPL

=====

Trainee: _____ Examiner: _____

Pass:___ Fail:___ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee Level: RO/SRO
3. Evaluation Method: Perform
4. Performance Time: 15 minutes
6. NRC K/A 295024 EA1.20(3.5/3.6)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to vent primary containment under accident or post accident conditions.
2. This JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Brief the trainee, and tell the trainee to begin.
4. Observe the trainee during performance of the JPM for proper use of self-checking methods.
5. All blanks must be filled out with either initials or an "NP" for "not performed", and an explanation may also be written in the space if desired by the examiner.

Directions to Trainee:

When I tell you to begin, you are to maintain drywell pressure during accident conditions. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to maintain drywell pressure during accident conditions.

=====

General Conditions:

1. The plant has experienced a LOCA.
2. The Containment Spray Mode of RHR is not operable.
3. Primary Containment pressure is approaching 56 psi slowly.
4. Suppression pool water level is 33'.

Task No.: 200267A0501

Task Title: Primary Containment Venting for PCPL

General References:

ESP 5.8.18

General Tools and Equipment:

1PA-2235 Key

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Shift Supervisor has declared a Site Area Emergency. The Control Room Supervisor has reached step PC/P-5 on Flowchart 3A and directed you to vent the Primary Containment using the **one inch drywell vent line** to reduce pressure below the Primary Containment Pressure Limit determined by Graph 11, EOP Support Procedure 5.8.18 Attachment 1. The other RO has initiated the appropriate EIPs for release rate determination. You are to inform the CRS when you have reduced primary containment pressure to just below the PCPL.

Note: Place the Simulator in RUN and tell the Trainee to begin.

Task No.: 200267A0501

Task Title: Primary Containment Venting for PCPL

Performance Checklist	Standards	Intials
1. Obtain a current copy of Procedure 5.8.18	Operator obtains a copy of Procedure 5.8.18.	_____
2. Monitor DW Pressure and Torus Level	Operator continuously monitors Drywell pressure and Suppression Pool level.	_____
3. Verify that SGT is operating	The operator verifies either SGT Fan A or B is operating.	_____
4. Verify dampers	The operator verifies damper control switch for AD-R-1A and AD-R-1B Control are in SGT on Panel-K.	_____
5. Verifies PC-AD-R-1A is CLOSED	The operator verifies that the control switch for the PC-AD-R1A is in the CLOSED position.	_____
6. Verifies PC-AD-R-1B is OPEN	The operator verifies that the control switch for the PC-AD-R1B is in the OPEN position.	_____
7. OPEN PC-MO-1310,	The operator places control switch for PC-MO-1310 to the OVERRIDE position on Panel P1.	_____ *
8. OVERRIDE PC-MO-306	The operator places the ISOLATION OVERRIDE switch for PC-MO-306 to OVERRIDE on Panel P1	_____ *
9. Open PC-MO-306,	The operator OPENS PC-MO-306 on Panel H.	_____ *

Task No.: 200267A0501

Task Title: Primary Containment Venting for PCPL

Performance Checklist	Standards	Initials
10. Monitor ERP effluent radiation monitors.	At Panel Q, operator monitors the ERP Effluent radiation monitors for response to release. #CUE: ERP High Range Kaman is responding and indicating $4 \times 10^4 \mu\text{ci/cc}$.	_____
NOTE: At this point, when monitoring PC/Drywell pressure, the operator may either ask for pressure or monitor it on Panels P1, 9-3, 9-4, or any PMIS IDT.		
11. THROTTLE PC-MO-306	The operator THROTTLES PC-MO-306 to reduce and maintain PC pressure to <u>just below</u> the PCPL (Att. 1 Graph 11).	_____
10 Inform CRS	The operator informs the CRS that he has reduced and is maintaining PC pressure <u>just below</u> the PCPL. #CUE: As the CRS acknowledge the report.	_____

Task No.: 200267A0501

=====

Task Title: Primary Containment Venting for PCPL

=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in a high power IC. Suggested 18.

Batch File Name - none.

C. Change the simulator conditions as follows:

1. Triggers

None

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigge r</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>
RR20a	Coolant Leakage Inside PC	N/A	N/A	10	N/A
PC02a	Torus To DW Vacuum Breaker Failure	N/A	N/A	100	N/A
PC02b	Torus To DW Vacuum Breaker Failure	N/A	N/A	100	N/A
HP01	HPCI System Failure To Auto Start	N/A	N/A	N/A	N/A
RC01	RCIC System Failure To Auto Start	N/A	N/A	N/A	N/A
FW18a	FW Line Break Inside PC	N/A	N/A	100	N/A
MS01	Steam leak inside D/W	N/A	N/A	8	N/A

Task No.: 200267A0501

Task Title: Primary Containment Venting for PCPL

ED18	PMIS System Power Failure	N/A	N/A	N/A	N/A
------	------------------------------	-----	-----	-----	-----

3. Remotes

None

4. Overrides

<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
ZAOPCLR1A[1]	N/A	N/A	33	N/A
ZAOPCLR1A[2]	N/A	N/A	30	N/A
ZAOPCLI10	N/A	N/A	6	N/A
ZAOPCLI12	N/A	N/A	10	N/A
ZAOPCLI13	N/A	N/A	10	N/A
ZAOPCLR11[2]	N/A	N/A	6	N/A
ZAOPCLR1B[1]	N/A	N/A	33	N/A
ZAOPCLR1B[2]	N/A	N/A	30	N/A
RA:MUX07C120	N/A	N/A	OFF	N/A
ZDIMSSWS3A[1]	N/A	N/A	INHIB	N/A
ZDIMSSWS3B[1]	N/A	N/A	INHIB	N/A
ZDIRFCLCL130[1]	N/A	N/A	MANUAL	N/A
ZAIRFCLCL130[1]	N/A	N/A	0	N/A
ZDIRHRSWS3A[3]	N/A	N/A	PTL	N/A
ZDIRHRSWS3B[3]	N/A	N/A	PTL	N/A
ZDIRHRSWS3C[3]	N/A	N/A	PTL	N/A
ZDIRHRSWS3D[3]	N/A	N/A	PTL	N/A
ZDICSSWS5A[3]	N/A	N/A	PTL	N/A

Task No.: 200267A0501

Task Title: Primary Containment Venting for PCPL

<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
ZDICSSWS5B[3]	N/A	N/A	PTL	N/A

5. Panel Setup

- a. Initialize the Simulator.
- b. Insert batch jpm/342025
- c. Place in RUN.
- d. Delete MS01 after D/W pressure >56psig
- e. Freeze simulator after all valves reposition, until student comes in.

Note: If this JPM is to be performed more than once, snap the simulator into an available IC after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to maintain drywell pressure during accident conditions. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to maintain drywell pressure during accident conditions.

General Conditions:

1. The plant has experienced an LOCA.
2. The Containment Spray Mode of RHR is not operable.
3. Primary Containment pressure is 56 psi and rising slowly.
4. Suppression pool water level is 33'.

Initiating Cues:

The Shift Supervisor has declared a Site Area Emergency. The CRS has reached step PC/P-5 on Flowchart 3A and directed you to vent the Primary Containment using the one inch drywell vent line to reduce pressure below the Primary Containment Pressure Limit determined by Graph 11, EOP Support Procedure 5.8.18 Attachment 1. The other RO has initiated the appropriate EIPs for release rate determination. You are to inform the CRS when you have reduced primary containment pressure to just below the PCPL.

Task Nos.:

=====

Task Title: RHR Shutdown Cooling Cooldown Rate Adjustment

=====

Trainee: _____ Examiner: _____

Pass:___ Fail:___ Examiner Signature:_____ Date:_____

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Perform _____ Simulate _____
4. Performance Time: 20 minutes
5. NRC K/As 259002 A1.04 (3.6/3.6) and 259002 A1.05 (2.9/2.9)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform a cooldown rate adjustment on the RHR system in Shutdown Cooling.
2. If this JPM is performed on the Simulator, only the cues preceded by “#” should be given.
4. All blanks must be filled out with either initials or an “NP” for “not performed”; an explanation may also be written in the space, if desired, by the examiner.
6. Brief the trainee, place the Simulator in RUN, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to calculate the current cooldown rate and make the necessary adjustments to RHR to stabilize coolant temperature at this point. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to perform the required task. During actual performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====

Task Nos.:

Task Title: RHR Shutdown Cooling Cooldown Rate Adjustment

General Conditions:

1. The Reactor is shutdown (Mode 4).
2. Reactor Coolant System temperature is approximately 120 degrees.
3. RHR loop B is operating in Shutdown Cooling.

General References:

1. Procedure 2.2.69.2, RHR Shutdown Cooling

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical steps denoted by “*”.
3. Simulator cues denoted by “#”.

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Control Room Supervisor directs you to calculate the current cooldown rate and perform the necessary adjustments to the RHR system to stabilize coolant temperature at this point. Inform the CRS when the you have stabilized coolant temperature.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

Task Nos.:

Task Title: RHR Shutdown Cooling Cooldown Rate Adjustment

Performance Checklist		Standards	Initials
1.	Obtains Procedure.	The Operator obtains a current copy of Procedure 2.2.69.2.	_____
2.	Calculates current cooldown rate.	The Operator calculates the current cooldown rate at approximately 20°F per hour. CUE: Late hour's temperature was 140°F	_____
NOTE: The Operator may perform multiple small adjustments to secure the cooldown rate, by reperforming the next two steps.			
3.	Adjust RHR flows to stop the cooldawn.	The Operator adjusts one or more of the following valves to control the cooldown: _____ RHR-MO-27B. _____ RHR-MO-66B. _____ RHR-MO-12B. CUE: As flow is adjusted through or around the RHR Heat Exchanger indicate that temperature is changing depending on how much and in what direction the valves are manipulated.	_____ *
4.	Recalculates cooldown rates.	The Operator recalculates the cooldown rate. CUE: When sufficient flow has been bypassed and or reduced indicate that coolant temperature is approximately 120°F.	_____ *

Task Nos.:

=====

Task Title: RHR Shutdown Cooling Cooldown Rate Adjustment

=====

5.	Reports completion of the task.	<p>The Operator reports to the CRS that coolant temperature cooldown rate has been secured, and coolant temperature is approximately 120°F.</p> <p>#CUE: As the CRS acknowledge the report.</p> <p>CUE: As the CRS Acknowledge the report.</p>	<hr/>
----	---------------------------------	--	-------

Task Nos.:

=====

Task Title: RHR Shutdown Cooling Cooldown Rate Adjustment

=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials required

None

B. Initialize the Simulator in IC-1

Batch File name - none.

C. Change the Simulator conditions from those of the IC as follows:

1. Triggers

None

2. Malfunctions

None

3. Remotes

None

4. Overrides

None

5. Panel Set-up

a. Place the Simulator in RUN.

b. Ensure RPV water level is established (and stable) between 45 to 50 inches on the Panel 9-5 Narrow Range instruments.

c. Ensure that the cooldown rate is approximately 50°F per hour.

d. Place the Simulator in FREEZE.

Note: If this JPM is to be performed more than once, snap the Simulator into IC-0 after the panel set-up is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to calculate the current cooldown rate and make the necessary adjustments to RHR to stabilize coolant temperature at this point. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to perform the required task. During actual performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The Reactor is shutdown (Mode 4).
2. Reactor Coolant System temperature is approximately 120 degrees.
3. RHR loop B is operating in Shutdown Cooling.

Initiating Cues:

The Control Room Supervisor directs you to calculate the current cooldown rate and perform the necessary adjustments to the RHR system to stabilize coolant temperature at this point. Inform the CRS when the you have stabilized coolant temperature.

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Trainee: _____ Examiner: _____

Pass: ____ Fail: ____ Examiner Signature: _____ Date: _____

NOTE: THIS IS AN ALTERNATE PATH JPM. The first valve tested will not close requiring entry into 2.4SRV.

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Perform
4. Performance Time: 16 minutes
5. NRC K/A 218000 A4.01 (4.4/4.4)

Directions to Examiner:

NOTE: A MARKED UP COPY OF 6.ADS.201 (THROUGH STEP 3.9) WILL BE PROVIDED TO THE OPERATOR.

1. This JPM evaluates the trainee's ability to perform an ADS manual valve actuation surveillance.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
5. Brief the trainee, place the simulator in run, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to perform the ADS manual valve actuation surveillance. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform the ADS manual valve actuation surveillance. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

1. Reactor Mode switch is in Run and Bypass valves are \approx 50% open.
2. Procedure 6.ADS.201 has been completed through step 3.9.
3. RHR Loop B has been placed in service in suppression pool cooling.
4. An operator is positioned to monitor bypass valve position during the test.

General References:

1. Procedure 6.ADS.201
2. Procedure 2.4SRV

General Tools and Equipment:

1. Marked up copy of 6.ADS.201

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Control Room Supervisor directs you to perform the ADS manual valve actuation surveillance for MS-RV-71A and MS-RV-71E. You are to inform the CRS when testing is complete and you are ready to perform the restoration section of 6.ADS.201.

NOTE: Provide operator with a marked up copy of 6.ADS.201.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
1. Obtains the marked up copy of the surveillance	The Operator obtains the marked up copy of the surveillance.	_____
2. Display ADS TEST	The Operator depresses the ADS TEST push-button at the Safety System Status Panel.	_____
3. Mark recorders every five minutes.	The Operator starts observing and marking PC-TR-24 and PC-TR-25 every five minutes. #CUE: (When checked) state that a second operator will monitor and mark recorders.	_____
5. Verify annunciators are clear	The Operator verifies the SAFETY OR RELIEF VALVE LEAKING (9-3-1/C-1) alarms clears.	_____
5. Verify annunciators are clear	The Operator verifies the RELIEF VALVE OPEN (9-3-1/A-2) alarms clear.	_____
NOTE: Testing of MS-RV-71A and -71E may be performed in either order.		
NOTE: The trainee may record closed valve data for both valves at the same time. Go to step number 14 for MS-RV-71E.		

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
6. Record data for closed valve.	<p>The Operator records the following data on 6.ADS.201 Attachment 1 for MS-RV-71A in the CLOSED position:</p> <p>_____ RELIEF VALVE OPEN annunciator status (9-3-1/A-2)</p> <p>_____ SAFETY/RELIEF VALVE LEAKING annunciator status (9-3-1/C-1)</p> <p>_____ Green CLOSED indicating lamp status</p> <p>_____ Amber indicating light status</p> <p>_____ Red OPEN indicator light status</p> <p>_____ Indicated temperature on MS-TR-166</p> <p>_____ Indicated temperature from computer points T142 and T146</p> <p>_____ Bypass Valve position</p>	<p>_____ *</p>
7. Monitor Bypass Position.	<p>The Operator ensures another Operator is monitoring bypass valve position.</p> <p>#CUE: Operator is positioned to monitor bypass valve position.</p>	<p>_____</p>
8. Place control switch in OPEN	<p>The Operator places to OPEN the control switch for MS-RV-71A.</p>	<p>_____ *</p>
9. Record Time	<p>The Operator Record opening time on Attachment 2.</p>	<p>_____ *</p>

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
10. Record data	<p>The Operator records the following data on 6.ADS.201 Attachment 1 for the selected valve:</p> <p>_____ RELIEF VALVE OPEN Annunciator Status (9-3-1/A-2)</p> <p>_____ SAFETY/RELIEF VALVE LEAKING annunciator status (9-3-1/C-1)</p> <p>_____ Green indicating light status</p> <p>_____ Amber indicating light status</p> <p>_____ Red OPEN indicating light status</p> <p>_____ Indicating temperature on MS-TR-166</p> <p>_____ Indicated temperature from computer points T142 (T146)</p> <p>_____ Bypass valve position</p> <p>#CUE: Tell the Operator that the Bypass valve position is as indicated.</p>	<p>_____ *</p>
11. Place control switch in CLOSE	<p>The Operator places the control switch for MS-RV-71A in CLOSE.</p>	<p>_____ *</p>

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
12. Record data for closed valve	<p>The Operator records the following data on 6.ADS.201 Attachment 1 for MS-RV-71A in the CLOSED position:</p> <p>_____RELIEF VALVE OPEN annunciator status(9-3-1/A-2)</p> <p>_____SAFETY/RELIEF VALVE LEAKING annunciator status (9-3-1/C-1)</p> <p>_____Green CLOSED indicating lamp status</p> <p>_____Amber indicating light status</p> <p>_____Red OPEN indicator light status</p> <p>_____Indicated temperature on MS-TR-166</p> <p>_____Indicated temperature from computer points T142 and T146</p> <p>_____Bypass Valve position</p> <p>#CUE: Tell the Operator that the Bypass valve position is as indicated.</p>	<p>_____*</p>
13. Calculate and record change in bypass valve position	<p>The Operator calculates and records change in Bypass Valve Position.</p>	<p>_____*</p>

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
14. Record data for closed valve.	<p>The Operator Record the following data on 6.ADS.201 Attachment 1 for MS-RV-71E in the CLOSED position:</p> <p>_____RELIEF VALVE OPEN annunciator status (9-3-1/A-2)</p> <p>_____ SAFETY/RELIEF VALVE LEAKING annunciator status (9-3-1/C-1)</p> <p>_____ Green CLOSED indicating lamp status</p> <p>_____ Amber indicating light status</p> <p>_____ Red OPEN indicator light status</p> <p>_____ Indicated temperature on MS-TR-166</p> <p>_____ Indicated temperature from computer points T142 and T146</p> <p>_____ Bypass Valve position</p>	<p>_____ *</p>
15. Monitor Bypass Position.	<p>The Operator ensures the Operator is still monitoring bypass valve position.</p> <p>#CUE: Operator is positioned to monitor bypass valve position.</p>	<p>_____</p>
16. Place control switch for selected relief valve in OPEN	<p>The Operator Place to OPEN control switch for MS-RV-71E.</p>	<p>_____ *</p>

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Performance Checklist	Standards	Initials
17. Records data	<p>The Operator Record following data on 6.ADS.201 Attachment 1 for the selected valve:</p> <p>_____ RELIEF VALVE OPEN Annunciator Status (9-3-1/A-2)</p> <p>_____ SAFETY/RELIEF VALVE LEAKING annunciator status (9-3-1/C-1)</p> <p>_____ Green indicating light status</p> <p>_____ Amber indicating light status</p> <p>_____ Red OPEN indicating light status</p> <p>_____ Indicating temperature on MS-TR-166</p> <p>_____ Indicated temperature from computer points T142 (T146)</p> <p>_____ Bypass valve position</p> <p>#CUE: Tell the Operator that the Bypass valve position is as indicated.</p>	<p>_____ *</p>
18. Place control switch in CLOSE	<p>The Operator Place the control switch for MS-RV-71E in CLOSE.</p>	<p>_____ *</p>
20. Record data for closed valve	<p>The Operator reports to the CRS that the SRV is stuck OPEN and did not close. And that it is an entry into 2.4SRV.</p> <p>#CUE: As the CRS tell the Operator to enter 2.4SRV and perform the subsequent actions.</p>	<p>_____ *</p>

NOTE: Once the Operator pulls 2.4SRV indicate that the JPM is complete.

Task No.: 218005P0201

=====

Task Title:Perform ADS Manual Valve Actuation Surveillance (Alt Path)

=====

Task No.: 218005P0201

=====

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in an IC that has the Mode Switch in RUN and the bypass valves in Auto at 50% open.

Batch File Name - SKL03420xx.

C. Change the simulator conditions as follows:

1. Triggers

Trigset E1 = AD06E

2. Malfunctions

AD06E set at 100%

3. Remotes

None

4. Overrides

None

5. Panel Setup

a. Initialize the Simulator in IC-10.

b. Complete Procedure 6.ADS.201, steps 2.1 through 3.9 and provide a marked up copy to the Operator to use. Indicate MS-RV-71A and MS-RV-71E as the valves requiring testing.

c. Place "B" RHR loop in Supression Pool Cooling.

Task No.: 218005P0201

Task Title: Perform ADS Manual Valve Actuation Surveillance (Alt Path)

Note: If this JPM is to be performed more than once, snap the simulator into IC-0 after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform the ADS manual valve actuation surveillance. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform the ADS manual valve actuation surveillance. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. Reactor Mode switch is in Run and Bypass valves are \approx 50% open.
2. Procedure 6.ADS.201 has been completed through step 7.5.
3. RHR Loop B has been placed in service in suppression pool cooling.
4. An operator is positioned to monitor bypass valve position during the test.

Initiating Cues:

The Control Room Supervisor directs you to perform the ADS manual valve actuation surveillance for MS-RV-71A and MS-RV-71E. You are to inform the CRS when testing is complete and you are ready to perform the restoration section of 6.ADS.201.

Task Nos.:259032P0101, 200273A0101

=====

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

=====

Trainee: _____ Examiner: _____

Pass:___ Fail:___ Examiner Signature:_____ Date:_____

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: Perform _____ Simulate _____
4. Performance Time: 20 minutes
5. NRC K/As 259002 A1.04 (3.6/3.6) and 259002 A1.05 (2.9/2.9)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test.
2. If this JPM is performed on the Simulator, only the cues preceded by “#” should be given.
4. All blanks must be filled out with either initials or an “NP” for “not performed”; an explanation may also be written in the space, if desired, by the examiner.
6. Brief the trainee, place the Simulator in RUN, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test. During performance, state the actions you are taking (e.g.: repositioning controls and observing instrumentation).

=====

Task Nos.:259032P0101, 200273A0101

=====

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

=====

General Conditions:

1. Reactor is shutdown (Mode 4).
2. RHR loop B is in Shutdown Cooling
3. Reactor Coolant System temperature approximately 120°F.
4. Performance of 15.RF.201 is dictated by Procedure 2.1.1, Startup Procedure.

General References:

1. Procedure 2.1.1
2. Procedure 15.RF.201

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical steps denoted by “*”.
3. Simulator cues denoted by “#”.

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Control Room Supervisor directs you to perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test. Inform the CRS when the surveillance has been completed. Shift Supervisor’s permission has been granted to perform the test and the Control Room Operator has already logged the start of this procedure.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

Task Nos.:259032P0101, 200273A0101

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

Performance Checklist	Standards	Initials
1. Obtains Procedure.	The Operator obtains a current copy of Procedure 15.RF.201	_____
2. Ensure that RF-MO-31 is CLOSED.	The Operator ensures that RF-MO-31 is CLOSED.	_____
3. Ensure that RF-MO-32 is CLOSED.	The Operator ensures that RF-MO-32 is CLOSED.	_____
4. Ensure that RF-MO-33 is CLOSED.	The Operator ensures that RF-MO-33 is CLOSED.	_____
5. Ensure that RF-MO-34 is CLOSED.	The Operator ensures that RF-MO-34 is CLOSED.	_____
6. Ensure that FCV11AA is in AUTO.	The Operator ensures that RFC-CS-FCV11AA is in AUTO.	_____
7. Ensure bias setting on FCV11AA is set at zero.	The Operator ensures bias setting on RFC-CS-FCV11AA is set at zero.	_____
8. Ensure that FCV11BB is in AUTO.	The Operator ensures that RFC-CS-FCV11BB is in AUTO.	_____
9. Ensure bias setting on FCV11BB is set at zero.	The Operator ensures bias setting on RFC-CS-FCV11BB is set at zero.	_____
10. Ensure SUMAST is in AUTO.	The Operator ensures RFC-CS-SUMAST is in AUTO.	_____
11. Ensure LEVEL SETPOINT on SUMAST is set ~10" below current water level.	The Operator ensures LEVEL SETPOINT on RFC-CS-SUMAST is set ~10" below current water level	_____
12. Verifies OUTPUT on FCV11AA is at minimum.	The Operator verifies OUTPUT on RFC-CS-FCV11AA is at minimum.	_____

Task Nos.:259032P0101, 200273A0101

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

13. Verifies OUTPUT on FCV11BB is at minimum.	The Operator verifies OUTPUT on RFC-CS-FCV11BB is at minimum.	_____
14. Verifies OUTPUT on SUMAST is at minimum.	The Operator verifies OUTPUT on RFC-CS-SUMAST is at minimum.	_____
Depending on which FCV is in the lead the Operator will either perform steps 16 through 20 or 21 through 25 and N/A the others.		
15. Determines Lead SFCV.	The Operator determines Lead SFCV.	_____
16. Transfer Lead SFCV	The Operator transfers Lead SFCV by placing RFC-CS-FCV11AA in MAN	_____
17. Verify Memic indicates lead.	The Operator verifies Memic indicates that FCV11BB is lead.	_____
18. Transfer Lead SFCV back to FCV11AA.	The Operator transfers Lead SFCV back to FCV11AA by placing RFC-CS-FCV11AA in AUTO.	_____
19. Ensure Bias on FCV11AA is zero.	The Operator ensures Bias on FCV11AA is zero.	_____
20. Verify FCV11AA is Lead SFCV.	The Operator verifies FCV 11AA is Lead Startup Flow Control Valve on RFC-M-OITA Startup Valve Mimic screen.	_____
21. IF B SFCV is in the lead then Transfer Lead SFCV.	The Operator transfers Lead SFCV by placing RFC-CS-FCV11BB in MAN	_____
22. Verify Memic indicates lead.	The Operator verifies Memic indicates that FCV11AA is lead.	_____
23. Transfer Lead SFCV back.	The Operator transfers Lead SFCV back to FCV11BB by placing RFC-CS-FCV11AA in AUTO.	_____
24. Ensure Bias is zero.	The Operator ensures Bias on FCV11BB is zero.	_____
25. Verify Lead SFCV.	The Operator verifies FCV 11BB is Lead Startup Flow Control Valve on RFC-M-OITA Startup Valve Mimic screen.	_____

Task Nos.:259032P0101, 200273A0101

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

26. Establish communication with SO in Feed Pump Room	The Operator contacts the Station Operator in the Reactor Feed Pump Room. #CUE: When contacted as the Station Operator indicate that you are standing by to monitor the Startup Flow Control Valves.	_____
27. Adjusts SUMAST	The Operator adjusts RFC-CS-SUMAST using the UP/DOWN arrows to >2" above current water level.	_____
28. Verifies OUTPUT rises to ~100%	The Operator verifies that the OUTPUT rises up to ~100% and MAX light is lit for the RFC-CS-FCV11AA.	_____*
29. Verifies OUTPUT rises to ~100%	The Operator verifies that the OUTPUT rises up to ~100% and MAX light is lit for the RFC-CS-FCV11BB.	_____*
30. Verifies OUTPUT rises to ~100%	The Operator verifies that the OUTPUT rises up to ~100% and MAX light is lit for the RFC-CS-SUMAST.	_____*
31. Contacts the SO in the feed pump room to verify SFCVs OPENED	The Operator contacts the SO in the feed pump room and has him verify that the Startup Flow Control Valves OPENED. #CUE: Respond as the SO and report that the Startup Flow Control valves OPENED.	_____*
32. Verifies that the VALVE POSITION rises to ~100%	The Operator verifies that the VALVE POSITION rises to ~100% one the RFC-CS-FCV11AA.	_____
33. Verifies that the VALVE POSITION rises to ~100%	The Operator verifies that the VALVE POSITION rises to ~100% one the RFC-CS-FCV11BB.	_____
34. Verifies [A-63] Controller High Saturation Limit alarms	The Operator verifies on the RFC-M-OITA(B) [A-63] Controller High Saturation Limit alarms.	_____
35. Verifies that Annunciator A-1/E-6 alarms	If RFC-CS-FCV11AA is the lead then the Operator verifies that Annunciator A-1/E-6 alarms	_____
36. Verifies that Annunciator A-2/E-3 alarms	If RFC-CS-FCV11BB is the lead then the Operator verifies that Annunciator A-2/E-3 alarms	_____

Task Nos.:259032P0101, 200273A0101

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

37. Adjusts the level setpoint	The Operator adjusts the level setpoint on RFC-CS-SUMAST using the UP/DOWN arrows to 10" below the current water level.	_____
38. Checks that the OUTPUT	The Operator checks that the OUTPUT lowers to ~0% and MIN light is lit on the RFC-CS-FCV11AA.	_____*
39. Checks that the OUTPUT	The Operator checks that the OUTPUT lowers to ~0% and MIN light is lit on the RFC-CS-FCV11BB.	_____*
40. Checks that the OUTPUT	The Operator checks that the OUTPUT lowers to ~0% and MIN light is lit on the RFC-CS-SUMAST.	_____*
41. Contacts the SO to verify that the SFCVs CLOSED.	The Operator contacts the SO in the feed pump room and has him verify that the Startup Flow Control Valves CLOSED. #CUE: Respond as the SO and report that the Startup Flow Control valves CLOSED.	_____*
42. Checks that the % VALVE POSITION lowers	The Operator checks that the % VALVE POSITION lowers to ~0% on RFC-CS-FCV11AA.	_____*
43. Checks that the % VALVE POSITION lowers	The Operator checks that the % VALVE POSITION lowers to ~0% on RFC-CS-FCV11BB.	_____*
44. Verifies that the alarm that was received is clear	The Operator verifies that the alarm that was received is clear	_____
45. Verifies [A-63] Controller High Saturation Limit clears.	The Operator verifies on RFC-M-OITA (B) that the [A-63] Controller High Saturation Limit clears.	_____
46. Verifies [A-64] alarm did not alarm	The Operator verifies on RFC-M-OITA and RFC-M-OITB that the [A-64] alarm did not alarm during the performance of the surveillance.	_____*
NOTE: CUE the Operator as the Control Room Supervisor (CRS) to adjust the level setpoint on RFC-CS-SUMAST to 15", and there is no need to raise level to ≥ 48 " or secure a Reactor Recirc Pump.		
47. Adjusts the SUMAST setpoint to 15"	The Operator, using the UP/DOWN arrows adjust the RFC-CS-SUMAST setpoint to 15"	_____

Task Nos.:259032P0101, 200273A0101

=====

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

=====

48. Operator completes surveillance.	The Operator then completes the surveillance and turns it in for review.	
--------------------------------------	--	--

Task Nos.:259032P0101, 200273A0101

=====

Task Title: Perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test)

=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials required

None

B. Initialize the Simulator in IC-1

Batch File name - none.

C. Change the Simulator conditions from those of the IC as follows:

1. Triggers

None

2. Malfunctions

None

3. Remotes

None

4. Overrides

None

5. Panel Set-up

a. Place the Simulator in RUN.

b. Ensure RPV water level is established (and stable) between 30" and 40" on the Panel 9-5 Narrow Range instruments.

c. Ensure that Startup Level Controllers RFC-CS-SUMAST, RFC-CS-11AA, RFC-CS-11BB are all in MAN with their OUTPUTs indicating 0%.

d. Place the Simulator in FREEZE.

Note: If this JPM is to be performed more than once, snap the Simulator into IC-0 after the panel set-up is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform Surveillance Procedure 15.RF.201, STARTUP LEVEL CONTROL SYSTEM FUNCTIONAL TEST. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to perform Surveillance Procedure 15.RF.201, STARTUP LEVEL CONTROL SYSTEM FUNCTIONAL TEST. During actual performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The Reactor is shutdown (Mode 4).
2. Reactor Coolant System temperature is approximately 120 degrees.
3. RHR loop B is operating in Shutdown Cooling.
4. A Reactor startup has been authorized, and the Control Room Supervisor has reached the step in Startup Procedure 2.1.1 that directs the performance of 15.RF.201.

Initiating Cues:

The Control Room Supervisor directs you to perform Surveillance Procedure 15.RF.201, Startup Level Control System Functional Test. Inform the CRS when the surveillance has been completed. Shift Manager's permission has been granted to perform the test and the Control Room Operator has already logged the start of the procedure.

Task No.: 202022C0401

=====

Task Title: Respond to a Trip of a Reactor Recirc pump

=====

Trainee: _____ Examiner: _____

Pass:____ Fail:____ Examiner Signature:_____ Date:_____

Additional Program Information:

1. Appropriate Performance Locations: CR / SIM
2. Appropriate Trainee level: RO / SRO
3. Evaluation Method: Perform _____ Simulate _____
4. Performance Time: 20 minutes
5. NRC K/As 202001 A2.03 (3.6/3.7)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to respond to a Reactor Recirculation pump trip per 2.4RR, "Reactor Recirculation Abnormal."
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
4. Give the trainee his copy of the Directions to the Trainee (Attachment 2) when ready to start the JPM.
5. Brief the trainee, place the Simulator in RUN, and tell the trainee to begin.

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

Directions to Trainee:

When I tell you to begin, you are to perform actions as appropriate to panel 9-4 and 9-5 indications. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

If being simulated In-Plant or Control Room:

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

If being performed in the Simulator:

During task performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at power.
2. You are the Control Room Operator.

General References:

1. Procedure 2.4RR, Reactor Recirculation Abnormal
2. Procedure 2.2.68.1, Reactor Recirculation System Operations

Task No.: 202022C0401

=====

Task Title: Respond to a Trip of a Reactor Recirc pump

=====

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical steps denoted by “*”.
3. Simulator cues denoted by “#”.

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

The Control Room Supervisor directs you to perform actions as appropriate to panel 9-4 and panel 9-5 indications.

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

Performance Checklist		Standards	Initials
1.	Assume the watch at panel 9-5.	The operator positions himself in a position to monitor panel 9-5.	_____
ACTION: After the candidate assumes the watch, activate TRIGGER E1 to trip “B” Reactor Recirculation Pump.			
2.	Recognize and report trip of Recirc pump.	The operator recognizes and reports the trip of “B” Reactor Recirculation pump. #CUE: Acknowledge the report as CRS. Dirrects the operator to perform his actions per the abnormal.	_____*
3.	Take appropriate immediate actions.	The operator evaluates 2.4RR immediate actions; determines none apply.	_____
4.	Obtain procedure 2.4RR.	The operator obtains a copy of 2.4RR.	_____
5.	Enter Attachment 1 of 2.4RR	Operator enters Attachment 1 of 2.4RR.	_____*
6.	Evaluate need to enter Attachment 4 for stability exclusion region.	Operator evaluates the need to enter Attachment 4 for stability exclusion region; determines entry is required. CUE: Indicate a value of core flow inside the stability exclusion region.	_____
7.	Ensure RRMG Set B GEN FIELD BKR open.	Operator ensures RRMG Set B GEN FIELD BKR open. CUE: RRMG Set B GEN FIELD BKR green light is illuminated, the red light is out.	_____*

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

Performance Checklist		Standards	Initials
8.	Close RR-MO-53B, PUMP DISCHARGE VLV.	Operator closes RR-MO-53B, PUMP DISCHARGE VLV. CUE: RR-MO-53B green light is lit and the red light is out.	_____*
NOTE: The operator should continue with the remaining 2.4RR steps while waiting for the RR-MO-53B valve.			
9.	After RR-MO-53B has been closed for 5 minutes, open valve.	Operator opens RR-MO-53B after it has been closed for 5 minutes (-0, + 5 minutes). CUE: RR-MO-53B green light is out and red light is lit (after valve has been opened).	_____
10.	Ensure operating RRMG is transferred to Startup Transformer per Procedure 2.2.18.	Operator ensures "A" RRMG is powered by the Startup Transformer. CUE: "A" RRMG is powered by the Startup Transformer (Breaker 1CS is closed).	_____
11.	Maintain oil outlet temperature for tripped RRMG 90°F to 130°F.	Operator directs Station Operator to maintain oil outlet temperature for tripped RRMG 90°F to 130°F. #CUE: Acknowledge/repeat back order as Station Operator.	_____
12.	Monitor loop cooldown rate on RR-TR-165, RR SUCTION & FEEDWATER TEMP.	Operator monitors loop cooldown rate on RR-TR-165, RR SUCTION & FEEDWATER TEMP. CUE: Loop temperature has dropped 6°F over the last 5 minutes.	_____

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

Performance Checklist		Standards	Initials
13.	Concurrently enter Single Loop Operation per Procedure 2.2.68.1.	Operator obtains a copy of 2.2.68.1.	_____
14.	Dispatch Operators to R-976-W and Non-Critical Switchgear Room to record lockout relays and targets for tripped pump.	Operator dispatches Operators to R-976-W and Non-Critical Switchgear Room to record lockout relays and targets for tripped pump. #CUE: Overcurrent (51 relay) is tripped for breaker 1DN (in Non-Critical Switchgear Room). There are no lockouts at Reactor Building 976 West.	_____
15.	If total core flow < 20%, concurrently enter Attachment 2.	Operator determines Core Flow is above 20% rated. CUE: Indicated core flow is 41 Mlbm/hr.	_____
16.	Align RRMG H&V System per Procedure 2.2.85.	Operator align RRMG H&V System per Procedure 2.2.85. #CUE: When operator initiates action to align ventilation, inform him that another operator will perform the ventilation alignment.	_____
17.	Executes Attachment 4 of 2.4RR.	Operator informs the Shift Manager that LCO 3.4.1 Condition A, entry is required #CUE: Respond as the Shift Manager and acknowledge the report.	_____

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

Performance Checklist		Standards	Initials
18.	Either raises speed of other recirc pump or drives the emergency power reduction rods.	Operator either raises speed on the other recirc pump per 2.1.10 or drives the emergency power reduction rods per 10.13 to exit the stability exclusion region.	_____*
19.	Informs RE of operation in the stability exclusion region.	Operator notifies the Reactor Engineer if the Stability Exclusion Region has been entered. #CUE: Respond as the RE and acknowledge the report.	_____
NOTE: As soon as the student contacts the Reactor Engineer, tell them that the JPM is over.			

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials required

None

B. Initialize the Simulator in any full power IC (IC-18, 19 or 20 suggested)

Batch File name - none.

C. Change the Simulator conditions from those of the IC as follows:

1. Triggers

<u>Number</u>	<u>File Name</u>	<u>Description</u>
None	N/A	N/A

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RR04D	"B" Reactor Recirculation Pump Drive Motor Breaker Trip (1DN)	E1	N/A	N/A	N/A	N/A

3. Remotes

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
	None				

Task No.: 202022C0401

Task Title: Respond to a Trip of a Reactor Recirc pump

4. Overrides

<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
None	N/A	N/A	N/A	N/A	N/A

5. Panel Set-up (suggested.)

- a. Insert listed overrides and malfunctions.
- b. Place the Simulator in RUN.
- c. Ensure “A” Reactor Recirculation pump is aligned to the Startup Transformer.
- d. Ensure “B” Reactor Recirculation pump is aligned to the Normal Transformer.
- e. Ensure that the curser on the power to flow map is within the normal operating region.

Note: If this JPM is to be performed more than once, snap the Simulator into an IC after the panel set-up is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to perform actions as appropriate to panel 9-4 and 9-5 indications. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

If being simulated In-Plant or Control Room:

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

If being performed in the Simulator:

During task performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The plant is operating at power.
2. You are the RO (9-5 PNL).
3. Optimum Water Chemistry is out of service.

Initiating Cue(s):

The Control Room Supervisor directs you to perform actions as appropriate to panel 9-4 and panel 9-5 indications.

Task No.:

=====

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

=====

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: Plant
2. Appropriate Trainee Level: SO / RO / SRO
3. Evaluation Method: **Simulate**
4. Performance Time: 30 minutes
5. NRC K/A: ????????

Directions to Examiner:

1. This JPM evaluates the trainee's ability to operate RCIC with no power available.
2. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
3. Brief the trainee and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin you are to perform Attachment 4 of 5.3ALT-Strategy to start RCIC. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

=====

General Conditions:

1. The plant has experienced a loss of all AC and DC power.
2. The Rx has scrambled.
3. RCIC is in the standby lineup.

General References:

1. 5.3ALT-STRATEGY

Task No.:

=====

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

=====

General Tools and Equipment:

1. Handheld Tachometer. Kept in R-903-NE Quad stairwell

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

You have been assigned to carry out actions for Manual RCIC operation in accordance with Procedure 5.3ALT-STRATEGY Attachment 4. The Control Room Supervisor (CRS) directs you to perform all the necessary steps to maintain water level between 15 and 40 inches. Notify the CRS when the RCIC is in service and water level is being maintained.

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
1. Obtain a copy of 5.3ALT-STRATEGY	The Operator obtains a copy of 5.3ALT-STRATEGY, Alternate Core Cooling Mitigating Strategies.	_____
2. Checks if the RCIC Turbine needs to be reset.	<p>The Operator Checks if the RCIC Turbine needs to be reset.</p> <p>CUE: Indicate that the Trip lever is as found.</p>	_____
NOTE: All AC and DC power has been lost.		
3. Ensures the RCIC Breakers are OFF.	<p>The Operator ensures that the following breakers are in the OFF condition.</p> <p>_____ 1. RCIC-MO-15, BREAKER 10B on MCC-Y (R-903-S).</p> <p>CUE: It is in the OFF position.</p> <p>_____ 2 RCIC-MO-41, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>_____ 3 RCIC-MO-18, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>_____ 4. RCIC-MO-131, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p>	

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
Continued	<p>____ 5. RCIC-MO-27, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 6. RCIC-MO-21, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 7. RCIC-MO-132, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 8. RCIC-MO-14, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 9. RCIC-MO-33, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 10. RCIC-MO-20, BREAKER on 125 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position.</p> <p>____ 11. RCIC-MO-30, BREAKER on 125 VDC RCIC STARTER RACK.</p>	

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
Continued	<p>_____ 12. RCIC-MO-16, EE-STR-125 RCIC (MO16).</p> <p>CUE: It is in the OFF position</p> <p>_____ 13. GLAND SEAL TANK CONDENSATE PUMP on 250 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position</p> <p>_____ 14. GLAND SEAL VACUUM PUMP on 250 VDC RCIC STARTER RACK.</p> <p>CUE: It is in the OFF position</p>	<p>_____ *</p>
15. Ensures valve Closed.	<p>The Operator ensures that the RCIC-MO-14, Trip Valve in the RCIC Pump Room is CLOSED.</p> <p>CUE: If simulated checking the valve in the closed direction indicate the valve is in the CLOSED position.</p>	<p>_____ *</p>
16. Ensures valve Closed.	<p>The Operator ensures that the RCIC-MO-41, Torus Pump Suction Valve in the RCIC Pump Room is CLOSED.</p> <p>CUE: If simulated checking the valve in the closed direction indicate the valve is in the CLOSED position.</p>	<p>_____ *</p>

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
17. Ensures valve Closed.	<p>The Operator ensures that the RCIC-MO-27, Minimum Flow Bypass Valve in the RCIC Pump Room is CLOSED.</p> <p>CUE: If simulated checking the valve in the closed direction indicate the valve is in the CLOSED position.</p>	_____*
18. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-131, Steam Supply to the Turbine Valve in the RCIC Pump Room is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____*
19. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-21, Pump Discharge to the Reactor Valve in the Steam Tunnel 903 is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____*
20. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-20, Pump Discharge Valve in the NE Quad 881 is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____*
21. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-33, ECST Shutoff Valve in the NE Quad 881 is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____*

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
22. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-132, Turbine Oil Cooling Water Supply Valve in the RCIC Pump Room is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____
23. Ensures valves OPEN.	<p>The Operator ensures that the RCIC-MO-18, ECST Pump Suction Valve in the RCIC Pump Room is OPEN.</p> <p>CUE: If simulated checking the valve in the open direction indicate the valve is in the OPEN position.</p>	_____*
24. Ensures valves OPEN.	<p>The Operator disconnects the electrical connector going to RCIC-CHA-3067 in the RCIC Pump Room.</p> <p>CUE: Indicate the connector is disconnected.</p>	_____
25. Ensures valves OPEN.	<p>The Operator throttles the RCIC-MO-30, Test Bypass to the ECST Valve OPEN 15 turns.</p> <p>CUE: If simulated opening the valve 15 turns, indicate the valve is throttled OPEN.</p>	_____*
26. Gets Tachometer.	<p>The Operator retrieves the Handheld Tachometer from its storage location in the R-903-NE Quad stairwell.</p> <p>CUE: If simulated retrieving the tachometer indicate retrieval.</p>	_____

Task No.:

Task Title: 5.3ALT-Strategy - RCIC Manual Operation

Performance Checklist	Standard	Initials
27. Starts Turbine.	<p>The Operator slowly throttles the RCIC-MO-14 OPEN while monitoring RCIC Discharge Pressure on RCIC-PI-59 located on Rack 25-58.</p> <p>CUE: Flow noise and normal turbine noise is heard.</p> <p>CUE: Indicate that the RCIC discharge pressure is equal to Reactor pressure.</p>	_____*
28. Monitors level.	<p>The Operator Monitors Reactor Water level on NBI-LIS-73A(B) RPV Level Yarway.</p> <p>CUE: Indicate that level is 170" slowly lowering.</p>	_____
29. Adjust RCIC flow to raise level.	<p>The Operator closes RCIC-MO-30 to recover level.</p> <p>CUE: After 1 minute indicate level is 175 and slowly rising.</p> <p>CUE: After 2 minutes indicate level is 190 and slowly rising.</p>	_____*
30. Adjust RCIC flow to maintain level.	<p>The Operator throttles opens 15 turns the RCIC-MO-30 to stabilize level.</p> <p>CUE: After 1 minute indicate level is 185" and stable.</p>	_____*
31. Notifies CRS.	<p>The Operator notifies the CRS that RCIC is inservice and is maintaining level at 185" on NBI-LIS-73A(B).</p> <p>CUE: As the CRS acknowledge the report.</p>	_____

ATTACHMENT 1

Directions to the Trainee:

When I tell you to begin you are to perform Attachment 4 of 5.3ALT-Strategy to start RCIC. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

General Conditions:

1. The plant has experienced a loss of all AC and DC power.
2. The Rx has scrammed.
3. RCIC is in the standby lineup.

Initiating Cue(s):

You have been assigned to carry out actions for Manual RCIC operation in accordance with Procedure 5.3ALT-STRATEGY Attachment 4. The Control Room Supervisor (CRS) directs you to perform all the necessary steps to maintain water level between 15 and 40 inches. Notify the CRS when the RCIC is in service and water level is being maintained.

Plant Systems
5.1ASD Failure to Scram
SKL05*****

System	Reactor Protection System	Mode	3
Estimated Time	25 minutes	Location(s)	Control Room 4160V Switchgear Room Auxiliary Rely Room RPS MG Set Room 1A
Evaluation Method(s)	Simulated Performance of Directed Activities		
Alternate Path	Yes (Reactor does not scram when a manual reactor scram is inserted per 5.1ASD step 4.2.1, contact failure in one Scram pushbutton)		

References:

Procedure 2.1.5, Reactor SCRAM, Revision 51
Procedure 5.1ASD, Alternate Shutdown, Revision 2

Examiner		Trainee	
Observer		Examination Date	
Result:	SATISFACTORY	UNSATISFACTORY	

Examiner Directions to Candidate:

I will explain or provide initial conditions, inform you about which step(s) to discuss or simulate (if any), and provide initiating and followup cues. It is necessary that you verbalize your actions and, for simulations, request information concerning indications and expected responses to your actions. When you complete the task, the objective for this job performance measure will be satisfied.

Task Evaluation Standard(s):

- Procedure 5.1ASD, Alternate Shutdown, Revision 2

Safety Considerations:

- Actual performance of 5.1ASD in the Control Room, Auxiliary Relay Room, or RPS MG Set Room 1A, could result in a plant SCRAM. The candidate shall not manipulate any actual controls during this JPM.

Performance Consequences:

- Incorrect application of 5.1ASD could lead to personnel injury to the operations crew, as well as to increasing the probability and/or severity of fuel damage in an accident situation.

Tools and Methods:

- Simulation of performing steps in 5.1ASD in the actual Control Room and at the Auxiliary Relay Room, or RPS MG Set Room 1A.

Human Interfaces:

- The candidate must obtain permission in the Control Room prior to simulating activities necessary to complete this JPM.

Examiner Notes:

- This JPM begins in the plant Control Room.
- This JPM requires entry into the Radiologically Controlled Area (RCA). The candidate and examiner should enter using RWP *****
- The candidate should not simulate tripping all Reactor Feed Pumps, Condensate Booster Pumps, and Condensate Pumps per 5.1ASD step 4.2.4.2 through 4.2.4.4. One pump train should remain in operation.
- The candidate should not simulate tripping the Recirc MG Sets from the Control Room because a PCIS Group 6 signal is not present

Initial Condition(s):

- The plant has been operating at 100% rated thermal power.
- A strong chemical odor has been detected in the Control Room. Operators also notice eye and lung irritation.

Provide the Candidate initial conditions located at page 7 of 7

Terminating Condition(s):

- After the candidate simulates opening the AC INPUT MOT Breaker to RPS MG Set 1A, the JPM is complete.

Initiating Cue:

The Shift Manager has ordered an evacuation of the Control Room due to toxic gas using 5.1ASD. You have been directed to:

- Perform 5.1ASD steps 4.2.1 to 4.2.5
- Perform 5.1ASD Attachment 2, Control Building/Critical Switchgear Room Operator
- Obtain any supplies or equipment necessary to perform Attachment 2

Candidate Action	Responding Cue	Completed
Observes panel 9-5 ("as found condition")	No annunciators are lit. Conditions are normal for 100% power operations.	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> plant SCRAM using the SCRAM pushbuttons	Reactor SCRAM Pushbutton A <u>is not lit</u> Reactor SCRAM Pushbutton B <u>is lit red</u>	<input type="checkbox"/> YES <input type="checkbox"/> NO
Observes SCRAM Indicating lights	4 Group A lights <u>are lit</u> 4 Group B lights <u>are out (not lit)</u>	<input type="checkbox"/> YES <input type="checkbox"/> NO
Observes Panel 9-5 Annunciators	9-5-2/A-1 <u>is not lit</u> 9-5-2/A-3 <u>is lit</u>	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> tripping the Main Turbine Generator	Turbine is tripped; expected annunciators are lit	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> tripping the Reactor Feed Pump(s)	Feed Pump is tripped with expected indications [note 1 RFP should remain running]	<input type="checkbox"/> YES <input type="checkbox"/> NO
Comments:		

Candidate Action	Responding Cue	Completed
<u>Simulates</u> tripping the Condensate Booster Pump(s)	Condensate Booster Pump is tripped with expected indications [note 1 CBP should remain running]	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> tripping the Condensate Pump(s)	Condensate Pump is tripped with expected indications [note 1 Condensate Pump should remain running]	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> obtaining required standard equipment: radio, flashlight, keys, screwdriver	Equipment is obtained [to be successful, the candidate must show the examiner each piece of required equipment]	<input type="checkbox"/> YES <input type="checkbox"/> NO
NOTE: 5.1ASD §4.1.2 directs personnel NOT to enter the Cable Spreading Room		
<u>Simulates</u> obtaining manual breaker charging ratchet in the 4160V Switchgear Room	Ratchet is obtained [to be successful, the candidate must show the examiner the ratchet]	<input type="checkbox"/> YES <input type="checkbox"/> NO
IF candidate simulates calling the CRS for direction whether to isolate RCIC and/or de-energize the RPS MG Sets, THEN respond that the candidate is directed to isolate RCIC and de-energize the RPS MG Sets		
Goes to the Auxiliary Relay Room	N/A	
Locates the RCIC Isolation Switch	RCIC Isolation Switch is in NORMAL	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> placing the RCIC Isolation switch to ISOLATE	RCIC Isolation switch is in ISOLATE	<input type="checkbox"/> YES <input type="checkbox"/> NO
Goes to RPS MG Set Room 1A	N/A	
Locates CDP-1A Breaker 2	CDP-1A Breaker 2 is CLOSED	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> opening CDP-1A Breaker 2	CDP-1A Breaker 2 is OPEN	<input type="checkbox"/> YES <input type="checkbox"/> NO
Comments:		

Candidate Action	Responding Cue	Completed
Locates AC INPUT MOT Breaker to RPS MG Set 1A	AC INPUT MOT Breaker is CLOSED	<input type="checkbox"/> YES <input type="checkbox"/> NO
<u>Simulates</u> opening AC INPUT MOT Breaker to RPS MG Set 1A	AC INPUT MOT Breaker is OPEN	<input type="checkbox"/> YES <input type="checkbox"/> NO
Comments:		

Termination Cue:

After the candidate simulates opening the AC INPUT MOT Breaker to RPS MG Set 1A, the JPM is complete.

Information for Candidate

Candidate Instructions:

The examiner will explain or provide initial conditions, inform you about which step(s), if any, to discuss or simulate, and will provide initiating and followup cues. It is necessary that you verbalize your actions and, for simulations, specifically request information concerning indications and expected responses to your actions. When you complete the task, the objective for this job performance measure will be satisfied.

Initial Condition(s):

- The plant has been operating at 100% rated thermal power.
- A strong chemical odor has been detected in the Control Room. Operators also notice eye and lung irritation.

Initial Cue or Direction:

The Shift Manager has ordered an evacuation of the Control Room due to toxic gas using 5.1ASD. You have been directed to:

- Perform 5.1ASD steps 4.2.1 to 4.2.5
- Perform 5.1ASD Attachment 2, Control Building/Critical Switchgear Room Operator
- Obtain any supplies or equipment necessary to perform Attachment 2

Task No.: 200134I0504

=====

Task Title: Respond to No Break Power Panel Failure (Control Bldg. Actions) (Alternate Path)

=====

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

ALTERNATE PATH

Additional Program Information:

1. Appropriate Performance Locations: Plant
2. Appropriate Trainee Level: SO / RO / SRO
3. Evaluation Method: **Simulate**
4. Performance Time: 25 minutes
5. NRC K/A: 262002 K4.01(3.4/3.4)

Directions to Examiner:

<p>NOTE: This is an Alternate Path JPM. The alternate source supplying load will not work and the manual bypass switch must be used.</p>
--

1. This JPM evaluates the trainee's ability to respond to a no-break power panel failure
2. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
3. Give the trainee his copy of the Directions to the Trainee (Attachment 1) when ready to start the JPM.
4. Brief the trainee and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin you are to perform the assigned Control Building Operator's actions to respond to a no break power panel failure. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

=====

Task No.: 200134I0504

Task Title: Respond to No Break Power Panel Failure (Control Bldg. Actions) (Alternate Path)

General Conditions:

1. The plant has experienced a no break power panel failure.
2. The Rx has scrambled.
3. An attempt to transfer NBPP to MCC-R by placing NBPP PWR TRANSFER switch to MCC-R has failed.
4. The electricians have determined that the fault is not in the NBPP itself.
5. Both switches have been placed to ALT at the 120v AC supplies for the gaitronics.
6. Control Room Operators have performed actions 4.1 through 4.3.14 of 5.3NBPP.

General References:

1. 5.3NBPP (NO BREAK POWER FAILURE)

General Tools and Equipment:

1. Key for access to Control Building 903' doors.

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

You have been assigned to carry out actions for a no break power panel failure in accordance with 5.3NBPP. The Control Room Supervisor (CRS) directs you to perform all the necessary Control Building Operator's actions for restoring power from the Alternate Supply (MCC-R). Notify the CRS when the NBPP is energized.

Task No.: 200134I0504

Task Title: Respond to No Break Power Panel Failure (Control Bldg. Actions) (Alternate Path)

Performance Checklist	Standard	Initials
1. Obtain a copy of 5.3NBPP	Obtain a copy of 5.3NBPP, NO BREAK POWER FAILURE	_____
2. Ensure MCC-R FEED TO NBPP is in ON.	<p>Ensure EE-DSC-NBPP(AC), MCC-R FEED TO NBPP TRANSFORMER (Cable Spreading near NBPP), is in ON.</p> <p>CUE: Indicate the handle is in the UP position.</p>	_____*
3. Contact the Rx Building Operator.	<p>Contacts the Reactor Building Operator to ensure that MCC-R, Breaker 2B, NO BREAK AC POWER SUPPLY, is closed and reset.</p> <p>CUE: Respond as the Rx Bldg Operator, that MCC-R, Breaker 2B, NO BREAK AC POWER SUPPLY, is closed and reset.</p>	_____*
4. Open breaker	<p>Open INVERTER OUTPUT breaker.</p> <p>CUE: Indicate the handle is in the DOWN position.</p>	_____*
5. Ensure breaker is closed.	<p>Ensure SUPPLY TO NBPP breaker is closed.</p> <p>CUE: Indicate the handle is in the UP position.</p>	_____
6. Ensure breaker is closed.	<p>Ensure ALTERNATE AC INPUT TO STATIC SWITCH breaker is closed.</p> <p>CUE: Indicate the handle is in the UP position.</p>	_____

Task No.: 200134I0504

Task Title: Respond to No Break Power Panel Failure (Control Bldg. Actions) (Alternate Path)

Performance Checklist	Standard	Initials
7. Depress button.	Depress ALTERNATE SOURCE SUPPLYING LOAD button. CUE: The red light is off.	_____
8. Place MAN BP SW to ALT SOURCE TO LOAD.	Place MANUAL BYPASS SWITCH to ALTERNATE SOURCE TO LOAD. CUE: Point to ALTERNATE SOURCE TO LOAD position.	_____ *
9. Depress ALT SOURCE SUPPLYING LOAD button.	Depress ALTERNATE SOURCE SUPPLYING LOAD button. CUE: The red light is on.	_____ *
NOTE: The Gaitronics do not need to be transferred		
10. Notifies CRS.	Notifies CRS that NBPP is energized. CUE: As the CRS respond to the report.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin you are to perform the assigned Control Building Operator's actions to respond to a no break power panel failure. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

General Conditions:

1. The plant has experienced a no break power panel failure.
2. The Rx has scrambled.
3. An attempt to transfer NBPP to MCC-R by placing NBPP PWR TRANSFER switch to MCC-R has failed.
4. The electricians have determined that the fault is not in the NBPP itself.
5. Both switches have been placed to ALT at the 120v AC supplies for the gaitronics.
6. Control Room Operators have performed actions 4.1 through 4.3.14 of 5.3NBPP.

Initiating Cues:

You have been assigned to carry out actions for a no break power panel failure in accordance with 5.3NBPP. The Control Room Supervisor (CRS) directs you to perform all the necessary Control Building Operator's actions for restoring power from the Alternate Supply (MCC-R). Notify the CRS when the NBPP is energized.

Task No.: 200335G0503

Task Title: PAR Table Top (#5)

Trainee: _____ Examiner: _____

Pass ____ Fail ____ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: Classroom / Simulator
2. Appropriate Trainee Levels: SRO / STE
3. Evaluation Method: __ Simulate __ Perform
4. Performance Time: 10 minutes
5. NRC K/A: 2.4.44 (2.1 / 4.0)

Directions to Examiner:

NOTE: THIS IS A TIME CRITICAL JPM

- 10 minute time limit
 - The time starts when in the control room or simulator and the examiner has told the student to begin.
 - The clock ends when the completed Attachment 1 is returned to the examiner.
1. This JPM evaluates the trainee's ability to make a PAR Recommendation.
 2. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
 3. Give the trainee his copy of the Directions to the Trainee (Attachment 1) when ready to start the JPM.
 4. DO NOT allow the trainee to pre-review the associated procedures.
 5. Brief the trainee and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to determine Protective Action Recommendations for the provided conditions. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

During task performance, it is recommended that you limit your discussion/demonstration to the minimum required. The examiner will ask questions of you if necessary to understand your actions..

Task No.: 200335G0503

Task Title: PAR Table Top (#5)

THIS IS A TIME CRITICAL JPM.

General Conditions:

1. A General Emergency has been declared under EAL 2.4.1.
2. There IS a radioactive release in excess of ODAM limits at this time.
3. A steam leak exists in the Turbine Building.
4. Both Inboard and Outboard MSIV on "B" Main Steam Line will not close.
5. The core IS degraded.
6. The stability class is "E".
7. The wind is at 15 mph.
8. The wind is from 0 °
9. There is NO precipitation

DOSE Projection Data				
Distance From Plant	Projected Integrated Dose (Rem)		Projected Dose Rate (Rem/hr)	
	TEDE	CDE (Thyroid)	TEDE	CDE (Thyroid)
Site Boundary	2.60E+00	4.12E+01	6.51E-01	1.03E+01
2 Miles	9.21E-01	1.46E+01	2.30E-01	3.65E+00
5 Miles	2.98E-01	4.72E+00	7.46E-02	1.18E+00
10 Miles	1.53E-01	2.43E+00	3.84E-02	6.07E-01

General References:

1. Procedure 5.7.1, EAL Matrix
2. Procedure 5.7.6, Attachment 3
3. Procedure 5.7.20

General Tools and Equipment:

1. None

Task No.: 200335G0503

=====

Task Title: PAR Table Top (#5)

=====

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.
3. ***This JPM must be completed within 10 minutes.*** The time starts when the examiner tell the student to begin and ends when the completed Attachment 1 has been returned to the evaluator.

Initiating Cue(s):

You are to determine the appropriate Protective Action Recommendations (PARs) for the provided conditions. Complete the PAR table below and return this Attachment to the examiner when you have completed this task.

Task No.: 200335G0503

Task Title: PAR Table Top (#5)

Performance Checklist	Standards	Initials
RECORD START TIME _____		
NOTE: Per 5.7.2, the trainee must reference 5.7.20 for the provided conditions.		
1. Refer to Procedure 5.7.2.	The operator refers to Procedure 5.7.2. Determine 5.7.20 must be used for PARs.	_____
2. Refer to Procedure 5.7.20.	The operator refers to Procedure 5.7.20.	_____
3. Determines affected sectors.	The operator determines the affected sectors for wind direction of 0°. Sectors H, J, K	_____ *
4. Determines Sectors to Evacuate	The Operator determines the following Evacuation sectors: <u>Evacuate</u> 0 - 2 miles All sectors 2 - 5 miles Sectors H, J, K 5 - 10 miles	_____ *
5. Determines Sectors that must Go Indoors and monitor EAS/EBS	The Operator determines the following GO INDOORS sectors: <u>GO INDOORS</u> 2 - 5 miles All remaining sectors 5 - 10 miles All remaining sectors	_____ *
6. Determines no protective actions are required past 10 miles.	Determines no protective actions affect areas beyond 10 miles.	_____

Task No.: 200335G0503

Task Title: PAR Table Top (#5)

Performance Checklist	Standards	Initials
7. Turns in completed paperwork.	Returns completed Attachment 1 to evaluator.	
RECORD STOP TIME _____ TOTAL TIME _____		
8. JPM completion time	JPM completed in 10 minutes or less.	*

ATTACHMENT 1 (Page 1 of 2)

Directions to Trainee:

When I tell you to begin, you are to determine Protective Action Recommendations for the provided conditions. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

During task performance, it is recommended that you limit your discussion/demonstration to the minimum required. The examiner will ask questions of you if necessary to understand your actions..

THIS IS A TIME CRITICAL JPM.

General Conditions:

1. A General Emergency has been declared under EAL 2.4.1.
2. There IS a radioactive release in excess of ODAM limits at this time.
3. A steam leak exists in the Turbine Building.
4. Both Inboard and Outboard MSIV on "B" Main Steam Line will not close.
5. The core IS degraded.
6. The stability class is "E".
7. The wind is at 15 mph.
8. The wind is from 0 °
9. There is NO precipitation

DOSE Projection Data				
Distance From Plant	Projected Integrated Dose (Rem)		Projected Dose Rate (Rem/hr)	
	TEDE	CDE (Thyroid)	TEDE	CDE (Thyroid)
Site Boundary	2.60E+00	4.12E+01	6.51E-01	1.03E+01
2 Miles	9.21E-01	1.46E+01	2.30E-01	3.65E+00
5 Miles	2.98E-01	4.72E+00	7.46E-02	1.18E+00
10 Miles	1.53E-01	2.43E+00	3.84E-02	6.07E-01

ATTACHMENT 1 (Page 2 of 2)

Initiating Cue(s):

You are to determine the appropriate Protective Action Recommendations (PARs) for the provided conditions. Complete the PAR table below and return this Attachment to the examiner when you have completed this task.

Protective Action Recommendations (PARS)			
	None	Evacuate Sectors	Go indoors and monitor EAS/EBS in Sectors
0-2 Miles			
2-5 Miles			
5-10 Miles			

REMARKS for 5.7.6 Attachment 3: _____

Task No.: 341013O0303

Task Title: Approve Radioactive Discharge / Release Permit

Trainee: _____ Examiner: _____

Pass:____ Fail:____ Examiner Signature:_____ Date:_____

Additional Program Information:

1. Appropriate Performance Locations: CR / SIM
2. Appropriate Trainee level: SRO
3. Evaluation Method: Perform
4. Performance Time: 10 minutes
5. NRC K/As 2.1.34 (2.9); 2.1.32 (3.4/3.8)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to complete a radioactive discharge / release permit.
2. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
3. Give the trainee his copy of the Directions to the Trainee (Attachment 2) and Liquid Radwaste Discharge Form (Attachment 1) when ready to start the JPM.
4. Brief the trainee, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to review and complete the radioactive discharge/release permit as Shift Manager. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

General Conditions:

1. The plant is operating at 100%.
2. CWP A, B, and D are in service.
3. De-icing is in progress.
4. The FDST radioactive discharge was started at 0905, Jan 6.
5. The FDST radioactive discharge was stopped at 1355, Jan 6.
6. FDST final level is 10.5%.

Task No.: 341013O0303

Task Title: Approve Radioactive Discharge / Release Permit

General References:

1. 8.8.11, Liquid Radioactive Waste Discharge Authorization

General Tools and Equipment:

1. Scientific calculator

Special Conditions, References, Tools, Equipment:

1. Critical steps denoted by “*”.

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

As Shift Supervisor complete the Liquid Radioactive Waste Discharge Form for the FDST and inform me when all required actions are complete.

Task No.: 341013O0303

Task Title: Approve Radioactive Discharge / Release Permit

Performance Checklist	Standards	Initials
1. Records Stop Run Data in Section 5.	Operator records Date as 1/6/xx, records time as 1355 and records % tank level as 10.5.	_____
2. Records dilution flow.	Operator refers to Section 4.1 and records dilution flow of 308400 gpm.	_____ *
3. Records volume of release.	Operator calculates volume of release as 16368.625 (using Usable tank volume and start and stop tank %). NOTE: Acceptable value: 16368 to 16369 gallons.	_____ *
4. Records total time of discharge.	Operator calculates total time of discharge in minutes (subtracting start time from end time) and records 290 minutes.	_____ *
5. Records discharge flow.	Operator calculates discharge flow (divides volume of release by total time of discharge) and records 56.44 gpm.	_____ *
6. Records River Level.	Operator records river level as 880 ft MSL. #CUE: River level is 880 ft MSL.	_____
7. Removes Discharge In Progress Tags from running CWP's.	Operator would remove or direct control room operator to remove the tags from the running CWP's. #CUE: Tags are removed.	_____

Task Title: Approve Radioactive Discharge / Release Permit

Performance Checklist	Standards	Initials
8. Records total river flow.	<p>Operator contacts chemistry for total river flow and records 5.9E7 l/min..</p> <p>#CUE: Chemistry reports total river flow is 5.9 E7 l/min. (This may be completed by the Chemist after SS signature.)</p>	_____
9. Completes discharge permit.	<p>Operator signs form as Shift Manager and forwards to Chemistry for review.</p> <p>#CUE: Accept form as Chemist.</p>	_____

ATTACHMENT 1
LIQUID RADWASTE DISCHARGE FORM

Section 1. REQUEST FOR ANALYSIS OF RADIOACTIVE LIQUID WASTE PRIOR TO DISCHARGE

To: Chemistry From: Shift Supervisor Tank To Be Discharged: FDST

Started Recirculation For Sample: Time: 0300 Date: 1/6/XX

Estimated Volume To Be Discharged: 98-10.5% = 87.5%

Shift Supervisor: Mark Helen Time: 0555 Date: 1/6/xx

Section 2. THIS SECTION TO BE COMPLETED BY PERSON TAKING SAMPLE

Monitor Source Check

Informed Control Room And Performed Source Check - Initials: REW

Sample Point: 18 Time: 0635 Date: 1/6/xx

Signature: Ray Monamo

Section 3. AUTHORIZATION TO RELEASE RADIOACTIVE LIQUID WASTE

To: Shift Supervisor From: Chemistry Release Authorization Number: _____

Total $\mu\text{Ci/ml}$: 3.74E-5

Total Concentration is $< 1.0\text{E-}02 \mu\text{Ci/ml}$ YES/NO NO Signature: Ray Monamo

31 Day Dose, Percent Of Annual Limit For Each Value Is $\leq 2.0\text{E}+00$

YES/NO Signature: Ray Monamo

You Are Authorized To Release Subject Tank With Either Of Following Restrictions:

Maximum Liquid Waste Discharge Rate (gpm)

1) 100 2) N/A 3) N/A

Minimum Dilution Flow To Canal (gpm)

1) 159,000 2) 159,000 3) 159,000

Discharge Monitor Alarm Setpoint ($\mu\text{Ci/ml}$)

1) 6.22E-3 2) N/A 3) N/A

NOTE - Terminate Discharge If Above Specifications Cannot Be Maintained. Contents Of This Tank Are Within Chemical Parameters For Discharge.

Chemistry: Ray Monamo Time: 0707 Date: 1/6/xx

ATTACHMENT 1
LIQUID RADWASTE DISCHARGE FORM

Section 4 SHIFT SUPERVISOR APPROVAL TO RELEASE

4.1 Circle Appropriate Discharge Canal Flow Rate:

NUMBER OF OPERATING CW PUMPS	AVERAGE CW DISCHARGE FLOWRATE (gpm)	
	DE-ICING	NO DE-ICING
4	378,600	631,000
3	308,400	514,000
2	193,200	322,000
1	118,800	198,000

4.2 To: Operations Personnel From: Shift Supervisor

The Subject Tank Contents Are Approved For Release Subject To The Following Restrictions:

- 1) Maximum Liquid Disch Rate: 100 gpm (Section 3)
- 2) Minimum Dilution Flow To Canal Of: 159000 gpm (Section 3)
- 3) Alarm Limits Specified (Section 3)
- 4) Tank Volume Verified: 98 (Compare To Section 1)
- 5) DISCHARGE IN PROGRESS tags Installed On Running Circ Water Pumps.

Approval To Release:

Shift Supervisor: Mark Helen Time: 0804 Date: 1/6/xx

ATTACHMENT 1
LIQUID RADWASTE DISCHARGE FORM

Section 5 To: Chemist From: Shift Supervisor

The Subject Discharge Has Been Completed And The Following Data Obtained During The Discharge:

START RUN NUMBER	DATE	TIME	% TANK LEVEL	STOP RUN NUMBER	DATE	TIME	% TANK LEVEL
1	1/6/xx	0905	98	1			
2				2			
3				3			
4				4			

Usable Tank Volumes (0% to 100%)

FDST - 18,707 gal

WST A - 20,015 gal

WST B - 20,015 gal

- 1) Dilution Flow (Section 4.1): _____ gpm
- 2) Volume Of Release: _____ gal
- 3) Total Time Of Discharge: _____ min
- 4) Discharge Flow: _____ gpm
- 5) River Level: _____ ft MSL
- 6) Remove DISCHARGE IN PROGRESS tags from running Circ Water Pumps.
- 7) Total River Flow: _____ l/min
(Determined By The Chemist)

Shift Supervisor: _____ Time: _____ Date: _____

Chemist Review: _____ Date: _____

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to review and complete the radioactive discharge/release permit as Shift Manager. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

General Conditions:

1. The plant is operating at 100%.
2. CWP A, B, and D are in service.
3. De-icing is in progress.
4. The FDST radioactive discharge was started at 0905, Jan 6.
5. The FDST radioactive discharge was stopped at 1355, Jan 6.
6. FDST final level is 10.5%.

Initiating Cue(s):

As Shift Manager complete the Liquid Radioactive Waste Discharge Form for the FDST and inform me when all required actions are complete.

Task No.: 200311G0303

=====

Task Title: Assess the Impact of a Missed TS-TRM Surv on Safety Related Equip.

=====

Trainee: _____ Examiner: _____

Pass:____ Fail:____ Examiner Signature:_____ Date:_____

Additional Program Information:

1. Appropriate Performance Locations: CR / SIM
2. Appropriate Trainee level: SRO
3. Evaluation Method: Perform
4. Performance Time: 20 minutes
5. NRC K/As 2.2.12 (3.0/3.4)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to assess the impact of a missed TS-TRM surveillance on safety related equipment.
2. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
3. Give the trainee his copy of the Directions to the Trainee (Attachment 2) when ready to start the JPM.
4. Brief the trainee, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to assess the impact of the missed RCIC surveillance 6.RCIC.102 on safety related equipment in accordance with Procedure 0.49. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

=====

General Conditions:

1. The plant is operating at 100%.
2. Core Spray Div I is tagged out for maintenance, day 2 of its LCO, expected back tomorrow at 13:00 hours.
3. It is 21:00 Saturday Night.
4. SAP is unavailable

General References:

Task No.: 200311G0303

Task Title: Assess the Impact of a Missed TS-TRM Surv on Safety Related Equip.

1. 0.26, Surveillance Program
2. 0.49, Schedule Risk Assessment

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Critical steps denoted by “*”.

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

As the Shift Manager you have just be notified that the RCIC Surveillance 6.RCIC.201, RCIC IST and 92 Day Test, was missed last month and it needs to be performed. The RCIC Surveillance drop dead date was 7 days ago at 21:00. You will need to perform an assessment to see if it can be run and when. Contact the Operations Manager with the results.

Task No.: 200311G0303

Task Title: Assess the Impact of a Missed TS-TRM Surv on Safety Related Equip.

Performance Checklist		Standards	Initials
1.	Obtain Procedure 0.49.	The SM obtains a current copy of procedure 0.49.	_____
2.	Performs risk assessment.	The SM performs a missed surveillance risk assessment in accordance with Procedure 0.49, Schedule Risk Assessment Section 6.	_____
3.	Components identified.	The SM ensures that the components have been identified, per Procedure 0.26, that have not had the surveillance requirements met.	_____
4.	Identifies the risk codes.	The SM identifies the risk codes associated with these components from the nuclear characteristics in SAP. CUE: SAP is unavailable	_____
5.	Determines risk code color.	The SM determines that the Risk Code color is ORANGE from Attachment 1. And notifies Risk Management to modify the schedule or restore the availability of Core Spray Div I. CUE: As Risk Management respond that the schedule does not need to be changed, and that Core Spray is due back tomorrow at 13:00.	_____ *
6.	Schedules RCIC Surveillance.	The SM will schedule the RCIC surveillance at the first reasonable opportunity following Core Spray's return to service, but not to exceed three days.	_____ *

Task No.: 200311G0303

Task Title: Assess the Impact of a Missed TS-TRM Surv on Safety Related Equip.

Performance Checklist	Standards	Initials
7. Notifies OM.	<p>The SM notifies the Operations Manager that the RCIC surveillance will be scheduled to be performed following Core Spray Div I return to service, but not to exceed three days.</p> <p>CUE: Respond as the Operations Manager and acknowledge the report.</p>	<hr/>

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to assess the impact of the missed RCIC surveillance 6.RCIC.102 on safety related equipment in accordance with Procedure 0.49. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

General Conditions:

1. The plant is operating at 100%.
2. Core Spray Div I is tagged out for maintenance, day 2 of its LCO, expected back tomorrow at 13:00 hours.
3. It is 21:00 Saturday Night.
4. SAP is unavailable

Initiating Cue(s):

As the Shift Manager you have just be notified that the RCIC Surveillance 6.RCIC.201, RCIC IST and 92 Day Test, was missed last month and it needs to be performed. The RCIC Surveillance drop dead date was 7 days ago at 21:00. You will need to perform an assessment to see if it can be run and when. Contact the Operations Manager with the results.

**Conduct of Operations,
Determine Required On-Shift Staffing**

System	Administrative	Mode	2
Estimated Time	10 minutes	Location	Not Applicable
Evaluation Method(s)	Perform using Procedure 2.0.3		
Alternate Path	No		

References:

Procedure 2.0.3, Revision 49, Section 10, Control Room and Station Shift Staffing Requirements

Examiner		Trainee	
Observer		Examination Date	
Result:	SATISFACTORY	UNSATISFACTORY	

Examiner Directions to Candidate:

I will explain or provide initial conditions, inform you about which step(s) to discuss or simulate (if any), and provide initiating and followup cues. When you complete the task, the objective for this job performance measure will be satisfied.

Task Evaluation Standard(s):

- Procedure 2.0.3, Revision 49, Section 10.

Safety Considerations:

- No safety considerations are associated with performing this JPM.

Performance Consequences:

- Incorrectly determining required on-shift staffing could result in a crew not being staffed to respond to plant transients or implement the station Emergency Plan as required.

Tools and Methods:

- Not Applicable.

Human Interfaces:

- None.

Examiner Notes:

- None.

Initial Condition(s):

- The plant is operating in Mode 2.
- You are taking the watch as Shift Manager during day shift.
- The first reactor feedwater pump discharge valve is scheduled to be opened at 2245 hours today.

Provide the Candidate initial conditions located at page 5 of 6

Terminating Condition(s):

- The candidate has determined which additional on-shift positions are required to be filled.

Initiating Cue:

The following personnel are present on-shift:

- Shift Manager
- Control Room Supervisor
- Licensed Operator (ATCO)
- Licensed Operator (BOP)
- Station Operator (Shift Communicator)
- Station Operator (Fire Brigade)
- Station Operator (Fire Brigade)
- SRO (Observing Panel 9-5)
- Utility Personnel (Fire Brigade)

Are any additional personnel REQUIRED to be on shift? IF SO, determine by position which additional personnel are required. If any on-shift FUNCTIONS (e.g. Shift Communicator, Fire Brigade) are also REQUIRED to be filled, determine which function(s) are required.

The required on-shift crew when the plant is in Mode 2 prior to opening the first reactor feed pump discharge valve is:

Reference	Initial Conditions	Determined by Candidate
10.1.1	Shift Manager (SRO)	
10.1.1	Control Room Supervisor (SRO)	
10.1.5		Shift Technical Engineer
10.1.2 10.1.6.2	Licensed Operator (ATCO)	
10.1.2	Licensed Operator (BOP)	
10.1.2 10.2.4.2		Licensed Operator (WCO, Fire Brigade Leader)
10.1.3 10.1.6.4	Station Operator 1 (Shift Communicator)	
10.1.3 10.2.4.2	Station Operator 2 (Fire Brigade 2)	

10.1.3 10.2.4.2	Station Operator 3 (Fire Brigade 3)	
10.1.4		Health Physics Technician
10.3.1	Additional SRO (Panel 9-5)	
10.3.2		Additional RO (Control Rod Verification)
10.3.3		Additional Station Operator
10.2.4.2	Utility Staff 1 (Fire Brigade 4)	
10.2.4.2		Utility Staff 2 (Fire Brigade 5)

Termination Cue:

This JPM is complete when the candidate determines which additional on-shift positions are required to be filled.

Information for Candidate

Candidate Instructions:

The examiner will explain or provide initial conditions, inform you about which step(s), if any, to discuss or simulate, and will provide initiating and followup cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Condition(s):

- The plant is operating in Mode 2.
- You are taking the watch as Shift Manager during day shift.
- The first reactor feedwater pump discharge valve is scheduled to be opened at 2245 hours today.

Initial Cue or Direction:

The following personnel are present on-shift:

- Shift Manager
- Control Room Supervisor
- Licensed Operator (ATCO)
- Licensed Operator (BOP)
- Station Operator (Shift Communicator)
- Station Operator (Fire Brigade)
- Station Operator (Fire Brigade)
- SRO (Observing Panel 9-5)
- Utility Personnel (Fire Brigade)

Are any additional personnel REQUIRED to be on shift? IF SO, determine by position which additional personnel are required. If any on-shift FUNCTIONS (e.g. Shift Communicator, Fire Brigade) are also REQUIRED to be filled, determine which function(s) are required.

If additional personnel or functions are required, record your answer(s) on the attached form.

Answer Sheet

Are any additional personnel REQUIRED to be on shift? IF SO, determine by position which additional personnel are required. If any on-shift FUNCTIONS (e.g. Shift Communicator, Fire Brigade) are also REQUIRED to be filled, determine which function(s) are required.

Position(s) Required

Function(s) Required

Task No.341014O0303

Task Title: Reportable Occurrences to the NRC (#3)

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: SIM
2. Appropriate Trainee Level: SRO / STE
3. Evaluation Method: Perform
4. Performance Time: 15 Minutes
5. NRC K/A 2.1.2; 2.1.17; 2.1.20

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform the required actions for a 8 hour non-emergency NRC notification due scram that occur during startup prior to criticality.
2. **Another instructor in the booth should have a copy of the notification form (Attachment 6) and complete it as the information is relayed over the phone.**
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space, if desired, by the examiner.
4. Give the trainee his copy of the Directions to the Trainee (Attachment 1) when ready to start the JPM.
5. Brief the trainee and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to determine NRC reportability and make any associated communications. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

During task performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

Any check of your work by another person will always be in agreement, regardless of the accuracy of your information or action.

Task No.341014O0303

Task Title: Reportable Occurrences to the NRC (#3)

General Conditions:

1. A plant startup was in progress.
2. The reactor was approaching criticality when a reactor scram occurred due to an actual high scram discharge volume level (leaking scram outlet valves).
3. All control rods fully inserted on the scram.
4. The lowest RPV water level reached was + 20" (NR).
5. Current reactor coolant temperature is 195°F.
6. The Shift Supervisor is unavailable and has delegated you to handle this situation in his place.
7. The board operators are busy with the plant transient and are unavailable to support your evolution. You must personally perform any communications required for this situation.

General References:

1. Conduct of Operations Procedure 2.0.5

General Tools and Equipment:

1. Site communication System.
2. Communicator

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".
2. NUREG 1022

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

Determine what notification requirements exist for the NRC (if any) and complete any forms and/or communications required by this event (if any).

Task No.341014O0303

Task Title: Reportable Occurrences to the NRC (#3)

Performance Checklist	Standards	Initials
1. Refers to 2.0.5.	Refers to body of procedure, Attachment 1 and Attachment 4.	_____
2. Determine appropriate reporting category per 2.0.5.	Determines a 8 hour report is required (per 50.72(b)(2)(iv)(A) Specified System Actuation).	_____ *
3. Determine appropriate reporting category per NUREG 1022.	Determines a 8 hour report is required.	_____ *
4. Performs sub step 2.4.1.1.a by documenting EVENT TIME & ZONE	Time entered on Attachment 6 is the current time. Zone is Central Standard Time (Central Daylight Savings Time) #CUE: IF asked, the scram occurred 15 minutes ago.	_____ *
5. Document the time that event was determined to be reportable in the EVENT DESCRIPTION section.	Include time the condition was reportable and description of the condition. #CUE: IF asked, the scram occurred 15 minutes ago.	_____ *
6. Complete remaining sections of Attachment 6 Event Notification Worksheet	Notify resident only, everything is understood, Systems functional as applicable, Mode 4, no release.	_____ *
7. Complete Attachment 7.	Checklist completed as an INITIAL report.	_____

Task No.341014O0303

Task Title: Reportable Occurrences to the NRC (#3)

Performance Checklist	Standards	Initials
8. Ensure report is accurate.	<p>Ensures that the report is accurate and properly filled out.</p> <p># CUE: Another qualified person has reviewed the report and has initialed Attachment 7 that the attachment has been completed and is accurate. He is now unavailable.</p>	<p>_____ *</p>
<p>9. Make the report.</p> <p>NOTE: The other instructor in the booth should have a copy of the notification form (Attachment 6) and complete it as the information is relayed over the phone.</p>	<p>Calls the NRC using a number in the Emergency Telephone Directory (301-415-0550), and provides all the information on Attachment 6. In addition he shall record the Event Number and Notification time on Attachment 6.</p> <p># CUE: Read the information back as provided by the trainee. Then state the event number is YY-0076 and the time is (<u>current time</u>). I have no additional questions at this time.</p>	<p>_____ *</p>

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to determine NRC reportability and make any associated communications. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

During task performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

Any check of your work by another person will always be in agreement, regardless of the accuracy of your information or action.

General Conditions:

1. A plant startup was in progress.
2. The reactor was approaching criticality when a reactor scram occurred due to an actual high scram discharge volume level (leaking scram outlet valves).
3. All control rods fully inserted on the scram.
4. The lowest RPV water level reached was + 20" (NR).
5. Current reactor coolant temperature is 195°F.
6. The Shift Supervisor is unavailable and has delegated you to handle this situation in his place.
7. The board operators are busy with the plant transient and are unavailable to support your evolution.
You must personally perform any communications required for this situation.

Initiating Cue(s):

Determine what notification requirements exist for the NRC (if any) and complete any forms and/or communications required by this event (if any).

**Radiation Control,
Perform Dose Assessment (#3)**

System	Administrative	Mode	3
Estimated Time	10 minutes	Location	Simulator
Evaluation Method(s)	Perform the Calculation using PMIS and Simulator		
Alternate Path	No		

References:

EPIP 5.7.17, Dose Assessment, Revision 32

Examiner		Trainee	
Observer		Examination Date	
Result:	SATISFACTORY	UNSATISFACTORY	

Examiner Directions to Candidate:

I will explain or provide initial conditions, inform you about which step(s) to discuss or simulate (if any), and provide initiating and followup cues. It is necessary that you verbalize your actions and, for simulations, request information concerning indications and expected responses to your actions. When you complete the task, the objective for this job performance measure will be satisfied.

Task Evaluation Standard(s):

- Procedure 5.7.17.
- Integrated Dose (TEDE, CDE) and Downwind Affected Sectors as calculated by the Candidate using CNS Dose matches the example CNS Dose Report Answer Key (Attachment 1).
- This task must be completed in less than 15 minutes in order to supply information needed to perform an emergency notification

Safety Considerations:

- There are no safety considerations associated with performing this JPM.

Performance Consequences:

- Incorrect usage of CNS Dose could result in the Emergency Director (Shift Manager) making an inaccurate protective action recommendation to offsite authorities.

Tools and Methods:

- PMIS Terminal (located in the Simulator)
- Necessary data to be acquired from PMIS and simulator Control Boards, as necessary.

Human Interfaces:

- The examiner plays the role of Shift Manager (Emergency Director) in the Control Room.

Examiner Notes:

- The Turbine Building release point results in a ground-level release. The 10 meter meteorological data is the appropriate data for performing the dose projection. A wind direction of 255° results in CDE being the affected downwind sectors.
- If the candidate uses the 100 meter meteorological data, a wind direction of 265° results in DEF being the affected downwind sectors.
- The candidate is to obtain all required numerical information from the simulator / PMIS except for 10 meter and 100 meter wind direction and wind speed, which are given in the initial conditions. This is because the simulator forces the 10 meter and 100 meter data for these points be the same.
- The candidate is required to determine core status from data available in the simulator using their event and system knowledge.

Initial Condition(s):

- A **GENERAL EMERGENCY** was declared 2 minutes ago under EAL 2.4.1
- The reactor has been shutdown for 45 minutes
- A release is in progress through the Turbine Building, due to a steam line break with open MSIV's in one line
- The STE estimates it will take 3 hours to depressurize and stop the release
- Point MET023, 10M Lvl. Wind Direction (15 Min. Avg.) = 255.3°
- Point MET024, 10M Lvl. Wind Speed (15 Min. Avg.) = 12 mph
- Point MET006, 100M Lvl. Wind Direction (15 Min. Avg.) = 265.8
- Point MET007, 100M Lvl. Wind Speed (15 Min. Avg.) = 13.8 mph

Provide the Candidate initial conditions located at page 6 of 7

Terminating Condition(s):

- The Candidate provides a completed CNS Dose Report to the Examiner.

Simulator Setup:

- A. Initialize the simulator to IC20, and batch file *****
- B. Set malfunctions as follows:

Malfunction	Title	Trigger	TD	Value	Ramp
IMF ms07d	MSIV Failure AOV80D	A	0	True	0
IMF ms07h	MSIV Failure AOV86D	A	0	True	0
IMF cro3	Fuel Cladding Failure	A	0	100%	0
IMF rr31a	Recirc Suction Loop A Rupture	A	0	50%	0
IMF MS10	Steam Line Break in Turbine Bldg.	A	0	15%	0
IRF HV02	Wind Speed	A	0	12 mph	0
IRF HV03	Wind Direction	A	0	255 DEG	0
IRF HV17	100m Temperature	A	0	74 DEG	0
IRF HV18	Sigma Theta	A	0	95 DEG	0
IRF HV19	60m Temperature	A	0	74 DEG	0

Initiating Cue:

The Shift Manager directs you to perform a computer dose projection using PMIS and to provide him with a printed copy of the completed dose projection.

Candidate Action	Evaluation Standard
Obtains procedure 5.7.17	Current procedure 5.7.17 (Revision 32)
Starts dose projection program on PMIS	DOSE entered on PMIS terminal
Selects origin of release	TURBINE BUILDING is selected
Enters the release rate	1.5E+6 μ Ci/s (NG) is entered
Selects SBGT status	NO is entered
Enters the release duration	3 HOURS is entered
Determines core status	Determines that CORE IS DEGRADED based on <u>either</u> (1) Main Steam Line Radiation Monitor(s) > 1500 mR/h or in Hi-Hi alarm, or (2) Drywell radiation levels > 1000 R/h
Enters degraded core status	YES is selected
Enters wind direction	255.3 DEG is entered from the 10m Tower
Enters wind speed	12 MPH is entered from the 10m Tower
Enters stability class	D is entered
Enters time since reactor shutdown	0.8 HRS is entered
Enters status of release through Reactor Building	NO is entered
Calculated dose projection results	RESULTS is selected using F3 key
Prints dose projection results	PRINT is selected using F5 key and printer is selected (default)
Provides Emergency Director (Shift Manager) the completed dose projection	Printed dose projection is provided to Examiner

Comments:

Termination Cue:

The Candidate provides a printed dose projection report from CNS Dose.

Information for Candidate

Candidate Instructions:

The examiner will explain or provide initial conditions, inform you about which step(s), if any, to discuss or simulate, and will provide initiating and followup cues. It is necessary that you verbalize your actions and, for simulations, specifically request information concerning indications and expected responses to your actions. When you complete the task, the objective for this job performance measure will be satisfied.

Initial Condition(s):

- A **GENERAL EMERGENCY** was been declared 2 minutes ago under EAL 2.4.1
- The reactor has been shutdown for 45 minutes
- A release is in progress through the Turbine Building, due to a steam line break with open MSIV's in one line
- The STE estimates it will take 3 hours to depressurize and stop the release
- Point MET023, 10M Lvl. Wind Direction (15 Min. Avg.) = 255.3°
- Point MET024, 10M Lvl. Wind Speed (15 Min. Avg.) = 12 mph
- Point MET006, 100M Lvl. Wind Direction (15 Min. Avg.) = 265.8
- Point MET007. 100M Lvl. Wind Speed (15 Min. Avg.) = 13.8 mph

Initial Cue or Direction:

- The Shift Manager directs you to perform a computer dose projection using PMIS and to provide him with a printed copy of the completed dose projection.

JPM #RO-ADMIN-4, Revision 0

**Attachment 1
Answer Key**

Affected Downwind Sectors	C, D, E
---------------------------	---------

CNS Dose Results		
Distance from Plant	Projected Dose, rem	
	TEDE	Thyroid CDE
1 mile	1.68E-01	2.57E+00
2 miles	5.85E-02	8.97E-01
5 miles	1.64E-02	2.51E-01
10 miles	6.80E-03	1.04E-01

Task No.: 299012O0301

Task Title: Develop, Verify & Implement Tagouts (Alt Path)

Trainee: _____ Examiner: _____

Pass: _____ Fail: _____ Examiner Signature: _____ Date: _____

NOTE: THIS IS AN **ALTERNATE PATH** JPM. THE MOTOR HEATER CIRCUIT AND THE CST SUCTION VALVE ARE OMITTED FROM THIS CLEARANCE ORDER.

Additional Program Information:

1. Appropriate Performance Locations: CR, SIM, EOF
2. Appropriate Trainee level: RO
3. Evaluation Method: Perform
4. Performance Time: 15 minutes
5. NRC K/A 2.1.23 (3.9/4.0)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to perform an RO review of a Tagout.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
4. Brief the trainee, place the simulator in run, and tell the trainee to begin.
5. Hand the candidate ATTACHMENT 1.

Directions to Trainee:

When I tell you to begin, you are to perform an RO review of this Tagout. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

Task No.: 299012O0301

Task Title: Develop, Verify & Implement Tagouts (Alt Path)

General Conditions:

1. The plant is operating at 100% power.
2. The “A” Core Spray Pump and Motor are damaged and require maintenance.
3. Clearance Order CSA-1-1234567 CS-P-A has just been written and requires an independent review.
4. NOMS is unavailable.

General References:

1. Procedure 0.9 Tagout

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Critical checks denoted by "*".
2. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

(RO) You are to review the provided Tagout as the “**Originator.**” If necessary make any corrections in pencil on the Tagout form provided. Inform the CRS when the review is complete.

Task No.: 299012O0301

Task Title: Develop, Verify & Implement Tagouts (Alt Path)

Performance Checklist	Standards	Initials
1. Refer to Procedure 0.9.	Refers to Procedure 0.9.	_____
2. Reviews the provided Tagout for applicable components to be tagged.	Determines the components to be tagged for the planned activities.	_____
3. Determines that the Motor Heater and CST suction valve have been omitted and adds them to the Tagout.	Determines that the Core Spray Motor Heater should have been included on the original Tagout along with the Core Spray CST Suction CS-V-66 and added them to the Tagout.	_____ *
4. Determines the required position for each of the components and adds the new positions for the Motor Heater and the CST Suction valve.	Determines the required position for each of the components listed on the provided Tagout and adds the new positions for the Motor Heater and the CST Suction valve.	_____ *

Task No.: 299012O0301

Task Title: Develop, Verify & Implement Tagouts (Alt Path)

Performance Checklist	Standards	Initials
5. Determines the required sequence for each of the components and adds the new sequence for the Motor Heater and the CST Suction valve.	Determines the required sequence for each of the components and adds the new sequence for the Motor Heater and the CST Suction valve.	_____*
6. Notifies CRS.	The trainee informs the CRS that the Tagout has been reviewed. CUE: As the CRS, acknowledge the report.	_____

ATTACHMENT 1

Directions to Trainee:

When I tell you to begin, you are to review the provided Clearance Order CSA-1-1234567 CS-P-A as the **“Originator”**. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them in order to complete the assigned task.

General Conditions:

1. The plant is operating at 100% power.
2. The “A” Core Spray Pump and Motor are damaged and require maintenance.
3. Clearance Order CSA-1-1234567 CS-P-A has just been written and requires a review.
4. NOMS is unavailable.

Initiating Cues:

(RO) You are to review the provided Tagout as the **“Originator.”** If necessary make any corrections in pencil on the Tagout form provided. Inform the CRS when the review is complete.

Section Coversheet
Tagout: CLEARANCE ORDER
Section: CSA-1-1234567 CS-P-A
Component to be Worked:

07/01/2005 14:17

CS-P-A
CORE SPRAY PUMP A
R-859-NE QUAD

Description:

For Training Use Only
Rebuild Pump. Replace Motor

Special Instructions

Worker Notes

Release Notes

Perform Valve Lineup prior to releasing clearance

Section Attributes:

Attribute Description	Attribute Value
MRRS	YES
LCO ACTION REQUIRED	YES
FIRE IMPAIRMENT REQUIRED	NO
CONTAINMENT AFFECTED	NO
REQUIRED PLANT CONDITION	EQUIPMENT OUT OF SERVICE

Work Order List:

Section Verification:

Status	Description	User	Verification Date
	Section Prepared		
	Section Verified		
	Section Authorized		
	Equip. Ready for Maintenance		
	Release Prepared		
	Release Verified		
	Release Authorized		
	Section Complete		

Temporary Safety Devices List:

Section Tag List
Tagout: CLEARANCE ORDER
Section: HVRX-1-1234567 FC-R-1F
07/01/2005 14:17

Tag Serial No.	Tag Type	Equipment Equipment Description Equipment Location	Ver. Req.	Pla. Seq.	Placement Configuration	Place. 1st Verif Date/Time	Place. 2 nd Verif Date/Time	Rest. Seq.	Restoration Configuration	As Left Configuration	Rest. 1 st Verif Date/Time	Rest. 2 nd Verif Date/Time	Tag Placement Notes	Tag Removal Notes
0	Danger	*CS-SW-S5A *CONTROL SWITCH FOR CS PUMP A *CONTROL ROOM PANEL 9-3		1	PULL TO LOCK			23	NORMAL AFTER STOP	NORMAL AFTER STOP				
0	Danger	*CS-SW-S2A *CONTROL SWITCH FOR CS-MO-11A, OUTBD INJECTION VLV *CONTROL ROOM PANEL 9-3		2	NORMAL AFTER CLOSED			22	NORMAL AFTER OPEN	NORMAL AFTER OPEN				
0	Danger	*CS-SW-S1A *CONTROL SWITCH FOR CS-MO-12A, INJ THROTTLE VLV *CONTROL ROOM PANEL 9-3		3	NORMAL AFTER CLOSED			21	NORMAL AFTER CLOSED	NORMAL AFTER CLOSED				
0	Danger	*CS-SW-S4A *CONTROL SWITCH FOR CS-MO-26A, TEST LINE RECIRC VLV *CONTROL ROOM PANEL 9-3		4	NORMAL AFTER CLOSED			20	NORMAL AFTER CLOSED	NORMAL AFTER CLOSED				
0	Danger	*CS-SW-S7A *CONTROL SWITCH FOR CS-MO-7A, PUMP TORUS SUCTION VLV *CONTROL ROOM PANEL 9-3 *C-932 (VBD-R)		5	CLOSED			19	KEYLOCK ED OPEN	KEYLOCK ED OPEN				

Section Tag List

Tagout: CLEARANCE ORDER

Section: HVRX-1-1234567 FC-R-1F

07/01/2003 14:17

Tag Serial No.	Tag Type	Equipment Equipment Description Equipment Location	Ver. Req.	Pla. Seq.	Placement Configuration	Place. 1st Verif Date/Time	Place. 2 nd Verif Date/Time	Rest. Seq.	Restoration Configuration	As Left Configuration	Rest. 1 st Verif Date/Time	Rest. 2 nd Verif Date/Time	Tag Placement Notes	Tag Removal Notes
0	Danger	*EE-CB-4160F (CSP1A) *CORE SPRAY PUMP A ***THIS COMPONENT HAS A MOTOR HEATER*** *4160 V "F" CRITICAL SWGR RM		6	RACKED OUT			18	RACKED IN	RACKED IN				
0	Danger	*EE-PNL-SPR1(7) *CS PUMP MOTOR HEATER AND ELAPSED TIME METER *CRIT SWGR ROOM "F", SOUTH WALL		7	OFF			17	ON	ON				
0	Danger	*EE-MCC-Q(5D) *CS-MO-11A CS LOOP A OUTBD INJECTION *MCC-Q RX BLDG 903 NORTH WEST		8	OFF			16	ON	ON				
0	Danger	*EE-MCC-Q(6A) *CS-MO-12A CS LOOP A INBD INJECTION *MCC-Q RX BLDG 903 NORTH WEST		9	OFF			15	ON	ON				
0	Danger	*EE-MCC-Q(10B) *CS-MO-26A CS LOOP A TEST LINE RECIRC *MCC-Q RX BLDG 903 NORTH WEST		10	OFF			14	ON	ON				
0	Danger	*EE-MCC-Q(5C) *CS-MO-7A CS PUMP A SUCTION *MCC-Q RX BLDG 903 NORTH WEST		11	OFF			13	ON	ON				

Section Tag List
Tagout: CLEARANCE ORDER
Section: HVRX-1-1234567 FC-R-1F
07/01/2003 14:17

Tag Serial No.	Tag Type	Equipment Equipment Description Equipment Location	Ver. Req.	Pla. Seq.	Placement Configuration	Place. 1st Verif Date/Time	Place. 2 nd Verif Date/Time	Rest. Seq.	Restoration Configuration	As Left Configuration	Rest. 1 st Verif Date/Time	Rest. 2 nd Verif Date/Time	Tag Placement Notes	Tag Removal Notes
0	Danger	*CS-MOV-M011A *CS SYSTEM A INJECTION THROTTLE *CS "A" INJECT VALVE PLATFORM		12	DO NOT OPERATE			12	PULL TAG	PULL TAG				
0	Danger	CS-MOV-M012A *CS SYSTEM A INJECTION BLOCK *CS "A" INJECT VALVE PLATFORM		13	DO NOT OPERATE			11	PULL TAG	PULL TAG				
0	Danger	CS-MOV-M026A *CS SYSTEM A TEST LINE ISOLATION *RCIC (NE) QUAD MID LEVEL		14	DO NOT OPERATE			10	PULL TAG	PULL TAG				
0	Danger	CS-MOV-M07A *CS PUMP A SUCTION *RCIC (NE) QUAD LOWER LEVEL		15	DO NOT OPERATE			9	PULL TAG	PULL TAG				
0	Danger	CS-V-26 *CS PUMP A DISCHARGE CHECK BYPASS *RCIC (NE) QUAD LOWER LEVEL		16	CLOSED			8	SEALED OPEN	SEALED OPEN				
0	Danger	CS-V-66 *CS PUMP A CONDENSATE SUPPLY *RCIC (NE) QUAD LOWER LEVEL		17	CLOSED			7	SEALED CLOSED	SEALED CLOSED				
0	Danger	CS-V-40 *PCV-73A OUTLET *RX BLDG 931 NORTH EAST		18	CLOSED			6	CLOSED	CLOSED				

Section Tag List**Tagout: CLEARANCE ORDER****Section: HVRX-1-1234567 FC-R-1F****07/01/2003 14:17**

Tag Serial No.	Tag Type	Equipment Equipment Description Equipment Location	Ver. Req.	Pla. Seq.	Placement Configuration	Place. 1st Verif Date/Time	Place. 2 nd Verif Date/Time	Rest. Seq.	Restoration Configuration	As Left Configuration	Rest. 1 st Verif Date/Time	Rest. 2 nd Verif Date/Time	Tag Placement Notes	Tag Removal Notes
0	Danger	CS-V-41 *PCV-73A BYPASS *RX BLDG 931 NORTH EAST		19	CLOSED			5	OPEN	OPEN				
0	Danger	CS-V-20 *CS PUMP A DRAIN ROOT *RCIC QUAD (NE) LOWER LEVEL		20	OPEN			4	CLOSED	CLOSED				
0	Danger	CS-V-21 *CS PUMP A DRAIN SHUTOFF *RCIC QUAD (NE) LOWER LEVEL		21	OPEN			3	CLOSED	CLOSED				
0	Danger	CS-V-16 *CS PUMP A VENT ROOT *RCIC QUAD (NE) LOWER LEVEL		22	OPEN			2	CLOSED	CLOSED				
0	Danger	CS-V-17 *CS PUMP A VENT SHUTOFF *RCIC QUAD (NE) LOWER LEVEL		23	OPEN			1	CLOSED	CLOSED				

Task No.: 271-017

=====

Task Title: Respond to Sustained Combustion in Off Gas System

=====

Trainee: _____ Examiner: _____

Pass: ___ Fail: ___ Examiner Signature: _____ Date: _____

Additional Program Information:

1. Appropriate Performance Locations: CR/SIM
2. Appropriate Trainee level: RO/SRO
3. Evaluation Method: ___ Simulate ___ Perform
4. Performance Time: 10 minutes
5. NRC K/A 271000 A1.08 (3.1/3.1); A2.06 (3.5/3.9)

Directions to Examiner:

1. This JPM evaluates the trainee's ability to respond to sustained combustion in off gas system.
2. If this JPM is performed on the Simulator, only the cues preceded by "#" should be given.
3. Observe the trainee during performance of the JPM for proper use of self-checking methods.
4. All blanks must be filled out with either initials or an "NP" for "not performed"; an explanation may also be written in the space if desired by the examiner.
5. Brief the trainee, place the simulator in run, and tell the trainee to begin.

Directions to Trainee:

When I tell you to begin, you are to respond to sustained combustion in off gas system. Before you start, I will state the general plant conditions, the Initiating Cues and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to respond to sustained combustion in off gas system. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

=====

General Conditions:

1. The Plant is operating at 100% power.
2. The "Red" set of SJAEs is in-service.
3. Off gas flow recorder, FR-47, indicates very low and erratic flow.
4. Condensate System Conductivity has increased markedly.

Task No.: 271-017

Task Title: Respond to Sustained Combustion in Off Gas System

General References:

1. Procedure 2.4OG

General Tools and Equipment:

1. None

Special Conditions, References, Tools, Equipment:

1. Simulator Setup: See Attachment 1.
2. Critical checks denoted by "*".
3. Simulator cues denoted by "#".

Task Standards:

1. 100% of critical elements successfully completed without error.
2. 100% of safety and radiological work practices.

Initiating Cue(s):

You are the BOP operator. You are to monitor panel indications and alarms, and take all appropriate actions to respond to sustained combustion in off gas system. Inform the CRS when combustion has been stopped.

NOTE: Place the Simulator in RUN and tell the trainee to begin.

Task No.: 271-017

Task Title: Respond to Sustained Combustion in Off Gas System

Performance Checklist	Standards	Initials
1. Obtains Procedure	The Operator obtains a current copy of Procedure 2.4OG.	_____
2. Check PMIS points F040 and F041	<p>The Operator checks PMIS Points F040, STM Jet Air Eject 1A Drain, and F041, STM Jet Air Eject 1B Drain (PMIS Group BURN).</p> <p>CUE: F040 temperatures is 175°F. F041 temperatures is 160°F.</p>	_____
<p>Note: If direction was given to the Station Operator(s) to check temperatures locally or to inspect the system, provide the following CUE(s) as appropriate.</p> <p>#CUE: Station Operator reports OG-TIS-45 is 175°F and 160°F.</p> <p>#CUE: Station Operator reports visual inspection of the OG system has been performed, nothing unusual found.</p>		
4. CLOSE AR-AO-151	<p>The Operator closes AR-AO-151 on Bd B.</p> <p>CUE: The valve's GREEN light is ON. The RED light is OFF.</p>	_____*
5. OPEN CD-545	<p>The Operator directs the Turbine Building SO to OPEN CD-545, SJAE FIRST STAGE 1A1 TEST CONNECTION.</p> <p>#CUE: The Station Operator acknowledges the directions.</p> <p>#CUE: (After 1 minute has elapsed) The SO reports that CD-545 is OPEN.</p>	_____*
NOTE: Remove malfunction OG-02.		

Task No.: 271-017

Task Title: Respond to Sustained Combustion in Off Gas System

Performance Checklist	Standards	Initials
6. Monitor Condenser vacuum (PNL B)	<p>Check condenser vacuum on MS-PI-72A(B).</p> <p>CUE: Vacuum is 26.5' Hg on both.</p> <p>#CUE: (If asked) the RO is prepared to reduce Reactor Power.</p>	_____
NOTE: Indicate that 5 minutes has elapsed		
7. CLOSE CD-545	<p>The Operator direct the Turbine Building SO to CLOSE CD-545.</p> <p>#CUE: The Station Operator acknowledges the directions.</p> <p>#CUE: (After 1 minute has elapsed) The SO reports that CD-545.</p>	_____
8. OPEN AR-AO-151 (PNL B)	<p>The Operator opens AR-AO-151, SJAE A SUCT (RED) FM CNDR B VLV.</p> <p>CUE: The valve's RED light is ON. The GREEN light is OFF.</p>	_____*
9. Monitor PMIS points F040 and F041	<p>Using a PMIS terminal, check computer points F040, STM JETAIREJECT 1A DRAIN, and F041 ,STM JETAIREJECT 1B DRAIN.</p> <p>CUE: Both temperatures are 126°F.</p>	_____
10. Inform the CRS that the task is Complete.	<p>Inform the Control Room Supervisor that Combustion has been stopped.</p> <p>#CUE: The Control Room Supervisor acknowledges the report.</p>	_____

Task No.: 271-017

=====
Task Title: Respond to Sustained Combustion in Off Gas System
=====

ATTACHMENT 1

SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the Simulator in a full power IC.

Batch File Name - none.

C. Change the simulator conditions as follows:

1. Triggers

None

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
OG02	Sustained H ₂ Burn					

3. Remotes

None

4. Overrides

None

5. Panel Setup

a. Initialize Simulator and place in RUN.

b. Insert malfunction OG02.

c. Place Simulator in FREEZE.

Task No.: 271-017

Task Title: Respond to Sustained Combustion in Off Gas System

- d. Ensure the "Red" set of SJAEs is in-service.

Note: If this JPM is to be performed more than once, snap the simulator into IC-0 after the panel setup is complete.

ATTACHMENT 2

Directions to Trainee:

When I tell you to begin, you are to respond to sustained combustion in the off gas system. Before you start, I will state the general plant conditions, the Initiating Cues, and answer any questions you may have.

When simulating, physically point to any meters, gauges, recorders and controls you would be using. State the position of controls as you would have manipulated them to respond to sustained combustion in the off gas system. During performance, state the actions you are taking, e.g.: repositioning controls and observing instrumentation.

General Conditions:

1. The Plant is operating at 100% power.
2. The "Red" set of SJAEs is in-service.
3. Off gas flow recorder, FR-47, indicates very low and erratic flow.
4. Condensate System Conductivity has increased markedly.

Initiating Cues:

You are the BOP operator. You are to monitor panel indications and alarms, and take all appropriate actions to respond to sustained combustion in off gas system. Inform the CRS when combustion has been stopped.

Lesson Title:	OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vibs, FW line break inside DW, Isolation Failure.	Rev. No.:	0
Lesson No:	SKL052-52-95	SAP BET#	16727
Prerequisite:	None	Duration (Hours):	1.5

References

1. Technical Specifications
 - a. Technical Specification 3.3.1.1 RPS Instrumentation
 - b. Technical Specification 3.3.6.1, Primary Containment Isolation Instrumentation
2. Procedures
 - a. COP 2.0.11, Entering and exiting TS LCO Conditions
 - b. GOP 2.1.5, Reactor Scram
 - c. GOP 2.1.22, Recover from Group Isolation
 - d. AOP 2.4MC-RF, Condensate and Feedwater Abnormal
 - e. EOP 1A, RPV Control
 - f. EOP 3A, Primary Containment Control
 - g. ESP 5.8.20, EOP Plant Temporary Modifications
3. Miscellaneous
 - a. None.
4. PRA
 - a. Class of Sequence - Loss of Coolant Accidents with Failure to Inject
 - b. Key Contributor - HPCI Failure
 - c. Initiator of Core Damage - LOCA
 - d. High Fussel-Vesely and Risk Achievement Worth - HPCI Failure to start and failure to run

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

Examination Criteria:

Satisfactory completion of this Dynamic Evaluation requires a grade as identified in NUREG 1021, Operator Licensing Examination Standards for Power Reactors

COMMITMENT LIST

Commitment

Rev. Added

None

Method:

This evaluation scenario is intended to be used as an examination mechanism for evaluating Initial Licensed Operator knowledge in a dynamic plant situation.

Crew configurations shall be consistent with the technical specification crew compliment for operating the plant in Mode 1.

Special Equipment/Materials/Special Instructions:

Validation Load 0505. Compare current simulator load to the validation load. If they are not the same, run the scenario and look for possible changes.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

I. SCENARIO SUMMARY

The plant is operating at 100% power near the end of the current fuel cycle when the crew takes the shift. The plant is in a normal configuration with Rx Feed Pump Lube Oil Pump A1 and Sump Pump D1 out of service. Southeast Nebraska is in a severe thunderstorm warning, which includes intense electrical storm activity.

A failure of a drywell pressure sensor results in a half-scam and an inoperable TS instrument. The instrument may be bypassed to reset the half-scam. The half-group isolation may also be reset. TS 3.3.1.1 and 3.3.6.1 will need to be assessed.

When the Technical Specification assessment is complete, a bus ground results in a loss of MCC "F". The loss of MCC F causes a trip of RFPT A due to low lube oil pressure, A1 pump tagged out, requiring a power reduction to maintain reactor water level and to reduce heat load to the capacity of the remaining pump.

When conditions have stabilized, RFP "B" vibrations increase to the point that the pump must be tripped. The crew will scram the reactor and trip the last remaining RFP.

When RCIC initiates, a break develops on the "A" feedwater line inside the drywell. HPCI fails to automatically start, but may be manually started. RCIC will not inject due to the location of the leak.

The feedwater line check valve leaks, and the leak continues.

HPCI can maintain RPV water level for the selected leak size. Containment sprays will be required by the EOPs.

Drywell sprays will be initiated. Drywell sprays will fail to isolate on low containment pressure. The operator must either maintain pressure by controlling spray flowrate or manually isolate drywell sprays when containment becomes negative before air is drawn into the primary containment.

The scenario ends when RPV water level is being restored to the normal band, drywell pressure is being controlled and classifications have been made.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

II. TASKS

A. RO

259060O0401	Respond to High Reactor Feed Pump Vibration
259046P0401	Respond To Loss Of Single RFP
259017P0401	Respond To Loss Of Both RFPs
200043C0401	Respond To Small Leak Inside PC
226002O0101	Manually Initiate Drywell Spray
230002O0101	Manually Initiate Torus Spray
206019P0101	Respond To HPCI System Automatic Initiation
213002P0101	Verify and Reset a Group 2 Primary Containment Isolation
213003P0101	Verify and Reset a Group 3 Primary Containment Isolation
213006P0101	Verify and Reset a Group 6 Primary Containment Isolation
299015O0301	Apply Technical Specification Requirements

B. SRO

259061G0403	Direct Actions For Loss Of Single feed Pump
259062G0403	Direct Actions For Loss Of Feedwater
245046G0403	Direct Actions For High Vibration
200322G0503	Direct Actions For Small Leak Inside PC
200336G0503	Direct Actions To Control Reactor Pressure
200337G0503	Direct Actions To Control Reactor Level
200340G0503	Direct Actions For Emergency Shutdown From Power
200342G0503	Direct Actions To Control PC Pressure
200344G0503	Direct Actions To Control Drywell Temperature
341030O0303	Evaluate Plant Systems Performance And Coordinate Appropriate Actions Per Technical Specifications In The Event A Limiting Condition For Operation is Entered/Not Satisfied

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

III. SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the simulator in IC20, 100% (EOC)

Batch File Name - opexam/525295

C. Change the simulator conditions as follows:

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

1. Triggers		
Number	File Name	Description
E1	None	trg 1 "set zroeerelcrfl(1) = 1"
E4	None	trgset 4 "zaorcicfi91 .ge. 0.2" ^RCIC flow > 20% of scale or 100 gpm
E9	None	trgset 9 "zdipcsw1301mv(1) == 1 .or. zdipcsw1302mv(1) == 1 .or. zdipcsw1311mv(1) == 1"
E10	None	trgset 10 "zdipcsw1312mv(1) == 1 .or. zdipcswcs240av == 0 .or. zdipcswcs241av == 0"
E11	None	trgset 11 "et_array(9) == 1 .or. et_array(10) == 1" ^cross-connect between torus and drywell isolated trg 11 "mmf pc12 0" ^remove the downcomer leak

2. Malfunctions						
Number	Title	Trigger	TD	Severity	Ramp	Initial
HP01	HPCI Failure to Auto Start	A	N/A	N/A	N/A	N/A
PC17A	Individual Group 2 Valve Automatic Isolation Failure (1301)	A	N/A	N/A	N/A	N/A
PC17B	Individual Group 2 Valve Automatic Isolation Failure (1302)	A	N/A	N/A	N/A	N/A
PC17I	Individual Group 2 Valve Automatic Isolation Failure (1311)	A	N/A	N/A	N/A	N/A
PC17J	Individual Group 2 Valve Automatic Isolation Failure (1312)	A	N/A	N/A	N/A	N/A
PC12	Primary Containment Downcomer Leak	A	N/A	20	N/A	N/A

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vibs, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

2. Malfunctions						
<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RM02L DELETE	ERP Normal Range Radiation Monitor Failure (RMP-RM-3A)	E1	0	100	0	As Is
RM02M DELETE	ERP High Range Radiation Monitor Failure (RMP-RM-3B)	E1	0	100	0	As Is
ADD	Drywell pressure switch PC-PS-12C Fails UPSC			100		
ED10A	480 Volt MCC "A" Failure	E2	0	N/A	N/A	As Is
FW07B	"B" RFP High Vibration	E3	0	100	6:00	0
FW18A	Feedwater Line Break	E4	0	100	5:00	0
RR31A	Recirc "A" Suction Line Break	E4	00:30	1.6	10:00	0

3. Remotes				
<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>Value</u>	<u>Ramp</u>
RH44	EOP PTM 76 & 77	A	INSTALL	N/A
RH45	EOP PTM 78 & 79	A	INSTALL	N/A

4. Overrides					
<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
Rx Feed Pump A LO Pump A1 red light	zlorfloswrfopa1(1)	A	0	OFF	N/A
Rx Feed Pump A LO Pump A1 green light	zlorfloswrfopa1(3)	A	0	OFF	N/A
Rx Feed Pump A LO Pump A1 control switch	zdirfloswrfopa1(1)	A	0	PTL	N/A

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

4. Overrides					
<u>Instrument</u>	<u>Tag</u>	<u>Trigger</u>	<u>TD</u>	<u>Value</u>	<u>Ramp</u>
Sump Pump D1 green light	zlorwswd1(1)	A	0	OFF	N/A
Sump Pump D1 red light	zlorwswd1(2)	A	0	OFF	N/A
Sump Pump D1 control switch	zdirwswd1(1)	A	0	OFF	N/A

- D. Monitor variable CRTCD(14), Diffused Nodal Clad Temperature. This is necessary for Critical Task performance monitoring.
- E. Panel Set-up
1. Ensure PMIS IDTs are blank
 2. Ensure “A” DEH pump is running with switch in AUTO.
 3. Ensure “preferred” tag is on “A” DEH Pump.
 4. Balance Master Feedwater Controller.
 5. Balance Main Generator voltage regulator.
 6. Ensure Recirc Controllers are selected to “S”.
 7. Hang a red tag on:
 - a. “A1” Feed Pump Lube Oil Pump control switch
 - b. “D1” Sump Pump control switch.
 8. Update status lights on panel 9-5 to reflect equipment out of service.
 9. Mark up boards and ensure tag reflects CREF is on Division I.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

F. SCENARIO CONDUCT

Conditions/Instructor Activities	Operator Activities
	<p>CREW Panel walkdown.</p>
<p><u>ROLL PLAY</u> After crew has assumed the watch, call the control room and request a drop of 100 Mwe Net to support some switching activities.</p>	<p>CRS Directs the RO to reduce Reactor Power to approximately 658 MWe.</p>
	<p>RO Lowers Reactor Recirculation Pump speeds to approximately 66% on each. Turbine load should drop to approximately 658 MW.</p>
<p><u>ACTION</u> When the crew has lowered power, activate TRIGGER E1 to initiate a drywell pressure instrument failing upscale (PC-PS-12C).</p>	<p>BOP</p> <ul style="list-style-type: none"> • Reports alarm 9-5-2/D-3 • • • • <p>CREW</p> <ul style="list-style-type: none"> • Refer to other indications of drywell pressure and determines an instrument failure has occurred. • Determine no entry into 2.4PC is required as no high pressure exists.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

ROLE PLAY

When the SRO reports the problem with the DW instrument, have the OPS manager direct the crew to “bypass” the instrument and reset the scram while the problem is being assessed.

Note: this is being done so the RO has to reset the scram and the BOP has to reset the half-isolation.

ACTION

After the TS assessment and resets are complete, activate **TRIGGER E2** to fail MCC B.

NOTE:

No entry exists for 5.3AC480.

ROLE PLAY:

If asked to investigate, report there is no obvious cause for the breaker trip.

CRS

- Refer to TS 3.3.1.1 and 3.3.6.1, RPS and PCIS Instrumentation.
- Determine Condition 3.3.1.1.A and 3.3.6.1.A are applicable.

RO

- Resets half-scram

BOP

- Resets the half-isolation

BOP

- Report alarm **C-3/E-10**, 480V BUS 1B GROUND
- Report ground is on MCC-B.
- Report alarm **C-3/C-10**, 480V BUS 1B MCC-B BKR TRIP.

RO

- Report trip of “A” RFP.
- Monitor for recirc runback.

BOP

- Report “A” RFP has no normal lube oil pumps.
- If necessary, control TEC temperature manually with TEC-MO-130, TEC HX BYPASS VALVE, or TEC HX SW outlet valves.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

CRS

Enter 2.4MC-RF.

BOP

- Perform 2.4MC-RF.
- Update crew on scram actions.
- Check if operation in or near Stability Exclusion Region of Power to Flow Map.
- Determine need to enter Procedure 2.4RR.
- Determine there are no more applicable actions.

CRS

Directs the BOP operator to enter 2.4 RR and carry out the actions.

BOP

- Enters 2.4RR as operation is in the stability exclusion region.
- coordinates with the RO the driving of control rods.

RO

- Drives the control rods to exit the stability exclusion region of the Power to Flow Map.

ACTION

After the actions for the MCC loss are complete, activate **TRIGGER E3** to cause high vibrations on “A” RFP.

BOP

- Report rising vibrations on “A” RFP.
- Report alarm **A-1/E-6, RFP TURBINE A CONTROL TROUBLE**
- Terminate any power changes in progress.
- Monitor reactor level, power, steam flow, and feed flow.
- On RFC-M-OITA, determine high vibration caused alarm.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

ACTION:

IF the crew is not going to trip the RFP, insert malfunction FW01A, Reactor Feedwater Pump Trip.

BOP

- Report alarm **A-1/F-5**, RFP TURBINE A SUPERVISORY TROUBLE.
- Determine cause of alarm on RFC-M-OITA (done).
- Lower RFPT speed until alarm clears (must reduce power to do so).
- When bearing vibration reaches 3.5 mils, trip RFP Turbine A.

ACTION:

If the crew does not start RCIC to control RPV water level, manually actuate **TRIGGER 4**.

RO

- When second RFP is tripped, manually scrams the reactor.
- Make scram report.

CRS

- Enter and direct the activities of EOP-1A.
- Direct group isolations and initiations be verified.
- Direct RPV water level be restored and maintained +15" to +40".
- Direct Reactor pressure be maintained 800 to 1000 psig.

NOTE:

The feedwater line leak and suction line leak (to simulate feedwater check valve leakage) go active automatically when RCIC injects.

CREW

Recognize rapidly rising drywell pressure.

RO

- Recognize HPCI failed to automatically start.
- Manually start HPCI.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

CRS

- Re-enter EOP-1A.
- Enter and direct the activities of EOP-3A.
- Check PC water level.
- Direct torus sprays be placed in service.
- Direct Drywell FCUs be placed in OVERRIDE.

BOP

Place Drywell FCUs in OVERRIDE.

BOP

Place torus sprays in service.

CRS

When torus pressure reaches 10 psig,:

- Direct Recirc pumps be tripped.
- Direct Drywell FCUs be tripped.
- Check DWSIL.
- Direct Drywell sprays be placed in service.

BOP

Trips Drywell FCUs.

RO

Trips Reactor Recirc pumps.

BOP

- Place Drywell sprays in service.
- Maintain Drywell pressure in the ordered band.

CRS

Classify the event as an ALERT per EAL 2.2.1

NOTE:

Drywell sprays will fail to isolate on low containment pressure. The operator must either maintain pressure by controlling spray flowrate or manually isolate drywell sprays when containment becomes negative before air is drawn into the primary containment.

VI. SCENARIO TERMINATION

When RPV water level is being restored to the normal band, drywell pressure is being controlled and classifications have been made, **FREEZE** the simulator.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

VII. POST-SCENARIO CRITIQUE

If this scenario is not being used for an annual exam, provide a critique in accordance with the general critique guidelines of OTP-806.

Lesson Title: OPS Lightning Strike, Failure of a Drywell Pressure Instrument, Loss of MCC F, RFP High Vib, FW line break inside DW, Isolation Failure.

Lesson No.: SKL052-52-95

Rev. No.: 01

VIII. CRITICAL TASK PERFORMANCE

A. Crew Performance

CREW CRITICAL TASKS	SAT	UNSAT
The crew will take action to maintain operation within the Pressure Suppression Pressure Limit (PSP).		
The crew will take actions to prevent primary containment oxygen level from exceeding 5%.		
The crew will control injection to assure fuel temperature remains below 1500°F and not require emergency depressurization.		

B. Individual Performance

CREW:		DATE:
CRS		PASS / FAIL
RO		PASS / FAIL
BOP		PASS / FAIL

IX. INITIAL CONDITIONS

A. Plant Status:

1. 100% power, steady state, near End of Cycle.

2. Rod Sequence Information:	Page:	<u>2</u>
	Rod:	<u>18-27</u>
	Notch:	<u>26</u>

B. Tech. Spec. Limitations in effect:

1. None

C. Significant problems/abnormalities:

1. Optimum Water Chemistry is out of service.
2. "A1" Reactor Feed Pump Lube Oil Pump tagged out for motor replacement.
3. Sump Pump "D1" tagged out due to high motor vibration.
4. The control room was notified by NAWAS that Southeast Nebraska is in a severe thunderstorm warning for the next 6 hours. The off-going shift completed all applicable actions in 5.1WATCH.

D. Sentinel Status: Green

E. Evolutions/maintenance for the on-coming shift:

F. Continue full power operation.

Lesson Title:	Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5 Tube Rupture, HPCI Leak, and ATWS, MSOT 2 Areas, ED	Rev. No.:	0
Lesson No:	SKL052-52-94	SAP BET#	16726
Prerequisite:	None	Duration (Hours):	1.5

References

1. Technical Specifications/TRM
 - a. 3.1.3 Scram Accumulators
 - b. 3.1.5 Control Rods
 - c. ECCS - Operating
 - d.
2. Procedures
 - a. ACP 2.4EXT-STM Loss of Extraction Steam
 - b. GOP 2.2.29 Feedwater Heaters and Extraction Steam
 - c. GOP 2.1.5 Reactor Scram
 - d. ACP 2.4CSCS Inadvertent CSCS Initiation
 - e. EP 5.1RAD Building Radiation Trouble
 - f. EPIP 5.7.1 Emergency Classification
 - g. EPIP 5.7.2 Shift Supervisor EPIP
 - h. EOP 5.8 RPV Control - 1A
 - i. EOP 5.8 Primary Containment Control - 3A
 - j. EOP 5.8 Reactor Pressure/Power Control (ATWS) - 6A
 - k. EOP 5.8 Reactor Pressure/Power Control (ATWS) - 6B
 - l. EOP 5.8 Reactor Level Control (ATWS) - 7A
 - m. EOP 5.8.3 Alternate Rod Insertion Methods
 - n. EOP 5.8.4 Alternate Injection Subsystems (Table 4)
 - o. EOP 5.8.13 Outside Shroud Injection Systems (Failure to Scram) (Table 13)
 - p. EOP 5.8.20 EOP Plant Temporary Modifications
 - q.
3. Miscellaneous
 - a. SER 4-00, Continued Operation When Conditions Called for Manually Scramming the Reactor
4. PRA
 - a. Class of Sequence - ATWS
 - b. Key Contributor - RPS Failure, HPCI Failure, RCIC Failure
 - c. Initiator of Core Damage - Loss of Condenser
 - d. High Fussler-Vesely and Risk Achievement Worth - Mechanical Failure of RPS
 - e. High Risk Achievement Worth - Mechanical Failure of RPS

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
Tube Rupture, HPCI Leak, and ATWS,
MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Examination Criteria:

Satisfactory completion of this Dynamic Evaluation requires a grade as identified in OTP-809

COMMITMENT LIST

Commitment

Rev. Added

None

Method:

This evaluation scenario is intended to be used as an examination mechanism for evaluating Licensed Operator knowledge in a dynamic plant situation.

Crew configurations shall be consistent with the normal crew compliment used to operate the plant.

Special Equipment/Materials/Special Instructions:

Validation Load 0505. Compare current simulator load to the validation load. If they are not the same, run the scenario and look for possible changes.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
Tube Rupture, HPCI Leak, and ATWS,
MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

I. SCENARIO SUMMARY

The plant is operating at 60% power with instructions to continue the power ascension to 100%. The crew will raise power greater than 70% before the first event is called in. The “A1” Feed Pump Lube Oil Pump and Sump Pump D1 are tagged out. After a 10% power increase has been achieved, a scram accumulator fault on low pressure occurs.

Following the Tech Spec assessments, an inadvertent initiation of HPCI occurs. The crew should respond per 2.4CSCS and Technical Specifications.

After the Tech Spec assessment is complete, an unisolable steam line leak will develop on the HPCI steam line. The automatic isolation for the steam supply valves will not function and the valves cannot be closed from the control room. The crew is expected to take action EOP-05, Secondary Containment Control and scram the plant before one area reaches a Maximum Safe Operating Temperature (MSOT).

Due to a hydraulic lock, many control rods will fail to insert. The crew should respond to the ATWS per EOP-06A, 7A and 5.8.3. Power level should be ~ 10% after the Recirculation pump trip, so RPV water level will have to be lowered. Control rods can be inserted via RMCS.

The secondary containment temperatures will continue to rise, resulting in MSOT in 2 areas. The crew is expected to take action iaw EOP-6B and perform an Emergency Depressurization. After the Emergency Depressurization is complete and RPV water level is being controlled, the control rods will insert the next time the scram is reset and scrambled again.

The scenario will terminate when the RPV has been depressurized, control rods have been inserted, and RPV water level has been restored to +15 to +40”.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

II. TASKS

A. RO

200020O0401	Perform Emergency Shutdown From Power and Scram Response
200174A0501	Conduct Alternate Pressure Control Using Safety Relief Valves
200369A0501	Conduct Alternate Rod Insertion Using Repeat Manual Scrams
200379A0501	Conduct Alternate Rod Insertion Using RMCS
206021P0401	Respond to HPCI Inadvertent Initiation
213002P0101	Verify and Reset a Group 2 Primary Containment Isolation
213003P0101	Verify and Reset a Group 3 Primary Containment Isolation
213006P0101	Verify and Reset a Group 6 Primary Containment Isolation
272005O0401	Respond to High Radiation Level Alarms
218002O0101	Manually Operate SRV's to Control Reactor Pressure

B. SRO

200336G0503	Direct Actions To Control Reactor Pressure
200337G0503	Direct Actions To Control Reactor Level
200340G0503	Direct Actions For Emergency Shutdown From Power
200347G0503	Direct Actions To Control Torus Water Temperature
200357G0503	Direct Actions To Shutdown Reactor During Failure To Scram
200358G0503	Direct Actions To Control Reactor Pressure During Failure To Scram
288073G0403	Direct Actions For Loss of Reactor Building Ventilation
200349G0503	Direct Actions To Control Secondary Containment Radiation Levels
341039O0303	Authorize Overriding Automatic Actions of Engineered Safety Systems
200350G0503	Direct Actions To Control Secondary Containment Temperature

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

- | | |
|-------------|---|
| 341030O0303 | Evaluate Plant Systems Performance And Coordinate Appropriate Actions Per Technical Specifications In The Event A Limiting Condition For Operation is Entered/Not Satisfied |
| 344018O0303 | Classify Emergency Events Requiring Emergency Plan Implementation |
| 344022O0303 | Direct Emergency Response As Emergency Director (Emergency Plan) |
| 344037O0303 | Perform Required Notifications Of On-Site And Off-Site Personnel For Abnormal/Emergency Events |

III. COMMON OPERATOR ERRORS

- A. None identified.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

IV. SIMULATOR SET-UP

A. Materials Required

None

B. Initialize the simulator in IC 16, ~60% (MOC)

Batch File Name - OPEXAM/525294

C. Change the simulator conditions as follows:

1. Triggers

<u>Number</u>	<u>File Name</u>	<u>Description</u>
E2	None	Default to False
E4	None	Default to False
E6	None	Default to False
E8	None	Default to False

2. Malfunctions

<u>Number</u>	<u>Title</u>	<u>Trigger</u>	<u>TD</u>	<u>Severity</u>	<u>Ramp</u>	<u>Initial</u>
RD02	ATWS	A	0	90	0	N/A
HP09	HPCI Failure to Auto Isolate	A	0	N/A	N/A	N/A
HP05	HPCI Inadvertent Initiation	E2	0	N/A	N/A	N/A
HP06	HPCI Steam Line Break	E4	0	6	25:00	0.5

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

3. Remotes				
Number	Title	Trigger	Value	Ramp
	None			

4. Overrides					
Instrument	Tag	Trigger	TD	Value	Ramp
Stm Supp Outbd Isol Vlv MO-15	zdihpcisws1[2]	A	0	Open	N/A
Stm Supp Inbd Isol Vlv MO-16	zdihpcisws2[2]	A	0	Open	N/A
HPCI Manual Isolation PB	zdihpcisws32	A	0	Off	N/A
ASD Room Outer Door	RA:MUX15C035	E8	0	ON	N/A
ASD Switch Position Abnormal	RA:MUX15C038	E8	30	ON	N/A
HPCI MO 16 Red Light	zlohpcisws1(2)	E8	30	OFF	N/A
HPCI MO 18 Red Light	zlohpcisws2(2)	E8	35	OFF	N/A
Rx Feed Pump A LO Pump A1 red light	zlorfloswrfopa1(1)	A	0	OFF	N/A
Rx Feed Pump A LO Pump A1 green light	zlorfloswrfopa1(3)	A	0	OFF	N/A
Rx Feed Pump A LO Pump A1 control switch	zdirfloswrfopa1(1)	A	0	PTL	N/A
Sump Pump D1 green light	zlorwswd1(1)	A	0	OFF	N/A
Sump Pump D1 red light	zlorwswd1(2)	A	0	OFF	N/A
Sump Pump D1 control switch	zdirwswd1(1)	A	0	OFF	N/A

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
Tube Rupture, HPCI Leak, and ATWS,
MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

5. **Panel Set-up**

- a. Ensure PMIS IDTs are blank
 - b. Ensure “A” DEH pump is running with its switch in AUTO
 - b. Place a red tag on “A1” FPLO Pump control switch.
 - c. Place a red tag on “D1” Sump Pump control switch.
- D. Monitor variable CRTCD(14), Diffused Nodal Clad Temperature. This is necessary for Critical Task performance monitoring.
- E. Compare current simulator load to the validation load. If they are not the same, run the scenario and look for possible changes.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

VI. SCENARIO CONDUCT

Conditions/Instructor Activities	Operator Activities
<u>Take the simulator out of FREEZE and allow the crew time to walkdown the panels.</u>	CREW Panel walkdown.
<u>ACTION</u> Crew briefs and starts power ascension.	CRS – Briefs crew and assigns task for the power ascension to 100% power.
<u>ROLE PLAY</u> If the crew does not start the power ascension shortly after assuming the watch, call as the load dispatcher and request at least 150 Mwe Net increase.	RO – Reviews procedure and adjust reactor recirc speeds to raise reactor power greater than 70%.
<u>ACTION</u> When the power ascension is complete, activate TRIGGER E2 to cause an accumulator low pressure alarm on control rod xx-yy (for a rod not fully withdrawn).	RO – Reports the alarm to the SRO and determines which accumulator is faulted.
<u>ROLE PLAY</u> After a few minutes, the equipment operator reports back the accumulator cannot be recharged due to a leak on the charging isolation valve.	SRO Directs an equipment operator to recharge the faulted accumulator.
<u>ROLE PLAY</u> If requested by the SRO, there are no other inoperable or slow control rods.	SRO Refers to TS 3.1.5 and 3.1.3. Declares the affected control rod inoperable.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities

Operator Activities

ACTION

When the Tech Spec assessment is complete, activate **TRIGGER E2** to cause HPCI to inadvertently initiate.

BOP

- Respond to inadvertent initiation of HPCI per 2.4CSCS.
- Verify not a valid signal by 2 independent indications
- Trip and lock out HPCI

CRS

- Directs/ensures HPCI tripped.
- (IF HPCI is not shut down within a minute or so, enter and direct the activities of EOP-5A, Secondary Containment Control due to high area radiation.

RO

If necessary, maintain reactor power approximately where it was before the injection with recirculation flow and/or control rods.

CRS

- Refer to Technical Specification 3.5.1, determine ACTION C.1 (1 hour) and ACTION C.2 (14 day) apply.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities	Operator Activities
<p><u>ACTION</u> When the Tech Spec assessment is complete, activate TRIGGER E3 to cause a 100% tube rupture in feedwater heater A5.</p>	<p>BOP Announces Heater A5 High Level Alarm (Alarm clears when the emergency dump valve opens.) Begins diagnosing heater A5 when alarm clears.</p> <p>Reports to SRO condensate flow has increased.</p>
<p><u>ROLE PLAY</u> The equipment operator reports back the heater level is very high in the band and all three dump valves are open. The radwaste operator reports higher than normal flows in radwaste.</p>	<p>SRO Directs the equipment operator to check the status of heater A5. Checks with the radwaste operator on the status of ? Enters procedure 2.4EX-STM.</p>
<p><u>ROLE PLAY</u> If the SRO calls plant management concerning the heater problem and reports the decision to shutdown, acknowledge the report and provide agreement to the decision to shutdown.</p>	<p>SRO Directs the crew to commence a normal shutdown as directed by procedure 2.2.29, Feedwater Heaters and Extraction Steam System.</p> <p>RO Begins power reduction using control rods and reactor recirc flow.</p> <p>BOP Supports power reduction - secures one RFPT.</p>

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities	Operator Activities
<p><u>ACTION</u> When the power reduction has exceeded 5%, activate TRIGGER E4 to cause HPCI steam line to begin to leak.</p>	<p>BOP</p> <ul style="list-style-type: none"> – Reports alarm 9-3-1/E-10: Area High Temp. – Diagnoses HPCI failed to isolate. – Attempts to isolate HPCI.
<p><u>ROLE PLAY</u> When the reactor building becomes positive, call the control room as security and report steam blowing out around the railroad airlock doors.</p>	
<p><u>ROLE PLAY</u> IF asked to investigate, report a lot of steam coming out of the HPCI quad.</p>	<p>CRS Enter and direct the activities of EOP-5A, Secondary Containment Control.</p> <ul style="list-style-type: none"> – Direct the Reactor Building be isolated (if high radiation signal is present). – Direct all quad coolers be started. – Direct verification of sump pump operation – Direct HPCI be manually isolated.
<p><u>ACTION</u> If requested to isolate HPCI from the ASD room perform the following activate TRIGGER E8.</p>	
<p><u>ROLL PLAY</u> Call the control room and report the valves will not close from the ASD room.</p>	

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities	Operator Activities
<p>NOTE: The crew should attempt to close MO-15 from MCC-R due to the steam leak rather than MO-16 which is in the Quad</p> <p>ROLE PLAY If asked to close HPCI MO-16 manually (local), wait 2 minutes, then report steam in the Rx Bldg prohibits access to the valve.</p>	<p>CRS</p> <ul style="list-style-type: none"> – Direct area temperatures be monitored. – Dispatch personnel to investigate the leak. <p>BOP Reports temperatures from Pnl 9-21 or PMIS.</p>
<p>NOTE: It takes ~ 8 minutes from the high temperature alarm until the first maximum safe temperature is reached (if they do not depressurize).</p>	<p>CRS/BOP Monitor for any secondary containment parameter reaches its maximum safe operating value:</p> <ul style="list-style-type: none"> • Temperatures (TABLE 9) • Radiation (TABLE 10) • Water levels (TABLE 11) <p>CRS When high area radiation alarms occur, direct 5.1RAD be performed.</p> <p>BOP Perform actions per 5.1RAD as directed.</p> <p>CRS</p> <ul style="list-style-type: none"> – Determine a manual scram is required BEFORE a Maximum Safe Operating Value has been exceeded (already complete). – Enter EOP-1A

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities

Operator Activities

ACTION

After the scram has been inserted, modify malfunction **RD02 to 80%**.

CRS

- Direct a manual scram be inserted.

RO

Manually scram the reactor as directed.

RO

- Make scram report - ATWS
- Report many control rods have not inserted.

CRS

Transition to 6A/7A.

- Mode switch in S/D
- ARI initiated
- RR pumps to minimum
- Insert control rods using 5.8.3 actions.
- Verify group isolations.
- Inhibit ADS

ROLE PLAY

If requested, as station operator close the CRD-29 valve 2 minutes after being directed (Remote Function **RD04**).

ACTION

If requested to bypass ARI (PTM #61/62), use **REMOTE FUNCTION RD18**, EOP PTMs 61 & 62, REMOVE.

RO

- Inhibit ADS
- Verify group isolations

RO

Insert control rods per 5.8.3

CRS

- Direct RPV pressure be maintained 800 to 1000 psig.
- Direct RPV water level be maintained +15" to +40".

BOP

- Maintain RPV pressure 800 to 1000 psig.
- Maintain RPV water level +15" to +40".

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities	Operator Activities
<p><u>NOTE:</u> The MSIVs will close on low level if the crew does not get the jumpers in before -95".</p>	<p>CRS Direct RPV water level be maintained between -25" (FZ) and +40" (WR).</p> <p>BOP Maintain RPV water level between -25" (FZ) and +40" (WR).</p>
<p><u>ACTION</u> When directed to install ARI PTMs, wait 2 minutes, then Insert REMOTE FUNCTION <u>RD18</u>, EOP PTMs 61 and 62 to <u>REMOVE</u>. Inform the Control Room.</p>	<p>RO</p> <ul style="list-style-type: none"> – Direct SO to install EOP PTM 61 & 62. – Install jumpers to defeat RPS. – Reset scram. – Allow SDV to drain. – Insert manual scram, report some rod movement. <p>RO (5.8.3)</p> <ul style="list-style-type: none"> – Insert rods with RMCS as drive pressure allows.
<p><u>NOTE:</u> Emergency depressurization CANNOT be anticipated.</p>	<p>CRS When 2 areas exceed Maximum Safe Operating Values, direct an Emergency Depressurization be performed.</p> <ul style="list-style-type: none"> – Exit the pressure leg of 6A, Enter and direct 6B. – Direct injection be stopped and prevented except RCIC, CRD and boron. <p>BOP Stop and prevent injection as directed by the CRS.</p> <p>CRS</p> <ul style="list-style-type: none"> – Verify PC level is > 6'. – Direct 6 SRVs be opened.

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

Conditions/Instructor Activities	Operator Activities
	<p>BOP When directed to emergency depressurize RPV then open 6 SRV's.</p> <p>CRS – When torus temperature reaches 95°F, enter and direct the activities of EOP-3A. – Direct torus cooling be placed in service.</p> <p>BOP Place maximum torus cooling in service.</p> <p>CRS Direct pressure be monitored and reported when MSCP is reached (135 psig).</p> <p>BOP Report when MSCP is reached.</p> <p>CRS Direct injection be started and slowly increased to restore and maintain RPV water level -25" (FZ) to 40" (WR).</p> <p>BOP Control injection as directed by the CRS.</p> <p>RO Report all Control Rods fully inserted.</p> <p>CRS – Enter and direct the activities of EOP-1A. – Direct RPV water level be restored and maintained +15" to +40".</p> <p>CRS Classifies event as a Site Area Emergency (based on EAL 3.3.4) and implements EPIP 5.7.2, Shift Supervisor EPIP.</p>
<p><u>ACTION</u> When RPV water level has been restored and maintained the scram is reset, delete malfunction RD02.</p>	

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
Tube Rupture, HPCI Leak, and ATWS,
MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

VII. SCENARIO TERMINATION

ACTION:

When all control rods are inserted, RPV water level has been restored +15" to +40", and classifications have been made, **FREEZE** the simulator.

VIII. POST-SCENARIO CRITIQUE

N/A

Scram Accumulator Low Pressure, Inadvertent HPCI Initiation, Heater A5
 Tube Rupture, HPCI Leak, and ATWS,
 MSOT 2 Areas, ED

Lesson No.: SKL052-52-94

Rev. No.: 00

VIII. CRITICAL TASK PERFORMANCE

A. Crew Performance

CREW CRITICAL TASKS	SAT	UNSAT
The crew shall initiate an Emergency Depressurization when 2 areas exceed MSOT.		
The Crew shall stop injection within 5 minutes of directing injection be stopped.		
The crew shall control injection such that RPV water level is restored and maintained -25(FZ) to +54"		
The crew shall insert control rods to ensure the reactor will remain shutdown under all conditions without boron prior to scenario termination.		

B. Individual Performance

CREW:		DATE:
CRS		PASS / FAIL
RO		PASS / FAIL
BOP		PASS / FAIL

V. INITIAL CONDITIONS

A. Plant Status:

1. 60% power, near middle of cycle.
2. The plant is being returned to service after a short forced outage.

3. Rod Sequence Information: Page: 24
Rod: 42-11
Notch: 12

B. Tech. Spec. Limitations in effect:

None

C. Significant problems/abnormalities:

1. "A1" Reactor Feed Pump Lube Oil Pump is tagged out due to a motor failure.
2. "D1" Sump Pump tagged out due to a motor failure.
3. I&C are completing 6.2H2O2.302, Div II H2O2 Analyzer Channel Calibration.

D. Sentinel Status: Green

E. Evolutions/maintenance for the on-coming shift:

Continue power ascension to 100% power.

Op-Test Number:	Scenario: 4	Event No.: 1	Page 1 of 8
Event Description: Power Reduction to < 70%			
Time	Position	Applicant's Actions or Behavior	
	CRS	DIRECTS power reduction to < 70% using control rods (NOTE: use of recirculation flow could place the reactor in the Power-to-Flow Map Stability Exclusion Zone).	
	ATCO	Prior to moving control rods, Operator shall verify rod positions in the Control Rod Sequence and Movement Binder agree with actual rod positions by comparing to RPIS display or 4-Rod/Full Core display.	
	ATCO	Withdraw or insert control rods to required rod pattern using prescribed methods and sequences as designated by a Reactor Engineer and/or Procedure 10.13. Rod Movement: #18-27 (26 to 20), #26-35 (26 to 20), #34-27 (26 to 20), #26-19 (26 to 20), #18-19 (48 to 20), #18-35 (48 to 20), #34-35 (48 to 20), #34-19 (48 to 20), #10-27 (48 to 20) & #26-43 (48 to 20)	
	BOP	All control rod moves performed with REACTOR MODE switch in START & HOT STBY or RUN shall be checked by a second Licensed Operator or an individual certified as an STE.	
	ATCO	Monitor core thermal limits (MFLCPR, MFLPD, and MAPRAT), per Procedure 6.LOG.601, to ensure compliance with Technical Specifications Section 3.2.	
	CRS	CONTACTS or DIRECTS contact to Mechanical Maintenance to begin work on Feed Pump A, Lube Oil Pump A1 following power reduction.	

Op-Test Number:	Scenario: 4	Event No.: 2	Page 2 of 8
Event Description: Surveillance 6.MS.201 Section 5 (Failure of MSIV MOV-80A to open)			
Time	Position	Applicant's Actions or Behavior	
	CRS	DIRECTS completion of the overdue Surveillance 6.MS.201, Main Steam Isolation Valve Operability Test (IST), Section 5, MSIV Spring Only Closure Tests.	
	ATCO	VERIFY power < 70% AND at least 7% lower than APRM rod block setpoints to compensate for flux spike due to MSIV closure.	
	BOP	At Panel 9-3, press and hold MSIV TEST button for MSIV being tested (MOV-80A) until it indicates closed.	
	BOP	When MSIV being tested is closed, checks at Panel 9-3 that green lights on bench board and PCIS mimic are on, and red lights on bench board and PCIS mimic are off.	
	BOP	At Panel 9-3, release MSIV TEST button for MSIV being tested (MOV-80A). NOTE: valve fails to open.	
	ATCO	MAY DETERMINE that annunciator 9-5-2/B-2, MSIV NOT FULL OPEN TRIP, does not come in as expected when MOV-80A is closed. IF SO, go to Event 5.	
	CRS	Enters 2.4MSIV and carries out actions	
	CRS	Refers to TS 3.6.1.3 PCIVs	
	CRS	MAY DIRECT BOP Reactor Operator close MOV-80B.	
	CRS	MAY DIRECT electrical maintenance to de-energize MOV-80A.	

Op-Test Number:	Scenario: 4	Event No.: 3	Page 3 of 8
Event Description: Loss of 69 kV Offsite Power Line (OPPD Nebraska City Line)			
Time	Position	Applicant's Actions or Behavior	
	BOP	Observe Board C, 345 KV NEB CITY LINE VOLTS, 161 KV LINE VOLTS, and 69 KV LINE VOLTS indication.	
	BOP	Reviews annunciator responses for C-1/G-6, C-2/D-10, C-2/C-10 & C-4/G-1	
	CRS	ENTERS 5.3GRID per annunciator procedure C-2/C-10.	
	CRS	CONTACTS Doniphan Control Center for line status	
	CRS	ENTERS 2.2.17, Emergency Station Service Transformer, Section 5, Removing Emergency Transformer from Service. DIRECTS steps 5.3 through 5.9. MAY request a Switching Order from Doniphan Control Center prior to performing steps 5.3 to 5.9.	
	CRS	ENTERS LCO 3.8.1	
	BOP	WHEN DIRECTED, Ensures Breakers 1FS and 1GS are open per Procedures 2.2.17 and 2.2.18.	
	CRS	MAY DIRECT Surveillance 3.8.1.1, Verify correct breaker alignment and indicated power availability for each offsite circuit, within 1 hour.	
	CRS	ENTERS 5.1WATCH after notification of tornado watch for Nemaha County	
	CRS	ENSURES the following Air Compressor lineup: Air Compressor A aligned to REC, Air Compressor B aligned to REC & Tendamatic in C-A-B	
	BOP	Places Tendamatic in C-A-B.	
	CRS	DIRECTS personnel to close and secure all external doors to all buildings both within and outside Protected Area. MAY DIRECT: (1) Terminate unnecessary activities, and (2) thoroughly inspect station for loose materials.	

Facility: Cooper Nuclear Station

Examination Date: 6/5/2005

Op-Test Number: Scenario: 4 Event No: 4 Page 4 of 8

Event Description: Main Steam Line A Radiation Monitor Fails High

Time	Position	Applicant's Actions or Behavior
	BOP	Responds to annunciator 9-4-4/A-4, MAIN STM LINE HI HI RAD.
	CRS	Refers to TS 3.3.6.1
	BOP	Observes MSL radiation monitors on the backpanel and reports to the CRS the radiation monitor for MSL A has failed high.
	CRS	Directs the radiation monitor that has failed be placed in the tripped condition.
	BOP	Places MSL A Radiation Monitor in INOP
	CRS	

Op-Test Number: Scenario: 4 Event No.: 5 Page 5 of 8

Event Description: **APRM Channel B Failure (INOP)**

Time	Position	Applicant's Actions or Behavior
	ATCO	Identifies half-scam condition.
	CRS	ENTERS 2.1.5, Reactor SCRAM, Section 4, Half Scram Reset. DIRECTS ATCO to place APRM Channel B in bypass and reset the half-scam
	ATCO	WHEN DIRECTED places place APRM Channel B in bypass
	ATCO	WHEN DIRECTED places REACTOR SCRAM RESET switch to Group 1 and 4, Group 2 and 3, then back to NORM. Ensures eight SCRAM GROUP lights (Panels 9-15 and 9-17) or SCRAM INDICATIONS GROUP A and GROUP B lights are on.
	CRS	ENTERS LCO 3.3.1.1 (RPS Instrumentation)
	CRS	ENTERS TLCO 3.3.1 (Rod Block Monitor)
	CRS	DIRECTS placing the RPS channel in trip
	ATCO	WHEN DIRECTED places RPS channel in trip
	ATCO	WHEN DIRECTED inserts Reactor Manual Control System rod withdrawal block

Op-Test Number: Scenario: 4 Events No.: 6 and 7 Page 7 of 8

Event Description: **(7) Tornado Warning, Lightning Strike (Loss of Offsite Power), Reactor SCRAM, and Steam Leak into Primary Containment, (8) Loss of DG-2 after 5 minutes**

Time	Position	Applicant's Actions or Behavior
	CRS	REENTERS 5.1WATCH following tornado warning for Nemaha County
	CRS	DIRECTS or SOUNDS the emergency alarm for 10 seconds
	CRS	DIRECTS or MAKES GAITRONICS announcement (per 5.1WATCH, Attachment 1, #1.1.2, "Attention, a Tornado Warning has been issued for Nemaha County.....")
	CRS	DIRECTS or CALLS Doniphan Control Center
	CRS	ENTERS 5.3EMPWR, Emergency Power, following lightning strike and complete loss of offsite power
	CRS	ENTERS 2.1.5, Reactor SCRAM, following reactor scram.
	ATCO	Presses both RX SCRAM buttons following reactor scram. Ensures eight SCRAM GROUP lights (Panels 9-15 and 9-17) or SCRAM INDICATIONS GROUP A and GROUP B lights are on.
	ATCO	Places REACTOR MODE switch to REFUEL. Checks <u>all</u> control rods are inserted by checking REFUEL MODE SELECT PERMISSIVE light is on <u>or</u> <u>all</u> green FULL-IN lights on full core display are on.
	ATCO	Lowers RFC-LC-83, MASTER LEVEL CONTROLLER, settape setting to 15".
	ATCO	Places REACTOR MODE switch to SHUTDOWN.
	ATCO	Places REACTOR SCRAM RESET switch to Group 1 and 4, Group 2 and 3, then back to NORM
	CRS	DIRECTS Doniphan Control Center to initiate Operating Instruction 7 per the Switching Order Book
	CRS	ENTERS EOP 1A, RPV Control (RPV level \leq +3 inches) & EOP 3A, Primary Containment Control (drywell pressure & torus water level) & EOP 5A, Secondary Containment Control (\geq max normal radiation due to operation of HPCI)

Op-Test Number: Scenario: 4 Events No.: 7 & 8 Page 8 of 8

Event Description: **(7) Tornado Warning, Lightning Strike (Loss of Offsite Power), Reactor SCRAM, and Steam Leak into Primary Containment, (8) Loss of DG-2 after 5 minutes**

Time	Position	Applicant's Actions or Behavior
	CRS	DIRECTS maintaining RPV level between +3" to +54" using ECCS
	ATCO or BOP	AS DIRECTED, maintains RPV level within the target band using HPCI and RCIC
	CRS	DIRECTS Reactor Operators in restoring REC and station Air Compressors using 5.3EMPWR Attachment 2
	BOP	WHEN DIRECTED, restores REC per 5.3EMPWR, Attachment 2, steps 1.2.1 to 1.2.9
	BOP	WHEN DIRECTED, restores station air compressors per 5.3EMPWR, Attachment 2, steps 1.6.1 to 1.6.5
	CRS	DIRECTS Station Operator to close CST valves per 5.3EMPWR, Attachment 2, step 1.7
	CRS	DIRECTS initiating Torus Sprays when drywell pressure is between 4 - 8 psig
	ATCO or BOP	AS DIRECTED, initiates and operates Torus Sprays
	CRS	<u>DOES NOT</u> DIRECT torus cooling when torus temperature $\geq 95^{\circ}\text{F}$ [torus sprays have higher priority]
	CRS	DIRECTS initiating Drywell Sprays when torus pressure ≥ 10 psig. DIRECTS maintaining torus pressure in a range 2 to 10 psig using Drywell Sprays.
	ATCO or BOP	AS DIRECTED, initiate and operate Drywell Sprays
	BOP	WHEN DIRECTED, places condensate pumps, condensate booster pumps and sparger pumps in TRIP
	BOP	WHEN DIRECTED, places breakers 1AS and 1BS in pull-to-lock