CONSTELLATION
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2690010201 / PLOR-159C K/A: G2.1.20

URO: 4.6 SRO: 4.6

TASK DESCRIPTION: PERFORM REACTOR COOLANT LEAKAGE SURVEILLANCE

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. Copy of ST-O-020-560-2, Rev. 16, “Reactor Coolant Leakage Test” with:
   - Steps 3.2 through 6.1.1 are signed-off/circle-slashed as complete.
   - Hand-written data already filled in on Data Sheet 1 (use Attachment 2 of this JPM for exact values)

2. Calculator

C. REFERENCES

1. ST-O-020-560-2, Rev. 16, “Reactor Coolant Leakage Test”

D. TASK STANDARD

1. Satisfactory task completion is indicated when reactor coolant leakage has been calculated using Data Sheet 1 of ST-O-020-560-2 “Reactor Coolant Leakage Test”.

2. Estimated time to complete: 15 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to calculate reactor coolant leakage using ST-O-020-560-2 “Reactor Coolant Leakage Test”. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is at 100% power.

2. The Unit 2 Drywell Sump Monitoring System is operable.

3. The Unit 2 Drywell Floor Drain System is in a normal lineup.

4. The Unit 2 Drywell Equipment Drain System is in a normal lineup.

5. ST-O-020-560-2,”Reactor Coolant Leakage Test” is in progress for Sunday at 0000.

6. ST-O-020-560-2,”Reactor Coolant Leakage Test” is complete up to and including Step 6.1.1. Data has also been recorded in Step 6.2.1.

7. The previous week’s last six 4-hour flow data readings of Drywell Floor and Equipment Drain Sumps have been entered on Data Sheet 1 of ST-O-020-560-2,”Reactor Coolant Leakage Test”.

8. The current 4-hour Drywell Floor Drain and Equipment Drain sump integrator readings have already been documented on Data Sheet 1 of ST-O-020-560-2,”Reactor Coolant Leakage Test”.

G. INITIATING CUE

The Control Room Supervisor directs you to complete the following:

1. Perform the calculations in steps 6.1.2 through 6.3.1 of ST-O-020-560-2,"Reactor Coolant Leakage Test". Independent Verification will be performed after your task is complete.
2. Perform step 6.4, "Acceptance Criteria Verification" of ST-O-020-560-2,"Reactor Coolant Leakage Test".
3. Make any necessary comments on the surveillance test.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	**Cue: Hand the Examinee the hard copy of ST-O-020-560-2,"Reactor Coolant Leakage Test" with:** • **Steps 3.2 through 6.1.1 already signed-off and place kept.** • **Data Sheet 1 data filled in by hand from Attachment 2 of this JPM.**	P	This step is a CUE only – not a performance step. NOTE: There may be very small differences from the STANDARDS shown below due to rounding.
*2	Calculate and record Drywell Floor Drain 4-hour integrator difference.	P	Subtract the latest Floor Drain Sump Integrator reading from the previous 4-hour reading. Place a "**54**" in column (a) of Data Sheet 1.
*3	Calculate and record Drywell Floor Drain flow in gallons per minute.	P	Divide the number from column (a) of Data Sheet 1 by 12. Place a "**4.5**" in column (b) of Data Sheet 1.
*4	Calculate and record the Drywell Floor Drain 24-hour running average flow.	P	Add the six flow numbers from Column (b) and divide by 6. Place a "**2.42**" in column (c) of Data Sheet 1.
*5	Record 24 hour running average flow Drywell Floor Drain for 24 hours ago.	P	Record a "**0.36**" in column (d) of Data Sheet 1.
*6	Calculate and record the Drywell Floor Drain 24-hour running average difference. **Cue: examinee may stop here and notify Supervision that the test exceeds the 2 gpm running average.** **Acknowledge notification and have examinee continue with the assigned steps of the surveillance test.**	P	Subtract column (d) from column (c) on Data Sheet 1. Place a "**2.06**" in column (e) on Data Sheet 1.
*7	Calculate and record Equipment Floor Drain 4-hour integrator difference.	P	Subtract the latest Equipment Drain Sump Integrator reading from the previous 4-hour reading. Place a "**26**" in column (f) of Data Sheet 1.

STEP NO	STEP	ACT	STANDARD
*8	Calculate and record Drywell Equipment Drain flow in gallons per minute.	P	Divide the number from column (f) of Data Sheet 1 by 12. Place a "**2.17**" in column (g) of Data Sheet 1.
*9	Calculate and record Total Drywell Leakage (h).	P	Adds the six Floor Drain numbers from column (b) to the six Equipment Drain numbers from column (g) of Data Sheet 1. Divide the above number by 6 and place a "**4.05**" in column h of Data Sheet 1.
*10	Verify the following data is acceptable: Column (b) is $\leq$ 5.0 gpm Column (e) is $\leq$ 2.0 gpm Column (h) is $\leq$ 25.0 gpm	P	Verifies all data is below the specified limits and initial "All Data Within Accep Crit" Column of Data Sheet 1, except the following are noted as **UNSAT**.* • 24 hour Run Avg. Diff (Column e) is > 2 gpm.
11	If any Black Box is initialed, then stop the test and notify the RO and SMgt.	P	After initialing a Black Box, then stops the test and notifies the RO and SMgt.
12	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When step 6.4 of ST-O-020-560-2,"Reactor Coolant Leakage Test" has been completed the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2150300101 / PLOR-326CA K/A: G2.1.37
RO: 4.3 SRO: 4.6

TASK DESCRIPTION: Perform APRM Scram Margin Check

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

6. This JPM should be performed in the Simulator but may be performed in the actual Control Room with no impact on plant operation. Obtain Control Room Supervisor and Unit RO permission prior to performing this JPM and prior to entering the controls area.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

1. SO 60A.7.C-2 Rev. 11 “APRM Scram Margin Check”

2. SO 2A.1.B-2 Rev. 64 “Starting the Second Recirc Pump”

D. TASK STANDARD

1. Performance Location: Simulator

2. Satisfactory task completion is indicated when the student determines that the scram margin is not adequate for Recirc Pump Start.

3. Estimated time to complete: 10 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform an APRM scram margin check to satisfy the requirements of SO 2A.1.B-2, “Starting the Second Recirc Pump” using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is at 35% power preparing to start the B Recirc Pump.

2. All APRM Channels are Operable and in service.

G. INITIATING CUE

The Control Room Supervisor directs you perform the scram margin determination required by step 4.18 of SO 2A.1.B-2, “Starting the Second Recirc Pump”. SO 60A.7.C-2 “APRM Scram Margin Check” is complete through step 4.2.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
Cue: Hand Student a copy of SO 60A.7.C-2 with Data Sheet 1 containing APRM Scram Setpoint reading 59, 57, 59, 54 for Channels 1-4, respectively; and APRM Current reading 35, 34, 35, and 35 for Channels 1-4 respectively.			
*1	Determine SCRAM margin for APRM # 1 by performing the following calculation AND recording the value on Data Sheet 1 under "SCRAM MARGIN": **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C**	P	Correctly calculates APRM #1 Scram Margin on Data Sheet 1: **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP –C** (NOTE: This value should be 24%)
*2	Determine SCRAM margin for APRM # 2 by performing the following calculation AND recording the value on Data Sheet 1 under "SCRAM MARGIN": **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C**	P	Correctly calculates APRM #2 Scram Margin on Data Sheet 1: **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C** (NOTE: This value should be 23%)
*3	Determine SCRAM margin for APRM # 3 by performing the following calculation AND recording the value on Data Sheet 1 under "SCRAM MARGIN": **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C**	P	Correctly calculates APRM #3 Scram Margin on Data Sheet 1: **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C** (NOTE: This value should be 24%)
*4	Determine SCRAM margin for APRM # 4 by performing the following calculation AND recording the value on Data Sheet 1 under "SCRAM MARGIN": **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C**	P	Correctly calculates APRM #4 Scram Margin on Data Sheet 1: **SCRAM MARGIN = APRM SCRAM SETPOINT - APRM CURRENT = SP -C** (NOTE: This value should be 19%)
5	Obtain a copy of procedure SO 2A.1.B-2.	P	A copy of procedure SO 2A.1.B-2 is obtained.
*6	Compare SCRAM margin on Data Sheet #1 with allowable value specified in SO 2A.1.B-2 and determine that APRM #4 SCRAM margin does not meet standard of "greater than 20%."	P	Trainee recognizes that SCRAM margin does not meet requirement of SO 2A.1.B-2.

STEP NO	STEP	ACT	STANDARD
*7	Inform Control Room Supervisor that the SCRAM margin is not acceptable for APRM #4. (CUE: Acknowledge report)	P	Trainee informs the Control Room Supervisor that the APRM #4 SCRAM margin is unacceptable.
8	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
9	As an evaluator, ensure that you have positive control of all exam material provided to the examinees (Task Conditions/Prerequisites AND procedures.	P	**Positive Control Established.**

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the trainee has determined the scram margin for all APRM's and that APRM #4 is not acceptable for Recirc Pump Start, the evaluator may then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Reactor Operator

TASK-JPM DESIGNATOR: 2120070101 / PLOR460C K/A: G2.2.1
RO: 4.5 SRO: 4.4

TASK DESCRIPTION: Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. Calculator

2. Provide the examinee with a copy of GP-2-2 Step 6.1.34 populated with the following WRNM count rates:

WRNM A	42.8	WRNM C	60.2	WRNM E	55.6	WRNM G	41.7
WRNM B	62.3	WRNM D	44.6	WRNM F	50.9	WRNM H	58.9

C. REFERENCES

1. GP-2-2, Rev 29, “Normal Plant Start-Up”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the count rate range where the reactor is expected to go critical has been calculated in accordance with GP-2-2.

2. Estimated time to complete: 10 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to review a Liquid Radwaste Discharge, using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is at 0% power following a refueling outage.

2. GP-2-2 is in progress and has been completed through step 6.1.34.

G. INITIATING CUE

The Control Room Supervisor directs you to perform step 6.1.35 of GP-2-2 to determine the count rate range where the reactor is expected to go critical.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Determine lowest count rate provided.	P	Identifies the lowest count rate is WRNM G at 41.7 cps.
*2	Multiply lowest count rate by 128.	P	Record 5338 in the space provided in GP-2-2 Step 6.2.35 for “seven doublings” (41.7 x 128). *Answer Range: 5337-5338*
3	Determine highest count rate provided.	P	Identifies the highest count rate is WRNM B at 62.3 cps.
*4	Multiply highest count rate by 512.	P	Record 31898 in the space provided in GP-2-2 Step 6.2.35 for “nine doublings” (62.3 x 512). *Answer Range: 31,897-31,898*
5	Record initial, date and time in blank provided for step 6.1.35 of GP-2-2.	P	Record initials, date, and time.
NOTE: If asked, state that the CRS will find another individual to perform the Independent Verification.			
6	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the count rate range where the reactor is expected to go critical has been determined and documented, terminate the exercise.

CONSTELLATION
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator

TASK-JPM DESIGNATOR: 2950120501 – PLOR-92C K/A: G2.4.43

RO: 3.2 SRO: 3.8

TASK DESCRIPTION: Knowledge of emergency communications systems and techniques

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. Access to a Web-connected Computer

C. REFERENCES

1. EP-MA-114-100, Rev 30, Mid-Atlantic State / Local Notifications

2. EP-AA-112-100, Rev 19, Control Room Operations

3. EP-AA-112-100-F-06, Rev Z, ERO Notification and Augmentation

4. EPA 314, Rev B, EP AID – ERO Activation for Simulator Only

D. TASK STANDARD

1. Satisfactory task completion is indicated when the trainee has initiated ERO Activation in accordance with EPA 314.

2. Estimated time to complete: 10 minutes

E. DIRECTIONS TO EXAMINEE

1. When given the initiating cue, perform necessary steps to initiate ERO activation using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

2. TRUE (Actual) PEER CHECK will be performed between candidate and evaluator during Everbridge activation to ensure ERO is NOT actually activated.

F. TASK CONDITIONS/PREREQUISITES

1. The Shift Emergency Director has declared an ALERT based on a rise in plant radiation levels that impedes operation of systems required to maintain plant safety functions.

G. INITIATING CUE

The Shift Emergency Director directs you (the Shift Communicator) to initiate ERO Activation (Call-out) in accordance with EPA 314, Steps 1.3 - 1.11 - (Obtain a PEER CHECK from the Examiner for Step 1.5 to ensure Everbridge Training Environment is entered).

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
Hand the candidate a “For Training Only” copy of EPA 314, “EP AID – ERO Activation for Simulator Only”, with Peach Bottom simulator codes in step 1.1.			
*1	**OPEN** a connection to Everbridge webpage – https://manager.everbridge.net/login	P	Connection established as indicated by Everbridge webpage being displayed.
*2	**ENTER** Peach Bottom User Name and Password and **SELECT** “Sign In.”	P	Correct Peach Bottom User Name and Password entered, next layer of webpage is displayed.
Evaluator Caution Verify that the following message is received, “You are entering a Peach Bottom Simulator Organization. This is for Training Only. No live Broadcasts can be sent from this simulator organization.” **IF** this is received **THEN** direct the Examinee to proceed.			
3	**VERIFY** Peach Bottom is displayed. Select “Proceed.”	P	Candidate verifies Peach Bottom is displayed.
*4	**SELECT** the “Launch Incident” button	P	Candidate selects the “Launch Incident” button
5	**SELECT** Scenario 01A.	P	Candidate selects Scenario 01A.
*6	**VERIFY** Scenario “01A: Simulator – Actual Event Respond to Facility” is displayed.	P	Candidate verifies Scenario 01A is selected.
7	**If** the scenario displayed is not correct, **then SELECT** correct scenario **and Return** to Step 1.8.	P	Candidate repeats selection and verification steps, if required.
*8	**If** the scenario displayed is correct, **then SELECT** “Send 1 Template(s) now.”	P	Send Template is selected.
9	**VALIDATE** there is a date and time stamp for the notification.	P	Candidate verifies date and time stamp for the notification.
10	**RECORD** time of Scenario Broadcasts.	P	Time recorded in step 1.11.

11	Notify the Shift Emergency Director that ERO Activation (Call-out) has been completed in accordance with EPA 314, Steps 1.3 - 1.11 **Cue: Acknowledge notification.**	P	Notify Supervision of task completion NOTE - As Evaluator ensure you have positive control of all exam material provided to the examinee (Task Conditions / Prerequisites) AND procedures. LOGOUT of any computer screens/programs (Everbridge).

Under “ACT” P - must perform
S - must simulate
D – must discuss

I. TERMINATING CUE

When the trainee has completed the ERO activation process the Shift Emergency Director should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2991930102/ PLOR-394C K/A: G2.1.37
SRO: 4.6

TASK DESCRIPTION: Reactivity Management

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

6. This JPM should be performed in the classroom.

B. TOOLS AND EQUIPMENT

1. A 3D Predictor Case that shows the following:
   a) POWER MWT 4024 (Rated x1.002)
   b) CORE POWER 100.02%
   c) MFLPD (highest) of 1.002
   d) FLLLP of 1.005

2. A P1 printout at 100% power.

C. REFERENCES

1. OP-AB-300-1003, Rev. 19, “BWR Reactivity Maneuver Guidance”

2. Core Operating Limits Report

D. TASK STANDARD

1. Satisfactory task completion is indicated when the student determines: 1) the core power exceeds the license limit of 4016 MWth; 2) Both MFLPD and FLLLP exceed 1.000.

2. Estimated time to complete: 20 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given a completed surveillance test, determine if the test is acceptable or not acceptable. State all required actions, if any.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is at 98% power.

2. A reactivity maneuver for Unit 2 is planned.

3. As the CRS, you have been given a current P1 printout, and a Predictor Case P1, which shows the expected state of the reactor after the reactivity maneuver has been performed.

G. INITIATING CUE

1. Review the current P1 and the Predictor Case P1.

2. Either approve the reactivity maneuver, or do NOT approve the reactivity maneuver.

3. If the reactivity maneuver is NOT approved, state all reasons why it is not approved.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Review current P1 and Predictor Case P1.	P	Review current P1 and Predictor Case P1.
NOTE The steps below are not required to be performed/documented in the order provided.			
*2	Recognize that Core Power (MWT) of 4024 is above the license limit of 4016 MWth.	P	Documents that Core Power (MWT) of 4024 is above the administrative limit of 4015 MWth.
*3	Recognize that MFLPD thermal limit is greater than 1.000.	P	Documents that MFLPD thermal limit is greater than 1.000.
*4	Recognize that FLLLP is greater than 1.000.	P	Documents that FLLLP is greater than 1.000.
*5	Determines if the reactivity maneuver can be approved.	P	Documents that the reactivity maneuver is not approved for the reasons stated above.
6	As an evaluator, ensure that you have positive control of all exam material provided to the examinees (Task Conditions/Prerequisites AND procedures.)	P	Positive Control Established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the candidate has not approved the Reactivity Maneuver for the reasons stated, the evaluator will terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 3443100402 / PLOR-259C K/A: G2.1.34
SRO: 3.5

TASK DESCRIPTION: Knowledge of RCS or balance of plant chemistry controls, including parameters measured and reasons for the control

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. CH-10 “Chemistry Goals”
   - Provide examinee blank copy of procedure CH-10
   - Fill out four separate CH-10-1 Chemistry Recommendation Forms using Attachment 2 of this JPM as a reference. One form for reactor water, the other three are for A, B, and C condensate pump discharge.

2. ON-126 “High Condensate Conductivity” (give access to if requested)

3. TRM 3.9, RCS Chemistry (give access to if requested)

4. Attachment 3 “Condenser Conductivity”

C. REFERENCES

1. CH-10, Rev. 23, “Chemistry Goals”

2. ON-126, Rev. 3, “High Condensate Conductivity”

3. TRM 3.9, Rev 1, “RCS Chemistry”

D. TASK STANDARD

1. Satisfactory task completion is indicated when ON-126 “High Condensate Conductivity” reactor coolant chemistry actions and Technical Requirements Manual (TRM) Action Levels are determined in response to a condenser tube leak.

2. Estimated time to complete: 25 minutes <u>Non-Time Critical</u>

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to determine immediate plant impact and compensatory measures, if any, for identified system chemistry limits using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 has been at 100% power for 160 days.

2. The Hydrogen Water Chemistry System is in service.

3. Chemistry has delivered four CH-10-1 Chemistry Recommendation Forms related to Unit 2 condensate conductivity and Reactor Water chloride concentration.

4. PMS conductivity values match values provided on the CH-10-1 forms.

5. All the samples have been verified.

6. Conductivities on CRS-2-12-132 “Cleanup Filter Demin Inlet” are rising.

G. INITIATING CUE

- The Shift Manager directs you to determine what plant and/or Technical Specification/TRM/ODCM actions, if any, exist for the above conditions.
- **List** procedures entered and actions to be taken below.
- Do NOT include actions for cleanup of the Condensate and Feedwater systems.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
*********NOTE TO EVAULATOR********* **Provide all four CH-10-1 forms and references to the examinee at the start of the JPM.**			
*********NOTE TO EVAULATOR********* **The following steps can be performed in any order.**			
*********NOTE TO EVAULATOR********* **IF asked about any other MCR indications/alarms, THEN report that they are consistent with initial forms and conditions provided.**			
1	Review the four CH-10-1 Chemistry Recommendation Forms for Unit 2.	P	Reviews CH-10-1 Chemistry Recommendation Forms. Reviews CH-10 “Chemistry Goals”.
*2	Enter ON-126 “High Condensate Conductivity”. (Cue: As Chemistry, state that conductivity will severely affect reactor water chemistry. If requested, report conductivities on CRS-2-12-132 are rising)	P	Recognize that condensate pump discharge conductivity > 0.4 µS/cm is a symptom for entry into ON-126 “High Condensate Conductivity” Documents on cue sheet ON-126 as a procedure to be entered.
*3	Determine that a plant shutdown in accordance with GP-3, “Normal Plant Shutdown” Is required.	P	Determines that a plant shutdown in accordance with GP-3, “Normal Plant Shutdown”, IAW ON-126, is required. Documents on cue sheet GP-3 as a procedure to be entered.
4	Direct Chemistry to: • Determine the cause of the conductivity. • Monitor reactor water chemistry for conductivity, chlorides, and sulfates. (Cue: If asked reactor water conductivity, state that that it is below 5.0 µS/cm.)	P	Directs Chemistry to: • Determine the cause of the conductivity. • Monitor reactor water chemistry for conductivity, chlorides, and sulfates.

STEP NO	STEP	ACT	STANDARD
5	Determine the leaking waterbox by performing any of the following: • Select Condenser Conductivity under Ops Graphics on the PMS computer • Compare the Condensate pump discharge conductivities • Monitor PMS computer points (Cue: Attachment 3 Condenser Conductivity is handed to the examinee. If the examinee identifies the "2A" waterbox, and not the 2A1 waterbox, ask which 2A waterbox.)	P	Determines the leaking waterbox by performing any of the following: • Select Condenser Conductivity under Ops Graphics on the PMS computer • Compare the Condensate pump discharge conductivities • Monitor PMS computer points **Note**: The handout "Condenser Conductivity" will allow the student to identify which waterbox. Determines 2A1 condenser waterbox is leaking since its conductivity is reading high and is connected to Condensate Pump 2C which has high conductivity.
*6	When the source of the inleakage has been determined, then remove the affected waterbox from service in accordance with SO 28A.7.B-2(3), "Removal of a Water Box from Service".	P	Documents removal of the "2A1" water box from service using SO 28A.7.B-2 (or similar statement) on provided cue sheet.
*7	Apply TRM 3.9 Condition D: With pH not within limits of Table 3.9-1 but ≥ 4 and ≤ 10: Restore pH to within limits within 24 hours (Cue: NOTE: If asked for the conversion between µmho and µSm, 1 µmho = 1 µSm.)	P	Documents TRM 3.9 Condition D on cue sheet. Lists that they must restore pH to within limits within 24 hours
8	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the determination of what immediate plant and/or regulatory actions, if any, exist, the evaluator will then terminate the exercise.

CONSTELLATION
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2270140201 / PLOR-256C K/A: G2.2.12
SRO: 4.1

TASK DESCRIPTION: Knowledge of surveillance procedures

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

   c. Applicable JPM Work Practice Standards, TQ-AA-150-J040 graded satisfactorily.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. Calculator

2. Copy of ST-O-007-560-2, "Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log".

3. A calculation error made on Data Sheet 1 such that “Accumulated Total Time Since Beginning of Calendar Year” is greater than 90 hours, with the procedure completed to indicate total time is less than 90 hours (use Attachment 2 of this JPM for exact values).

C. REFERENCES

1. ST-O-007-560-2, Rev 3, "Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log".

2. Unit 2 Tech Specs 3.6.1.3

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Plant Staff review has been completed, the calculation error on Data Sheet 1 identified, and the total accumulated time a purge/vent valve is open has been determined to be greater than 90 hours.

2. Estimated time to complete: 20 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to review the Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 has been at 100% power for the last 14 months.

2. ST-O-007-560-2 “Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log” for Unit 2 has been completed.

3. The “Accumulated Total Time Since Beginning of Year” is greater than 80 hours. Shift Management has been notified as required by Step 6.1.6.

G. INITIATING CUE

You are the Work Control Supervisor. Complete the Shift Management review and approval of ST-O 007-560-2, “Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log”. Document any errors found in the procedure on the cue sheet. Document any required Technical Specification/TRM/ODCM actions on the cue sheet.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	**Cue: Hand the Examinee a completed copy of ST-O-007-560-2, "Primary Containment Purge/Vent Isolation Valve Cumulative Hour Log" with Data Sheets 1 and 2 data filled in by hand from Attachment 2 of this JPM.**		
2	Review ST-O-007-560-2 for completeness.	P	Verifies all procedure steps, Data Sheet 1, and Data Sheet 2 have been completed satisfactorily.
3	Verify calculations.	P	Performs all calculations that were done on Data Sheet 1 to verify they are correct and properly recorded.
*4	Recognize calculation errors.	P	Recognizes, by DOCUMENTING on cue sheet, the following calculation errors on Data Sheet 1: 1. On 3/14/24, notes a calculation error in "Accumulated Total Time Since Beginning of Calendar Year" column (which shows 79 hours 41 minutes) but should show 81 hours 41 minutes. 2. On 3/16/24, notes that with calculation error above carried forward "Accumulated Total Time Since Beginning of Year" column (which shows 88 hours 1 minutes) should now show 90 hours 1 minutes. This row should now be initialled UNSAT. 3. On 3/17/24, notes that with the calculation error above carried forward "Accumulated Total Time Since Beginning of Year" column (which shows 89 hours 7 minutes) should now show 91 hours 7 minutes. This row should now be initalled UNSAT.

STEP NO	STEP	ACT	STANDARD
*5	Determine the “Accumulated Total Time Since Beginning of Year” is beyond the Acceptance Criteria specified in Step 5.0, of less than 90 hours/year.	P	Determines and DOCUMENTS on cue sheet that the “Accumulated Total Time Since Beginning of Year” is beyond the Acceptance Criteria specified in Step 5.0, of less than 90 hours/year.
*6	Determine that TS 3.6.1.3 Condition E should be entered (Purge/Vent flowpath open for an accumulated time greater than 90 hours for the calendar year while in MODE 1 or 2 with Reactor Pressure greater than 100 psig).	P	Recognizes, by DOCUMENTING on cue sheet, that TS 3.6.1.3 Condition E should be entered and required actions taken.
7	Initiate an Issue to correct problems.	P	May initiate an Issue to correct problems.
8	Notify Shift Management of unsatisfactory test results. (Cue: Acknowledge report.)	P	Reports to Shift Manager and/or Control Room Supervisor that the “Accumulated Total Time Since Beginning of Year” is greater than 90 hours.
9	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the review of ST-O-007-560-2 has been completed, calculation errors on Data Sheet 1 identified, and the total accumulated time a purge/vent valve is open has been determined to be greater than 90 hours, the evaluator will terminate the exercise.

CONSTELLATION
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2991880102 PLOR 351 C K/A: G 2.3.14
SRO: 3.8

TASK DESCRIPTION: Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities, such as analysis and interpretation of radiation and activity readings as they pertain to administrative, normal, abnormal, and emergency procedures, or analysis and interpretation of coolant activity, including comparison to emergency plan or regulatory limits (SRO Only)

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

1. OP-AA-106-102, Rev 7 “Accidents Involving the Transportation of Rad Materials”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the candidate has correctly identified the MINIMUM required notifications based on conditions provided.

2. Estimated time to complete: 20 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to complete Attachment 1 of OP-AA-106-102 and identify the minimum required notifications for the accident/incident using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. A phone notification has been received regarding a Transportation event involving a shipment of Radioactive Materials which originated at the station.

2. The shipper’s vehicle inadvertently forced a Maryland resident’s vehicle to exit the highway at high speed, where upon the resident’s vehicle impacted a large tree.

3. The Maryland resident was transported to the Upper Chesapeake Regional Hospital with life-threatening injuries sustained when their vehicle impacted the tree.

4. NO damage to the shipper’s vehicle.

5. NO damage to the Radioactive material in transient.

6. Detailed notes have been recorded by the Shift Manager from which you are to complete Attachment 1 of OP-AA-106-102.

7. It has been determined that the event is NOT reportable per LS-AA-1120.

8. The Shift Manager will complete the required notifications.

G. INITIATING CUE

The Shift Manager provides you with the detailed notes and directs you to (1) complete Attachment 1 of OP-AA-106-102, (2) determine if the event is a Transportation Accident or Incident, and (3) identify the MINIMUM required notifications required by OP-AA-106-102. In addition to completing Attachment 1, document your determinations on the CUE SHEET provided unless otherwise specified by your evaluator.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Use the provided notes to complete OP-AA-106-102 Attachment 1.	P	Candidate completes OP-AA-106-102 Attachment 1. Refer to JPM Att 2 for an example.
*2	Determine that the situation is a TRANSPORTATION INCIDENT.	P	Candidate determines event to be TRANSPORTATION INCIDENT based on OP-AA-106-102 Para 2.2.
*3	Determine that the Station Duty Officer / Duty Station Manager is to be NOTIFIED.	P	Candidate determines Station Duty Officer / Duty Station Manager notification required by OP-AA-106-102 Para 4.3.1.
*4	Determine that the Nuclear Duty Officer is to be NOTIFIED.	P	Candidate determines NDO notification required by OP-AA-106-102 Para 4.3.2.
*5	Determine that the Station Radiation Protection Manager or designee is to be NOTIFIED.	P	Candidate determines RPM or designee notification required by OP-AA-106-102 Para 4.3.3.
***** NOTE to EVALUATOR ***** **Candidate may engage in discussion/speculation re: Exelon Nuclear Response Team. If so, inform candidate that this is NOT required. Likewise, notification of agencies listed in Attachment 2 is NOT REQUIRED. IF candidate identifies that the additional notifications are REQUIRED, this should be critiqued as being ABOVE THE MINIMUM.**			
6	Determine that the Station AND Corporate Communications Departments are to be NOTIFIED.	P	Candidate determines Station AND Corporate Communications Departments are to be NOTIFIED as indicated in OP-AA-106-102 Para 4.3.5.1. Note that this is NOT a critical step, as the procedure indicates that a response ***may*** be required.
7	As an evaluator, ensure you have positive control of all exam material provided to the examinee (Task Conditions / Prerequisites) AND procedures AND any Data Sheets or scrap paper used for calculations.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the required notifications have been determined and documented, the evaluator will terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2007510502/PLOR-268C K/A: 2.4.41
SRO: 4.6

TASK DESCRIPTION: Classification of Emergencies and PARs

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

   c. Applicable JPM Work Practice Standards, TQ-AA-150-J040 graded satisfactorily.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

1. EP-AA-112-100, Rev 019, “Control Room Operations”

2. EP-AA-111, Rev 024, “Emergency Classification and Protective Action Recommendations”

3. EP-MA-114-100, Rev 030, “Mid-Atlantic State/Local Notifications”

4. EP-MA-114-100-F-01, Rev U, "State/Local Notification Form”

5. EP-AA-112-100-F-01, Rev AD, “Shift Emergency Director Checklist”

6. EP-AA-1007, Addendum 3, Rev. 11, “Emergency Action Levels for Peach Bottom Atomic Power Station”

7. EP-AA-114-F-02, Rev A, “BWR Release in Progress Determination Guidance”

8. EP-AA-125-1002, Rev 014, "ERO Performance – Performance Indicators Guidance"

9. EP-AA-111-F-08, Rev J, "Peach Bottom PAR Flowchart"

D. TASK STANDARD

1. Satisfactory task completion is indicated when the plant conditions have been classified correctly and EP-MA-114-100-F-01, “State/Local Event Notification Form” has been completed accurately.

   (NOTE: The criteria for accurate Event Notification form completion were derived from EP-AA-125-1002 Rev 14, “ERO Performance – Performance Indicators Guidance”).

2. Estimated time to complete: Event Classification – 15 minutes: Time Critical
   State/Local Notification – 13 minutes: Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to make the EAL classification and complete the State/Local Event Notification form (if required). I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

NOTE: This is a time critical JPM.

1. Both Units are operating at 100% power.

2. Security calls the MCR, and reports:

   a. An explosion along the south fence of the protected area has occurred.

   b. Armed attackers have breached the Unit 2 Turbine Building.

   c. Shots are being fired inside the protected area.

3. Unit 2 and 3 were scrammed per SE-23.

4. All Unit 2 Condensate Pumps have unexpectedly tripped.

5. U2 RPV water level lowered to -50”, and HPCI failed to start.

6. U2 RPV water level being recovered using RCIC.

7. Wind speed is 15 mph. Wind direction is 80 degrees.

G. INITIATING CUE

As the Emergency Director, make the EAL classification and complete the State/Local Event Notification form (if required).

The Electronic Off-Site Notification System (EONS) is NOT available. If required, complete the State/Local Event Notification form via paper hard-copy. Inform the Examiner when you have completed the State/Local Event Notification Form.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
***** NOTE ***** **Record the time using the clock above the Full Core Display. Time = _____**			
1	Obtain a copy of EP-AA-112-100-F-01 and EP-AA-1007 Addendum 3.	P	Copies of EP-AA-112-100-F-01 and EP-AA-1007 Addendum 3 are obtained.
*2	Determine the appropriate EAL IC. (Cue: Classification is acknowledged.)	P	The following sections of EP-AA-1007, Addendum 3 are referenced: • (HS1) A notification from the Security Force that a Hostile Action is occurring or has occurred within the Protected Area. • (HG1) A notification from the Security Force that a Hostile Action is occurring or has occurred within the Protected Area AND o Any Table H1 safety function cannot be controlled or maintained o Damage to spent fuel has occurred or is imminent. (HG1 should be referenced. It does not apply due to RPV water level rising and under the control of the Control Room.) *** The Event is classified as a Site Area Emergency per HS1 (Critical portion of this step).**
3	Announce the event classification to the facility staff. (Cue: Acknowledge the event classification)	P	Announces the event classification to the Control Room crew.
***** NOTE ***** **<u>WHEN</u> the examinee completes the classification determination,** **<u>THEN</u> record the time using the clock above the Full Core Display. Time = _____** **Determine if the elapsed time since the beginning of performance step 1 exceeds 15 minutes.** This time will also be used as the starting time for the State/Local notification process.			
***** NOTE ***** **Inform examinee that the Public Address announcement & ERO Notification are NOT required.**			

STEP NO	STEP	ACT	STANDARD
NOTE **Follow-up Cue: Complete EP-MA-114-100-F-01, "State/Local Notification Form" (if required).**			
***** NOTE ***** **The following steps are associated with EP-MA-114-100, "Mid-Atlantic State/Local Event Notifications" Attachment 2.**			
4	Enter the Utility Message Number.	P	**"1"** is entered in Utility Message NO. line in the form's header area.
*5	Check the call status.	P	**"This is a drill"** is checked in Block #1.
*6	Check the affected station.	P	**"B-Peach Bottom"** is checked in Block #2.
7	Check the affected unit(s)	P	Units **"B-TWO"** and **"C-THREE"** are checked in Block #3.
*8	Check the event classification	P	**"C - Site Area Emergency"** classification is checked in Block #4.
*9	Enter the time and date of the declaration.	P	Declaration time (in 24 hour clock nomenclature) and today's date are entered in Block #5. The declaration time should match the time the examiner entered in the note after JPM step 3.
10	Check the applicable change in classification status.	P	**"A-Initial Declaration"** is checked in Block #6.
11	Enter the EAL number declared	P	EAL **HS1** is annotated in Block #7
12	Check the appropriate Brief Non-Technical Description of the Event.	P	"**D- Hazards and Other Conditions Affecting Plant Safety**" is checked in Box #8.
*13	Check the radiological release status.	P	**"A-NO radiological release in-progress"** is checked in Block #9. EP-AA-114-F-02, "BWR Release In Progress Determination Guidance" may be referenced.
14	Enter Meteorological Data (Wind Direction) (Cue: Wind direction is from 80 degrees.)	P	Wind direction of **80** degrees is obtained from either PMS Met data or Control Room panel OOC767 and is entered in Block #10. Minor discrepancy in parameter value is acceptable.
15	Enter Meteorological Data (Wind Speed) (Cue: Wind speed is 15 mph.)	P	Wind speed of **15** mph is obtained from either PMS Met data or Control Room panel OOC767 and is entered in Block #10. Minor discrepancy in parameter value is acceptable.

STEP NO	STEP	ACT	STANDARD
*16	Check the Protective Action Recommendation.	P	"**A - NONE"** is checked in Block #11.
17	Check the appropriate Communicator Information.	P	**"This is a DRILL"** is checked in Block #13.
18	Approve the event notification form.	P	The Emergency Director's name is entered in the form's header area.
***** NOTE ***** **WHEN the examinee completes the Event Notification form,** **THEN record the time using the clock above the Full Core Display. Time = _____** **Determine if the elapsed time since the declaration exceeds 13 minutes.**			
19	As the evaluator, ensure that you have positive control of all exam material provided to the examinee (Task condition/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When plant conditions have been classified and EP-MA-114-100-F-01, "State/Local Event Notification Form" has been completed, the evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2004020501 / PLOR-080C K/A: 295037 A1.05

URO: 3.9 SRO: 3.9

TASK DESCRIPTION: Insert Control Rods Using Individual Scram Test Switches

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. None

C. REFERENCES

1. T-216-2, Rev. 11, “Control Rod Insertion by Manual Scram or Individual Scram Test Switches”

D. TASK STANDARD

1. Satisfactory task completion is indicated when Rod 30-31 has been inserted with the use of its individual scram test switch.

2. Estimated time to complete: 30 minutes, Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to insert rod 30-31 with the use of its individual scram test switch using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Use of this procedure has been directed by the TRIP procedures.

2. “A” & “B” RPS buses energized.

3. CRD System available with a CRD pump running.

4. Instrument air is available.

5. CST level is 32 feet.

6. ARI Logic has been reset.

7. T-213-2, “Scram Solenoid De-energization” procedure was NOT performed.

8. T-214-2, "Isolating and Venting the Scram Air Header" procedure was NOT performed.

9. Fuel damage is NOT suspected.

G. INITIATING CUE

The Control Room Supervisor directs you, the Unit Reactor Operator, to perform T-216-2, “Control Rod Insertion by Manual Scram or Individual Scram Test Switches”, in order to insert Rod 30-31 using its individual scram test switch, beginning at step 4.6.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure T-216-2.	P	A copy of procedure T-216-2 is obtained.
*2	Place the “Scram Reset Switch, 5A-S9” in the "Group 1 & 4", then "Group 2 & 3" positions.	P	Scram Reset Switch is momentarily placed in the "GROUP 1 & 4" position and then momentarily placed in the "GROUP 2 & 3" position at panel 20C005A.
3	Verify the “Control Rod Drive Scram Solenoid Group 1, 2, 3, 4” white lights are lit at Panels 20C015 AND 201C017.	P	Verifies all Control Rod Drive Scram Solenoid Group 1, 2, 3, 4 white lights are lit at panels 20C015 and 20C017.
4	Verify the following alarms are clear at Panel 211: • "A CHANNEL REACTOR AUTO SCRAM", B-1 • "B CHANNEL REACTOR AUTO SCRAM", C-1 • "A CHANNEL REACTOR MANUAL SCRAM", D-1 • "B CHANNEL REACTOR MANUAL SCRAM", E-1	P	The alarm “Reset” pushbutton on the 20C005A panel is depressed. "A and B REACTOR AUTO SCRAM" annunciators and "A and B REACTOR MANUAL SCRAM" annunciators are verified clear on alarm panels 211 B-1, 211 C-1, 211 D-1, and 211 E-1.
5	Verify the blue scram lights are NOT lit on the Full Core Display.	P	All blue scram lights are verified OFF on the Full Core Display at panel 20C0058.
6	WHEN scram air header pressure is between 65-75 psig on PI-2-03-312, THEN verify annunciator "SCRAM VALVE PILOT AIR HEADER PRESS HI-LOW" is clear at Panel 211, D-2.	P	When scram air header pressure has reached 65-75 psig on PI-2-03-312, "SCRAM VALVE PILOT AIR HEADER PRESS HI-LOW" annunciator is verified clear on alarm panel 211 D-2.
*7	Place “Scram Disch Vol Isolation Outboard” switch in "OPEN".	P	The “Scram Disch Vol Isolation Outboard” control switch is momentarily placed in the "OPEN" position at panel 20C005A.
8	Verify the SDV Outboard Vent and Drain Valves are open.	P	SDV Outboard Vent and Drain Valves AO-2-03-035A (035B) (036) red lights are verified ON at panel 20C005A.

STEP NO	STEP	ACT	STANDARD
*9	Place “Scram Disch Vol Isolation Inboard” switch in "OPEN".	P	The “Scram Disch Vol Isolation Inboard” control switch is momentarily placed in the "OPEN" position at panel 20C005A.
10	Verify the SDV Inboard Vent and Drain Valves are open.	P	SDV Inboard Vent and Drain Valves AO-203-032A (032B) (033) red lights are verified ON at panel 20C005A.
NOTE WHEN the above step has been completed, THEN time compress by informing examinee that 25 minutes has elapsed.			
11	Verify the "SCRAM DISCH VOLUME HI WATER LEVEL TRIP” annunciator is clear at Panel 210, C-1.	P	Alarm RESET button on 20C005A panel is depressed. "SCRAM DISCH VOL HI WATER LEVEL TRIP 50 GAL" annunciator is verified clear on alarm panel 210 C-1.
12	Verify charging water pressure is 1410 to 1510 psig on PI-2-03-302. (Cue: *Inform the operator that charging water pressure is 1450 psig.)*	P	Charging water pressure is verified to be 1410-1510 psig on PI-2-03-302 at panel 20C005A.
*13	Place the individual scram test switch for rod 30-31 in the "SCRAM" (down) position at Panel 20C016.	P	The individual test switch for Rod 30-31 is placed in the down "SCRAM" position at panel 20C016.
14	Check blue scram light is lit for control rod 30-31 AND the control rod is fully inserted on the Full Core Display. (Cue: Rod 30-31 rod position is blank, green backlight is lit. A second Operator reports that the blue scram light is lit.)	P	Rod 30-31 green backlight, blue scram light are verified ON and rod position is verified blank on the Full Core Display at panel 20C005B.
15	After 5 seconds, place the individual test switch for rod 30-31 in the up "NORMAL" position.	P	The individual test switch for Rod 30-31 is placed in the up "NORMAL" position at panel 20C016.
16	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.

STEP NO	STEP	ACT	STANDARD
17	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When Rod 30-31 has been inserted using its individual scram test switch, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2008080501 / PLOR-461CA K/A: 295031.EA1.03
RO/SRO: 4.3

TASK DESCRIPTION: Manually Initiate Core Spray System (Alternate Path – Min Flow Valves Fail)

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

   c. Applicable JPM Work Practice Standards, TQ-AA-150-J040 graded satisfactorily.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

RRC 14.1-2, Rev 0 “Core Spray Manual Initiation During a Plant Event”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Core Spray System is manually initiated with four pumps operating with their min flow valves open.

2. Estimated time to complete: 14 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to manually initiate the Core Spray System. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Reactor has scrammed, all rods inserted, all scram actions have been taken.

2. RPV level is -165 inches and lowering slowly.

3. RPV pressure is 500 psig and slowly lowering.

4. Drywell pressure is 2.5 psig and rising.

5. Core Spray has failed to automatically initiate.

6. RHR has failed to automatically initiate.

7. Emergency buses are being powered from off-site power.

G. INITIATING CUE

The Control Room Supervisor directs you to manually initiate both loops of the Core Spray System using Rapid Response Card RRC 14.1-2, “Core Spray Manual Initiation During a Plant Event”, Section A, “Core Spray Injection Using Manual Initiation Push-button”.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of Rapid Response Card RRC 14.1-2.		A copy of Rapid Response Card RRC 14.1-2 is obtained.
*2	Arm and depress the "A" Core Spray Loop Manual Initiation Pushbutton, 14A-S10A.	P	The "A" Core Spray Loop Manual Initiation Pushbutton collar (14A-S10A) is rotated clockwise to the ARMED position, and then the pushbutton is momentarily depressed at panel 20C003-04.
3	Acknowledge the "SYSTEM I CORE SPRAY TEST/ARMED" annunciator.	P	The annunciator "ACKNOWLEDGE" pushbutton is depressed at panel 20C003-04.
*4	Arm and depress the "B" Core Spray Loop Manual Initiation Pushbutton, 14A-S10B.	P	The "B" Core Spray Loop Manual Initiation Pushbutton collar (14A-S10B) is rotated clockwise to the ARMED position, and then the pushbutton is momentarily depressed at panel 20C003-02.
5	Acknowledge the "SYSTEM II CORE SPRAY TEST/ARMED" annunciator.	P	The annunciator "ACKNOWLEDGE" pushbutton is depressed at panel 20C003-02.
****** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**			
6	Verify the "A" and "C" Core Spray Pumps start after 13 seconds.	P	Recognize “A” and “C” Core Spray Pump start.
7	Verify “A” and “C” Core Spray Pump Min Flow valves MO-2-14-005A and MO-2-14-005C open.	P	Recognize MO-2-14-005A failure to open.
*8	Open “A” Core Spray Pump Min Flow Valve MO-2-14-005A using the Control Switch.	P	Verify MO-2-14-005A is open.
9	Verify the "B" and "D" Core Spray Pumps start after 23 seconds.	P	Recognize “B” and “D” Core Spray Pump start.
10	Verify “B” and “D” Core Spray Pump Min Flow Valves MO-2-14-005B and MO-2-14-005D open.	P	Recognize MO-2-14-005B failure to open.
*11	Open “B” Core Spray Pump Min Flow Valve MO-2-14-005B using the Control Switch.	P	Verify MO-2-14-005B is open.

STEP NO	STEP	ACT	STANDARD
12	When RPV pressure is less than 450 psig, verify open MO-2-14-012A and MO-2-14-012B, INBD DISCH valves.	P	Monitors RPV pressure for when pressure lowers below 450 psig.
13	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
14	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the Core Spray System has been manually started and all pumps are running on minimum flow or are injecting into the RPV, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2480580401 / PLOR-400CA K/A: 241000.A4.14
RO/SRO: 4.1

TASK DESCRIPTION: Main Turbine Startup (Alt. Path – Lift Pumps Trip Prior to 100 RPM)

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

   c. Applicable JPM Work Practice Standards, TQ-AA-150-J040 graded satisfactorily.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

1. ARC 205 L-5 Rev 2, “Bearing Lift Pump Lo Press”

2. SO 1B.1.A-2 Rev 61, “Main Turbine Startup and Normal Operations”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Main Turbine is tripped or all stop and control valves are closed when lift pumps E/F and G/H trip prior to reaching 100 rpm.

2. Estimated time to complete: 15 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to roll the Main Turbine and raise Main Turbine Speed to 1800 RPM. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Shift Management has given permission to roll the Main Turbine.

2. The Transmission System Operator has been informed of the expected synchronization of the Main Generator.

3. All Main Turbine Lift Pumps are in service.

4. SO 1B.1.A-2 “Main Turbine Startup and Normal Operations” is complete through step 4.34.4.

5. A slower turbine roll is NOT directed by Shift Management.

G. INITIATING CUE

The Control Room Supervisor directs you to continue startup of the Main Turbine and raise Main Turbine speed to 1800 RPM using SO 1B.1.A-2, “Main Turbine Startup and Normal Operations” beginning at step 4.34.5.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of SO 1B.1.A-2, “Main Turbine Startup and Normal Operations”.	P	A copy of SO 1B.1.A-2, “Main Turbine Startup and Normal Operations” is obtained.
*2	Select the CUSTOM TARGET button on the SPEED CONTROL screen 5534 on Panel 20C008A(B) DEHC HMI.	P	Selects the CUSTOM TARGET button on the SPEED CONTROL screen 5534 on Panel 20C008A(B) DEHC HMI.
*3	Input a speed of 100 rpm.	P	Inputs a speed of 100 rpm and verifies 100 is displayed.
*4	Select ENTER AND verify the following: 1) TARGET is 100 rpm. 2) #2 Turbine Stop Valve begins opening immediately. 3) WHEN #2 Turbine Stop Valve is approximately 90% open, THEN Turbine Stop Valves 1, 3, AND 4 open slowly.	P	Select ENTER AND verify the following: 1) TARGET is 100 rpm. 2) #2 Turbine Stop Valve begins opening immediately. 3) WHEN #2 Turbine Stop Valve is approximately 90% open, THEN Turbine Stop Valves 1, 3, AND 4 open slowly.
*5	Select the CUSTOM RATE button.	P	Selects the CUSTOM RATE button.
*6	Input a rate of 60 rpm/min.	P	Inputs a rate of 60 rpm/min.
*7	Select ENTER AND verify RATE is 60 rpm/min.	P	Selects ENTER.
*8	Select GO AND monitor Main Turbine speed.	P	Selects GO and verifies turbine speed is rising.
*****NOTE***** **The next step begins the alternate path portion of the JPM.**			
9	Recognizes lift pumps E/F and G/H have tripped prior to reaching 100 rpm.	P	Examinee recognizes the following occur: • Lift pumps E/F and G/H green lights are lit and red lights are out prior to reaching 100 rpm. • Alarm 205 L-5 “Bearing Lift Pump Lo Press” in alarm.

STEP NO	STEP	ACT	STANDARD
*10	IF lift pumps C/D OR E/F OR G/H trip prior to reaching 100 rpm, THEN perform one of the following: o Select the ALL VALVES CLOSED button. o Trip the Main Turbine.	P	Examinee performs either of the following actions: o Select the ALL VALVES CLOSED button. o Trip the Main Turbine.
11	Inform the Control Room supervisor that you tripped the Main Turbine due to lift pumps E/F and G/H tripping prior to reaching 100 rpm. (Cue: Acknowledge the report.)	P	Inform the Control Room supervisor that you tripped the Main Turbine due to lift pumps E/F and G/H tripping prior to reaching 100 rpm.
12	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the Main Turbine is tripped due to lift pumps E/F and G/H tripping prior to reaching 100 rpm, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2390030101 / PLOR-0379C K/A: 239001.A4.01
RO/SRO: 4.4

TASK DESCRIPTION: Recover a Single Main Steam Line

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

   c. Applicable JPM Work Practice Standards, TQ-AA-150-J040 graded satisfactorily.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

SO 1A.7.B-2, Rev 11, “Main Steam Line Recovery”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the “A” Main Steam Line inboard and outboard isolation valves are open.

2. Estimated time to complete: 8 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to recover the “A” Main Steam Line using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

a. The “A” Main Steam line has been closed for 2 hours.

b. Reactor power is approximately 55%.

G. INITIATING CUE

The Control Room Supervisor directs you to recover the “A” Main Steam line by performing SO 1A.7.B-2, “Main Steam Line Recovery” Steps 4.1 through 4.7.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of SO 1A.7.B-2, “Main Steam Line Recovery”.	P	A controlled copy of procedure SO 1A.7.B-2, “Main Steam Line Recovery” has been obtained.
2	Verify AO-2-02-80A “A Main Steam Line Inboard Isolation Valve” is closed.	P	AO-2-02-80A is verified closed by monitoring the red light off and the green lit on.
3	Verify AO-2-02-86A “A Main Steam Line Outboard Isolation Valve” is closed.	P	AO-2-02-86A is verified closed by monitoring the red light off and the green lit on.
*4	Open MO-2-02-074 “Main Steam Lines Drain Inboard Valve”.	P	Control Switch for MO-2-02-074 is momentarily taken to the OPEN position.
5	Verify MO-2-02-074 “Main Steam Lines Drain Inboard Valve” is open.	P	Control Switch for MO-2-02-074 is verified open by the red light for MO-2-02-74 is on and the green light is off.
*6	Open MO-2-02-077 “Main Steam Lines Drain Outboard Valve”.	P	Control Switch for MO-2-02-077 is momentarily taken to the OPEN position.
7	Verify MO-2-02-077 “Main Steam Lines Drain Outboard Valve” is open.	P	Control Switch for MO-2-02-077 is verified open by the red light for MO-2-02-77 is on and the green light is off.
*8	Open MO-2-02-079 “Main Steam Lines Drain Orifice Bypass to Main CDSR”.	P	Control Switch for MO-2-02-079 is momentarily taken to the OPEN position.
9	Verify MO-2-02-079 “Main Steam Lines Drain Orifice Bypass to Main CDSR” is open.	P	Control Switch for MO-2-02-079 is verified open by the red light for MO-2-02-79 is on and the green light is off.
*10	Open MO-2-02-078 “Main Steam Lines Drain Downstream Drain Valve”.	P	Control Switch for MO-2-02-078 is momentarily taken to the OPEN position.
11	Verify MO-2-02-078 “Main Steam Lines Drain Downstream Drain Valve” is open.	P	Control Switch for MO-2-02-078 is verified open by the red light for MO-2-02-78 is on and the green light is off.

STEP NO	STEP	ACT	STANDARD
*****CUE***** **When all 4 drain valves are open, inform the examinee that the valves have been open for 20 minutes.**			
For JPM steps 12 through 15, when AO-2-02-80A has been opened, inform the examinee that AO-2-02-80A has now been open for 20 minutes.			
*12	Open AO-2-02-80A “A Main Steam Line Inboard Isolation Valve”.	P	Control switch for AO-2-02-80A is taken to the OPEN position.
13	Verify AO-2-02-80A “A Main Steam Line Inboard Isolation Valve” is opened.	P	AO-2-02-80A is verified open by monitoring the red light on and the green lit off.
*14	Open AO-2-02-86A “A Main Steam Line Outboard Isolation Valve”.	P	Control switch for AO-2-02-86A is taken to the OPEN position.
15	Verify AO-2-02-86A “A Main Steam Line Outboard Isolation Valve” is opened.	P	AO-2-02-86A is verified open by monitoring the red light on and the green lit off.
16	Verify the associated RPS relays, from Table 1, for AO-2-02-080A and AO-2-02-086A are energized. (NOTE: Relays may be verified in any order.) o 5A-K3A (20C015) o 5A-K3B (20C017)	P	Relays 5A-K3A and 5A-K3B are verified energized by the relay paddles being pulled in.
*17	Close MO-2-02-074 “Main Steam Lines Drain Inboard Valve”.	P	Control Switch for MO-2-02-074 is momentarily taken to the CLOSE position.
18	Verify MO-2-02-074 “Main Steam Lines Drain Inboard Valve” is closed.	P	Control Switch for MO-2-02-074 is verified closed by the red light for MO-2-02-74 is off and the green light is on.
*19	Close MO-2-02-077 “Main Steam Lines Drain Outboard Valve”.	P	Control Switch for MO-2-02-077 is momentarily taken to the CLOSE position.
20	Verify MO-2-02-077 “Main Steam Lines Drain Outboard Valve” is closed.	P	Control Switch for MO-2-02-077 is verified closed by the red light for MO-2-02-74 is off and the green light is on.
*21	Close MO-2-02-079 “Main Steam Lines Drain Orifice Bypass to Main CDSR”.	P	Control Switch for MO-2-02-079 is momentarily taken to the CLOSE position.

STEP NO	STEP	ACT	STANDARD
22	Verify MO-2-02-079 “Main Steam Lines Drain Orifice Bypass to Main CDSR” is closed.	P	Control Switch for MO-2-02-079 is verified closed by the red light for MO-2-02-79 is off and the green light is on.
*23	Close MO-2-02-078 “Main Steam Lines Drain Downstream Drain Valve”.	P	Control Switch for MO-2-02-078 is momentarily taken to the CLOSE position.
24	Verify MO-2-02-078 “Main Steam Lines Drain Downstream Drain Valve” is closed.	P	Control Switch for MO-2-02-078 is verified closed by the red light for MO-2-02-78 is off and the green light is on.
25	Report to Control Room Supervisor that the “A” Main Steam Line is reopened. (Cue: Control Room Supervisor acknowledges report.)	P	Task completed.
26	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the “A” Main Steam Line has been recovered, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2004420401 / PLOR-462C K/A: 295003 AA1.01

URO: 4.0 SRO 4.0

TASK DESCRIPTION: Align the Electrical System for the SBO Line

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. SE-11.1, Operating Station Blackout Line During a LOOP Event

C. REFERENCES

1. SE-11.1, Operating Station Blackout Line During a LOOP Event

D. TASK STANDARD

1. Satisfactory task completion is indicated when the E-12 and E-33 buses are energized via 2 SUE and the SBO Line in accordance with SE-11.1 Section 3.0.

2. Estimated time to complete: 10 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform the necessary steps to energize the E-12 and E-33 buses via 2 SUE and the SBO Line. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. A Station Blackout has occurred and SE-11, “Loss of Off-Site Power” has been entered.

2. The Control Room Supervisor has decided to energize the 2 SUE bus via the SBO Line.

4. SE-11.1, “Operating Station Blackout Line During a LOOP Event,” is complete through Step 3.2.

5. 00S079, “SBO 34.5KV Load Break Switch” is OPEN.

6. Conowingo has confirmed that they are configured for Peach Bottom Station blackout and the SBO Line is energized.

G. INITIATING CUE

The Control Room Supervisor directs you, the Plant Reactor Operator, to perform Steps 3.3 through 3.7 of SE-11.1 to energize the E-12 and E-33 buses.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain SE-11.1, Operating the Station Blackout Line During a LOOP Event. (Cue: When examinee describes how they would obtain the procedure, a copy may then be provided by the examiner.)	P	Obtains SE-11.1.
*2	Verify open and "green flag" the following breakers at panel 00C024: • SBO TO 2SUB BUS BKR 252-0316 • SU-25 BKR 452-02 • SBO XFMR BKR 1005 • 2SU-E BKR 252-0310 • 2SU-A BKR 252-0308 • 2SU-B BKR 252-0311 • BS4 XFMR BKR 252-0314 • 00C1028 BKR 252-0317 • B2 BKR 252-0313 (Cue: Acknowledge control switch operation. For each breaker listed, green light is ON, red light is OFF, and green flag is displayed.)	P	Operates breaker control switches as necessary to obtain open and "green flag" indication for the following breakers: • SBO TO 2SUB BUS BKR 252-0316 • SU-25 BKR 452-02 • SBO XFMR BKR 1005 • 2SU-E BKR 252-0310 • 2SU-A BKR 252-0308 • 2SU-B BKR 252-0311 • BS4 XFMR BKR 252-0314 • 00C1028 BKR 252-0317 • B2 BKR 252-0313
Evaluator: If necessary, repeat cue that Conowingo Station is configured for Peach Bottom Station blackout and the SBO line is energized.			
3	Verify that 00S079, "SBO 34.5KV Load Break Switch" is open. (Cue: 00S079 is open per cue sheet.)	P	Verifies 00S079 is open.
4	Inform Transmission System Operator that Peach Bottom will be loading the SBO Line. (Cue: Acknowledge communication.)	P	Informs TSO that Peach Bottom will be loading the SBO Line.

STEP NO	STEP	ACT	STANDARD
*5	Energize Transformer 00X019 by closing SBO XFMR BKR 1005 at Panel 00C024. (Cue: Acknowledge control switch operation. Breaker green light is OFF and red light is ON.)	P	Closes SBO XFMR BKR 1005 and verifies light indication.
*6	Close SBO TO 2 SUB BUS BKR 252-0316 AND observe approximately 13kV to 16kV on 2SU-B BUS 00A003C voltmeter at Panel 00C024. (Cue: Acknowledge control switch operation. Breaker 252-0316 green light is OFF and red light is ON. Voltmeter indicates approximately 13 kV.)	P	Closes SBO TO 2 SUB BKR 252-0316. Verifies light indication and voltmeter indication.
*7	Place the 2SU-B BKR SYNC switch to "ON" at Panel 00C024. (Cue: IF the "Synch Key" is placed in the 2SU-B breaker and turned clockwise, then the 2SU-B Breaker synch switch is "ON").	P	Places 2SU-B BKR SYNC switch to “ON”
*8	Close 2SU-B BKR 252-0311 AND observe approximately 13kV to 16kV on 2SU BUS 00A003A voltmeter at Panel 00C024. (Cue: Acknowledge control switch operation. Breaker 252-0311 green light is OFF and red light is ON. Voltmeter indicates approximately 13 kV.)	P	Closes 2SU-B BKR 252-0311. Verifies light indication and voltmeter indication.
*9	Place the 2SU-B BKR SYNC switch to "OFF" at Panel 00C024. (Cue: If the “Sync Key” is turned counter-clockwise, then the 2SU-B Breaker Sync Switch is “OFF”).	P	Places 2SU-B BKR SYNC switch to “OFF”

STEP NO	STEP	ACT	STANDARD
10	Verify open AND "green flag" the control switches for the following 4KV feeder breakers at Panel 00C026A(B,C,D): • E212 Bkr • E213 Bkr • E312 Bkr • E313 Bkr • E222 Bkr • E223 Bkr • E322 Bkr • E323 Bkr • E232 Bkr • E233 Bkr • E332 Bkr • E333 Bkr • E242 Bkr • E243 Bkr • E342 Bkr • E343 Bkr (Cue: Acknowledge control switch operation. For each breaker listed, green light is ON, red light is OFF, and green flag is displayed.)	P	Operates breaker control switches as necessary to obtain open and “green flag” indication for the following breakers: • E212 Bkr • E213 Bkr • E312 Bkr • E313 Bkr • E222 Bkr • E223 Bkr • E322 Bkr • E323 Bkr • E232 Bkr • E233 Bkr • E332 Bkr • E333 Bkr • E242 Bkr • E243 Bkr • E342 Bkr • E343 Bkr
*11	Energize the 2 SUE bus by closing 2SU-E BKR 252-0310. (Cue: Acknowledge control switch operation. Breaker 252-0310 green light is OFF and red light is ON.)	P	Closes 2SU-E BKR 252-0310.
12	Place SBO Transformer 00X019 LTC MODE switch in "MANUAL". (Cue: Acknowledge control switch operation. 00X019 LTC MODE switch is in the manual position.)	P	Places SBO Transformer 00X019 LTC MODE switch in "MANUAL".
*13	Place SBO LTC switch in "RAISE" AND raise TAP CHANGER POSITION to Tap 25. (Cue: Inform the operator that the Tap Changer is on Tap 25).	P	Places SBO LTC switch in "RAISE" until TAP CHANGER POSITION is at Tap 25.
14	Inform the Transmission System Operator that Peach Bottom will be loading the SBO Line. (Cue: Communication acknowledged.)	P	Informs TSO that Peach Bottom will be loading the SBO Line.

STEP NO	STEP	ACT	STANDARD
*15	Place the E-212 bus feeder breaker sync switch to “ON” at Panel 00C026A. (Cue: IF the "Synch Key" for the 4KV breaker is placed in the E-212 breaker and turned clockwise, then the E-212 Breaker synch switch is "ON").	P	Places the E-212 bus feeder breaker sync switch to “ON”
*16	Turn the E-212 bus feeder breaker control switch to “CLOSE” and verify the feeder breaker closes. (Cue: Acknowledge control switch operation. Breaker green light is OFF and red light is ON.)	P	Turns the E-212 bus feeder breaker control switch to “CLOSE” and verifies the feeder breaker closes.
*17	Place the E-212 bus feeder breaker sync switch to “OFF”. (Cue: If the “Sync Key” is turned counter-clockwise, then the E-212 Breaker Sync Switch is “OFF”)	P	Places the E-212 bus feeder breaker sync switch to “OFF”.
18	Verify the E124 load center re-energizes. (Cue: E124 breaker green light is OFF, red light is ON, and ammeter indicates on scale.)	P	Verifies the E124 load center is energized.
*19	Place the E-233 bus feeder breaker sync switch to “ON” at Panel 00C026A. (Cue: IF the "Synch Key" for the 4KV breaker is placed in the E-233 breaker and turned clockwise, then the E-233 Breaker synch switch is "ON").	P	Places the E-233 bus feeder breaker sync switch to “ON”
*20	Turn the E-233 bus feeder breaker control switch to “CLOSE” and verify the feeder breaker closes. (Cue: Acknowledge control switch operation. Breaker green light is OFF and red light is ON.)	P	Turns the E-233 bus feeder breaker control switch to “CLOSE” and verifies the feeder breaker closes.
*21	Place the E-233 bus feeder breaker sync switch to “OFF”. (Cue: If the “Sync Key” is turned counter-clockwise, then the E-233 Breaker Sync Switch is “OFF”).	P	Places the E-233 bus feeder breaker sync switch to “OFF”.

STEP NO	STEP	ACT	STANDARD
22	Verify the E334 load center re-energizes. (Cue: E334 breaker green light is OFF, red light is ON, and ammeter indicates on scale.)	P	Verifies the E334 load center is energized.
23	Inform the Control Room Supervisor that the SE-11.1 Steps 3.2 through 3.7 have been completed and the E-12 and E-33 buses are energized. (Cue: Control Room Supervisor acknowledges report.)	P	Informs Control Room Supervisor of task completion.
24	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the E-12 and E-33 buses have been energized via 2 SUE and the SBO Line, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2010010101 / PLOR-463CA K/A: 201006 A4.07

URO: 3.2 SRO: 3.2

TASK DESCRIPTION: INITIALIZE THE RWM

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

Ensure that all RWM alarm messages are cleared on the RWM screen prior to JPM starting

C. REFERENCES

1. SO 62A.1.A-2, Rev 12, "Rod Worth Minimizer System Initialization"

2. AO 59A.2-2, Rev 13, "Adding and Removing Substitute Control Rod Positions and Declaring Control Rods RWM Inoperable and Operable"

D. TASK STANDARD

1. Satisfactory task completion is indicated when:

   a. The Rod Worth Minimizer has been initialized and a system diagnostic completed in accordance with SO 62A.1.A-2

   b. Substitute position has been entered into the RWM for control rod 02-23 in accordance with AO 59A.2-2.

   b. Allotted time to complete: 15 minutes (A.5) Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to initialize the RWM. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is at power.

2. There are no substitute control rod positions or inoperable control rod position indications on Unit 2.

3. The RWM is energized.

G. INITIATING CUE(S)

The CRS directs you, the Unit 2 Reactor Operator, to initialize the RWM, using SO 62A.1.A-2.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure SO 62A.1.A-2, "Rod Worth Minimizer System Initialization".	P	A copy of procedure SO 62A.1.A-2 is obtained.
2	Notify the RO the next step will cause Alarm Panel 211 Window F-5, "RWM Rod Block" to ALARM. (Cue: Acknowledge report)	P	Notifies the CRS the next step will cause Alarm Panel 211 Window F-5, "RWM Rod Block" to alarm.
*3	Press AND momentarily Hold the "SYSTEM INITIALIZE" pushbutton on the RWM panel below the display.	P	Presses and momentarily holds the "SYSTEM INITIALIZE" pushbutton on the RWM panel below the display.
******Alternate Path portion of JPM begins********			
4	Recognize and report “RWM Rod Block” (expected) and “Rod Drift” (unexpected) annunciators.	P	Recognizes and reports unexpected “Rod Drift” annunciator. May consult ARC.
Cue Inform the operator that ON-121, Drifting Control Rod, has been performed and control rod 02-23 is NOT drifting.			
5	IF the red "RWM INOP" indicator below the display does NOT clear within two minutes, THEN Notify Shift Management AND the RWM System Manager.	P	IF the red "RWM INOP" indicator below the display does NOT clear within two minutes, then notifies Shift Management AND the RWM System Manager. Verifies “RWM INOP” light goes out.
6	Press “FULLCORE”. (Cue: “FULLCORE” is pressed, and the Fullcore screen is displayed.)	P	Presses “FULLCORE”.
7	IF any position indicators indicate "-99", THEN Re-Select rods with "-99" indication on RMCS OR perform a Full Core Scan.	P	Recognizes Control Rod 02-23 position is indicating “-99”.

STEP NO	STEP	ACT	STANDARD
8	Re-select Rod 02-23 OR Perform a Full Core Scan	P	Re-selects Rod 02-23 or Performs a Full Core Scan
9	IF any position indicators indicate "-99", THEN enter required substitute control rod positions in accordance with AO 59A.2-2, "Adding And Removing Substitute Control Rod Positions And Declaring Control Rods RWM Inoperable Or Operable".	P	Determines that a substitute position is required in accordance with AO 59A.2-2.
10	Obtain a copy of AO 59A.2-2.	P	Obtains copy of AO 59A.2-2.
*****Evaluator: Provide trainee with a marked-up copy of AO 59A.2-2. Inform the trainee that prerequisites and precautions have been verified and a separate operator has completed steps 4.1.1-4.1.6.*******			
******Note: the following steps are in AO 59A.2-2********			
*11	Navigate to the RWM SUB/INOP CR screen from the RWM Functions Plant Computer Interface (subcr)	P	"SUB/INOP CR" is pressed.
*12	Select the quadrant containing the control rod requiring the substitute position.	P	Selects lower left quadrant.
13	Record the "#Sub Rods" on Attachment 1. (Cue: Inform the trainee that a separate operator will complete Attachment 1 for rod 02-23 at position 48 and to continue with the procedure.)	P	Acknowledges that a separate operator will complete Attachment 1 and to continue with the procedure.
*14	Press the grey box below the control rod requiring the substitute position.	P	Presses grey box below control rod 02-23.
*15	Press the Up OR Down arrow to move the indicated position to the Actual Control Rod Position on Attachment 1.	P	Presses Up/Down arrows until position "48" is displayed.
*16	Press "SUB".	P	Presses "SUB".

STEP NO	STEP	ACT	STANDARD
17	Verify the "#Sub Rods" increases by one.	P	Verifies "# Sub Rods" is "1".
18	Notify RO the next step may cause Alarm Panel 211 Window F-5, "RWM ROD BLOCK" to ALARM. (Cue: Acknowledge report)	P	Notifies RO that the next step may cause Alarm Panel 211 Window F-5, "RWM ROD BLOCK" to alarm.
*19	Select "SCAN/LATCH"	P	Selects "SCAN/LATCH"
20	After 30 seconds, Navigate to RWM Fullcore display (FULLCORE)	P	Navigates to the RWM FULLCORE display.
21	Verify the substitute position by performing the following AND signoff on Attachment 1. On the RWM fullcore display, verify the rod has a white background. (Cue: Inform the trainee that a separate operator will complete Attachment 1 and to continue with the procedure.)	P	Verifies control rod 02-23 has a white background. Acknowledges that a separate operator will complete Attachment 1 and to continue with the procedure.
22	On the RWM, verify the substituted position matches the actual position.	P	Verifies control rod 02-23 position indicates "48"
23	On a PMS computer, verify the substituted position matches the actual position.	P	On PMS computer, verifies control rod 02-23 position indicates "48"
24	Notify the RO the next step may cause Alarm Panel 211 F-5, "RWM ROD BLOCK" to ALARM (Cue: acknowledge report).	P	Notifies RO that the next step may cause Alarm 211 F-5, "RWM ROD BLOCK"

STEP NO	STEP	ACT	STANDARD
*****Evaluator Note: The Simulator does not have the capability to print the following log *****			
25	Request a Control Rod Position Log from the NSS/3D-Monicore Plant Computer Interface OR Summaries & Logs selection AND verify the substituted valve (3dm_menu) (Cue: Evaluator inform trainee that Step 4.1.17.5 is complete and the log shows control rod 02-23 at position "48").	P	Acknowledges step 4.1.17.5 is complete and shows control rod 02-23 at position 48.
26	Signoff step 4.1.17 on Attachment 1. (Cue: Inform the trainee that a separate operator will complete Attachment 1 and to continue with the procedure.)	P	Acknowledges that a separate operator will complete Attachment 1 and to continue with the procedure.
27	Record "Sub Position ##" in the "Comments" column of the NF-AB-720-F-1 approved sequence OR special maneuver sheet, as appropriate, for the current step AND subsequent steps in BOTH the insert and withdraw directions for which the substitute position applies. (Cue: Inform the trainee that AO 59A.2-2 Step 4.1.18 was completed by another RO.)	P	Acknowledges that step 4.1.18 is complete.
******Note: The remainder of the JPM steps are in SO 62A.1.A-2**********			
28	PRESS "RWM MAIN".	P	Presses "RWM MAIN".

STEP NO	STEP	ACT	STANDARD
29	Verify the RWM has latched to a rod group appropriate for current plant conditions.	P	Verifies the RWM has latched to a rod group appropriate for current plant conditions. Verifies the RWM has latched to the current group.
30	NOTIFY the RO the next step will cause Alarm Panel 211 Window F-5, "RWM Rod Block" to ALARM. (Cue: Acknowledge the report)	P	Notifies the CRS the next step will cause Alarm Panel 211 Window F-5, "RWM Rod Block" to ALARM.
*31	PRESS AND momentarily HOLD "System Diagnostic" pushbutton AND VERIFY pushbutton lights go ON AND WHEN the pushbutton is released, THEN pushbutton lights remain ON.	P	Presses and momentarily holds "System Diagnostic" pushbutton and verifies pushbutton lights go on and when the push button is released, then pushbutton lights remain ON.
32	Verify the following: • The "Insert Block" AND "Withdraw Block" indicator lights under RWM console go ON AND OFF. • The RWM insert block/permissive indication cycles between the "Insert Block" AND "Insert Permissive". • The RWM withdraw block/permissive indication cycles between the "Withdraw Block" AND "Withdraw Permissive".	P	Verifies the following: • The "Insert Block" and "Withdraw Block" indicator lights under RWM console go on and off. • The RWM insert block/permissive indication cycles between the "Insert Block" and "Insert Permissive". • The RWM withdraw block/permissive indication cycles between the "Withdraw Block" and "Withdraw Permissive".
*33	PRESS AND momentarily HOLD "System Diagnostic" pushbutton AND WHEN the pushbutton is released, THEN VERIFY the pushbutton lights go OFF.	P	Presses and momentarily holds "System Diagnostic" pushbutton and when the pushbutton is released, then verifies the pushbutton lights go OFF.
34	Inform CRS of task completion. (Cue: CRS acknowledges report.)	P	Task completion reported.

STEP NO	STEP	ACT	STANDARD
35	As an evaluator, ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the RWM has been successfully initialized, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2002400401 / PLOR-464CA K/A: 300000 A2.03

URO: 3.9 SRO 3.8

TASK DESCRIPTION: ON-119 Restart a Tripped IA Compressor (Alt Path – Compressor Fails to Start)

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

1. ON-119, Rev 34, Loss of Instrument Air

C. REFERENCES

1. ON-119, Rev 34, Loss of Instrument Air

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Backup Instrument Air Compressor is in service and Instrument Air Header pressure has been restored.

2. Estimated time to complete: 10 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform the necessary steps to restart the "A" Instrument Air Compressor. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. The "A" Instrument Air Compressor tripped and "A" Instrument Air Header Pressure has lowered to approximately 90 psig.

2. ON-119, Loss of Instrument Air, has been entered.

3. The "A" Instrument Air Compressor control switch was placed in "STOP" at Panel 20C012 in accordance with ARC-216 B-1, "A Air Comp Trouble."

4. An Equipment Operator was dispatched to the "A" Instrument Air Compressor.
   - He reported that Maintenance workers in the area bumped the Receiver High Pressure switch. Workers are now clear of the area.
   - Receiver pressure is normal
   - Compressor "Reset-Start" button has been pressed
   - Local "Load/Unload" selector switch is in "Load"
   - Air Compressor is ready for start from the Main Control Room

G. INITIATING CUE

The Control Room Supervisor directs you, the Plant Reactor Operator, to restart the tripped air compressor in accordance with ON-119 Step 2.6.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain ON-119, Loss of Instrument Air. (Cue: When examinee describes how they would obtain the procedure, a copy may then be provided by the examiner.)	P	Obtains ON-119.
2	Restart tripped air compressor, if possible.	P	Places 2AK001 control switch to "RUN" at Panel 20C012.
**** Alternate Path begins *****			
3	Recognize trip of the "A" Instrument Air Compressor.	P	Recognizes trip of the "A" Instrument Air Compressor.
Evaluator: If asked to investigate cause as Equipment Operator, report that a High Oil Temperature condition is now locked in and cannot be reset.			
4	MAKE a PA announcement AND CONTACT Radiation Protection to verify all station work requiring an airline respirator is discontinued. (Cue: Acknowledge communication.)	P	Makes a PA announcement and contacts Radiation Protection to verify all station work requiring an airline respirator is discontinued.
*5	PLACE Backup Instrument Air compressor 2DK001 in RUN on Panel 20C012.	P	Places Backup Instrument Air Compressor 2DK001 control switch in RUN.
*6	OPEN AO-80250D on Panel 20C012. *(Note: Manual valves in steps 7 and 8 will automatically operate 30 seconds after this control switch is taken to OPEN)*		Places AO-80250 control switch to OPEN.
*7	Direct an Equipment Operator to CLOSE HV-2-36-45989, B Air Cpsr Xtie Block Valve for A + C Air Compressors. (Cue: Acknowledge direction and report the valve is open.)	P	Directs an Equipment Operator to CLOSE HV-2-36-45989, B Air Cpsr Xtie Block Valve for A + C Air Compressors.

STEP NO	STEP	ACT	STANDARD
*8	Direct an Equipment Operator to OPEN HV-2-36-45988, A Air Cpsr Xtie Block Valve for B + C Air Compressors. (Cue: Acknowledge direction and report the valve is open.)	P	Directs an Equipment Operator to OPEN HV-2-36-45988, A Air Cpsr Xtie Block Valve for B + C Air Compressors.
9	Recognize that “A” Instrument Air Header is rising.	P	Recognizes that “A” Instrument Air Header is rising.
10	Inform the Control Room Supervisor that the Backup Instrument Air Compressor was placed in service and that “A” Instrument Air Header pressure has been restored to normal. (Cue: Control Room Supervisor acknowledges report.)	P	Informs the Control Room Supervisor that the Backup Instrument Air Compressor was placed in service and that “A” Instrument Air Header pressure has been restored to normal.
11	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When the Backup Air Compressor is in service and the “A” Instrument Air Header pressure is rising, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2330050401/ PLOR-411CA K/A: 233000 A4.09

RO: 3.1 SRO: 3.1

TASK DESCRIPTION: Take Actions for "C" Fuel Pool Service Water Booster Pump Overcurrent

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

1. SO 19.1.A-2 Rev. 24, “Fuel Pool Cooling System Startup and Normal Operations”

D. TASK STANDARD

1. Satisfactory completion of this task is indicated when the 2C Fuel Pool Service Water Booster Pump has been started and then manually tripped due to an overload condition.

2. Estimated time to complete: 6 minutes. (Not time-critical)

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to perform a swap of Fuel Pool Service Water Booster Pumps using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 is 100% power.
2. 2A and 2B Fuel Pool Service Water Booster Pumps are in service.
3. An EO is on station at the Fuel Pool Service Water Booster Pumps.
4. SO 19.1.A-2, “Fuel Pool Cooling System Startup and Normal Operations”, Section 4.2 is complete up to and including step 4.2.5 for swapping Fuel Pool Service Water Booster Pumps.

5. The EO has requested a start of the 2C Fuel Pool Service Water Booster Pump per step 4.2.6.

G. INITIATING CUE

You are directed by the Control Room Supervisor to place the 2C Fuel Pool Service Water Booster Pump in service, and to remove the 2B Fuel Pool Service Water Booster Pump from service, starting at step 4.2.6 of SO 19.1.A-2, “Fuel Pool Cooling System Startup And Normal Operations”.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of SO 19.1.A-2.	P	Obtains a copy of SO 19.1.A-2.
*2	Start 2A(B)(C)P145, "Fuel Pool Serv Wtr Booster Pump(s) A(B)(C)" at Panel 20C012.	P	Starts 2CP145 at Panel 20C012 by placing control switch to START, then spring return to Normal-After-Start. Verifies red light ON and green light OFF.
*3	IF a running FPSW Booster pump is required to be shutdown, THEN stop the required pump, 2A(B)(C)P145.	P	Stops the required pump, 2BP145, by placing control switch to STOP, then spring return to Normal-After-Stop. Verifies red light OFF and green light ON.
NOTE: **The Alternate Path begins in the next step when the 2C Fuel Pool Serv Wtr Booster Pump has an overcurrent condition but does not trip.**			
4	Respond to annunciator 216 E-5, "C Fuel Pool Serv Water Booster Pump Overcurrent".	P	Responds to annunciator 216 E-5, "C Fuel Pool Serv Water Booster Pump Overcurrent".
*5	Verify Automatic Action. (Cue: If directed to investigate trip of the 2C Fuel Pool Booster Pump, acknowledge the direction. Acknowledge all other communications.)	P	Recognizes failure of Automatic Action to occur and manually trips 2C Fuel Pool Serv Wtr Booster Pump by placing control switch to STOP, then spring return to Normal-After-Stop. Verifies red light OFF and green light ON. Notifies CRS. May direct EO to investigate.
6	May restart 2B Fuel Pool Serv Wtr Booster Pump.	P	Restarts 2B Fuel Pool Serv Wtr Booster Pump by placing control switch to START, then spring return to Normal-After-Start. Verifies red light ON and green light OFF

STEP NO	STEP	ACT	STANDARD
7	Report the 2C Fuel Pool Serv Wtr Booster Pump was manually tripped due to an overload condition (and the 2B Pump has been restarted) to the CRS. (Cue: Acknowledge the report.)	P	Reports the 2C Pump was manually tripped due to an overload condition (and the 2B Pump has been restarted) to the CRS.
8	As an evaluator, ensure that you have positive control of all exam material provided to examinees (Task Conditions/ Prerequisites AND procedures.	P	Positive Control Maintained.

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the 2C Fuel Pool Service Water Booster Pump has been manually tripped due to an overload condition, then the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2005610599 / PLOR-055P K/A: 295031EA1.10

URO: 3.6 SRO: 3.6

TASK DESCRIPTION: Maximize CRD Flow to Reactor Vessel – Unit 2

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

Procedure T-246-2, Rev. 8, “Maximizing CRD Flow to the Reactor Vessel”

D. TASK STANDARD

H. Satisfactory task completion is indicated when the Unit 2 CRD System is lined up to deliver maximum flow to the reactor vessel with:

H. Both CRD pumps are running.

b. The CRD suction filter is bypassed.

c. Both CRD drive water filters are in service.

2. Estimated time to complete: 24 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to maximize CRD flow to the Reactor Vessel using T-246, “Maximizing CRD Flow to the Reactor Vessel”. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

H. T-111, “Level Restoration” directs that CRD flow to the Reactor vessel be maximized.

2. Unit 2 has scrammed.

3. Scram is NOT reset.

4. The 2A CRD pump is operating.

5. The 2A Drive Water Filter is in service.

6. All prerequisites in Section 2.0 of T-246-2, “Maximizing CRD Flow to the Reactor Vessel” are met.

G. INITIATING CUE

The Control Room Supervisor directs you, the Equipment Operator, to perform steps 4.3 through 4.7 of T-246-2, “Maximizing CRD Flow to the Reactor Vessel” on Unit 2.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure T-246-2.	S/P	A copy of procedure T-246-2 is obtained.
*2	Open HV-2-3-129, CRDHS Bypass Valve for Pump Suction Filter 20F101. (Cue: Valve handwheel is turned [COUNTERCLOCKWISE] until stem length above valve yoke rises 4 inches then will not turn.)	S	HV-2-3-129 handwheel is turned COUNTERCLOCKWISE until resistance of valve backseat is felt.
*3	Report to the Main Control Room that Step 4.3 of T-246-2 is complete. Request the Main Control Room start "2B" CRD pump. (Cue: MCR acknowledges report, CRD pump start announcement is heard over PA system, noise of motor start is heard from "2B" CRD pump.)	S	Step 4.3 of T-246-2 is complete reported to Main Control Room and request to start "2B" CRD pump using hand held radio or GAI-TRONICS page system.
***** NOTE ***** **Direct examinee to complete Steps 4.5 through 4.7.**			
*4	Slowly open HV-2-3-36B, Inner Disch Block Vv from CRD Drive Water Pump 2BP039, after Control Room starts the "2B" CRD pump. (Cue: Valve handwheel turned [COUNTERCLOCKWISE] until flow noise can be heard as valve is opened.)	S	HV-2-3-36B handwheel is slowly turned COUNTERCLOCKWISE until resistance of valve backseat is felt.
*5	Throttle open HV-2-3-170, Inlet Valve to Drive Water Filters per RO directions. (Cue: Valve handwheel turned [COUNTERCLOCKWISE] stop TRAINEE.)	S	HV-2-3-170 handwheel is turned COUNTERCLOCKWISE until RO has TRAINEE stop.
6	Verify HV-2-3-45B, Drain Valve for Drive Water Filter 2BF013, is closed. (Cue: [CLOCKWISE] Valve handwheel does not move, stem length above valve yoke does not change.)	S	HV-2-3-45B handwheel movement is attempted in the CLOCKWISE direction.

STEP NO	STEP	ACT	STANDARD
7	Open HV-2-3-44B, Vent Valve for the Drive Water Filter 2BF013. (Cue: Valve handwheel turned [COUNTERCLOCKWISE] until stem length above valve yoke rises 2 inches then will not turn.)	S	HV-2-3-44B handwheel is turned COUNTERCLOCKWISE until resistance of valve backseat is felt.
8	Slowly crack open HV-2-3-42B, CRDHS Inlet Block Valve to Drive Water Filter 2BF013. (Cue: Valve handwheel turned [COUNTERCLOCKWISE], stem length above valve yoke rises, flow noise is heard, steady stream of water is seen in flow glass FG-8047B downstream of HV-2-3-44B.)	S	HV-2-3-42B handwheel is slowly turned COUNTERCLOCKWISE until flow is heard or felt.
9	Close HV-2-3-44B, Vent Valve for the Drive Water Filter 2BF013. (Cue: Valve handwheel turned [CLOCKWISE], stem length above valve yoke lowers, flow noise stops, water stream in flow glass stops, then handwheel will not turn further.)	S	When a steady stream of water is seen in FG-9047B, HV-2-3-44B handwheel is turned CLOCKWISE until resistance of valve seat is felt.
*10	Fully open HV-2-3-42B, CRDHS Inlet Block Valve to Drive Water Filter 2BF013. (Cue: Valve handwheel turned [COUNTERCLOCKWISE] until stem length above valve yoke rises 4 inches then will not turn.)	S	HV-2-3-42B handwheel is turned COUNTERCLOCKWISE until resistance of valve backseat is felt.
*11	Slowly open HV-2-3-43B, CRDHS Outlet Block Valve from Drive Water Filter 2BF013. (Cue: Valve handwheel is turned [COUNTERCLOCKWISE] until stem length above valve yoke rises 4 inches then will not turn, flow noise can be heard as valve is opened.)	S	HV-2-3-43B handwheel is slowly turned COUNTERCLOCKWISE until resistance of valve backseat is felt.

STEP NO	STEP	ACT	STANDARD
12	Inform Control Room of task completion. (Cue: Control Room acknowledges report.)	S	Task completion reported using hand held radio or GAI-TRONICS page system.
13	As an evaluator ensure you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When CRD flow has been maximized to the Reactor vessel with both CRD pumps running, the CRD suction filter bypassed, and both drive water filter in service, the Control Room Supervisor should be informed; the evaluator may then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2390110401 / PLOR-130P K/A: 239001 A2.11

RO: 4.3 SRO: 4.1

TASK DESCRIPTION: Closing a Stuck Open MSIV – Unit 3

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. “Control Room” JPMs are designed to be performed in the simulator. If a “Control Room” JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing “In-Plant” JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

Insulated Fuse Pullers

C. REFERENCES

AO 1A.2-3, Rev. 12, “Closing a Stuck Open Inboard or Outboard Main Steam Isolation Valve”

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Unit 3 Outboard MSIV AC AND DC solenoid valve control power fuses are removed.

2. Estimated time to complete: 15 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to close the stuck open outboard MSIVs using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 3 has just been manually scrammed (Unit 3 Mode Switch in “Shutdown”).

2. RPV level is –175 inches (Group I isolation signal is present).

3. All Inboard and Outboard MSIVs failed to isolate.

4. Radiological conditions do NOT allow entry into the Outboard MSIV Room.

G. INITIATING CUE

The Control Room Supervisor directs you, the Equipment Operator, to close the Unit 3 Outboard MSIVs starting with Section 4.1.3 of AO 1A.2-3, “Closing a Stuck Open Inboard or Outboard MSIV”.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure AO 1A.2-3.	P	A copy of procedure AO 1A.2-3 is obtained.
**** NOTE **** Examinee should utilize Section 4.1 of AO 1A.2-3.			
2	Obtain Fuse Pullers (Cue: Fuse pullers are obtained)	P	Examinee locates fuse pullers.
3	Don electrical safety gear. (Cue: Safety gear has been donned.)	P	Removes all metal from body. Puts on Class 00 gloves, safety glasses/goggles, and safety shoes. (Hard Hats are not required to be worn in the Cable Spread Room and insulated tools can be used instead of wearing rubber gloves).
4	Open panel 30C042 front panel doors. (Cue: Panel 30C042 doors are open.)	P	Door handle turned, doors pulled outward to gain access to the outboard MSIV AC and DC solenoid valve fuses at the front of panel 30C042 in the Cable Spreading Room.
*5	Pull the outboard MSIV AC solenoid valve fuse 16A-F12B. (Cue: Fuse is removed.)	S	Fuse 16A-F12B is identified as the fourth fuse from the top of terminal strip BB located inside the left/rear of Panel 30C042. Fuse puller is attached to outboard MSIV AC solenoid valve fuse 16-F12B fuse is pulled outward until fuse is free of fuse holder.
6	Direct the Unit Reactor Operator to monitor outboard MSIV position indication. (Cue: Outboard MSIVs are open continue with 4.1.5.1 of AO 1A.2-3 CLOSING A STUCK OPEN INBOARD OR OUTBOARD MAIN STEAM ISOLATION VALVE)	S	Unit Reactor Operator is contacted to monitor outboard MSIV position indication.
*7	Pull the outboard MSIV DC solenoid valve for 16A-F11B. (Cue: Fuse is removed.)	S	Fuse 16A-F11B is identified as the eighth fuse from the top of terminal strip BB located inside the left/rear of Panel 30C042. Fuse puller is attached to outboard MSIV DC solenoid valve fuse 16A-F11B. Fuse is pulled outward until fuse is free of fuse holder.

STEP NO	STEP	ACT	STANDARD
8	Direct the Unit Reactor Operator to monitor Main Steam line flow using FI-3-06-088A/B/C/D on panel 30C008A. (Cue: Main steam line FI-3-06-088A,B,C,D read 0 Mlbm/hr.	S	Unit Reactor Operator is contacted to monitor Main Steam line flow on FI-3-06-088A/B/C/D at panel 30C008A.
9	Close panel 30C042 front panel doors. (Cue: Panel 30C042 doors are closed.)	P	Door closed and latched using handle.
10	Inform Control Room of task completion. (Cue: Control Room acknowledges report. Outboard MSIV are closed.)	S	Task completion reported using telephone or GAI-TRONICS page system.
11	As an evaluator ensure you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established

Under "ACT" P - must perform
S - must simulate

I. TERMINATING CUE

When the Unit 3 Outboard MSIVs are closed, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

CONSTELLATION ENERGY
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2620430401 / PLOR-189P K/A: 295004AA1.01

URO: 3.8 SRO: 3.8

TASK DESCRIPTION: Bypassing the Unit 2 U.P.S. Static Inverter

A. NOTES TO EVALUATOR:

1. An asterisk (*) before the step number denotes a CRITICAL STEP. CRITICAL STEPS are those steps which when not performed correctly will prevent the system from functioning properly or prevent successful task completion.

2. System cues included in the performance checklist are to be provided to the examinee when no system response is available.

3. JPM Performance

   a. "Control Room" JPMs are designed to be performed in the simulator. If a "Control Room" JPM is to be performed in the Control Room all perform steps (P) shall be simulated (S).

   b. When performing "In-Plant" JPMs, no equipment will be operated without Shift Management approval.

4. Satisfactory performance of this JPM is accomplished if:

   a. The task standard is met.

   b. JPM completion time requirement is met.

      1) For non-time critical JPMs, completion within double the estimated time (listed in paragraph D.2) is acceptable provided the evaluator determines that the progress to completion is acceptable.

      2) For time critical JPMs, completion within the estimated time (listed in paragraph D.2) is required.

5. The estimated time to complete this JPM, though listed in the task standard, is not to be given to the examinee.

B. TOOLS AND EQUIPMENT

None

C. REFERENCES

AO 58B.1.A-2, Rev. 2, “Bypassing the Unit 2 U.P.S. Static Inverter”

D. TASK STANDARD

1. Performance Location: Plant

2. Satisfactory task completion is indicated when Unit 2 U.P.S. Static Inverter is bypassed and electrically isolated to restore power to 20Y050.

3. Estimated time to complete: 10 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to bypass Unit 2 U.P.S. Static Inverter using appropriate procedures. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. 20Y050 panel is de-energized.

2. E124-R-C is energized and breaker 52-3691 is available to supply power to the 20Y050 panel.

3. Security has unlocked the U2 Inverter cage and is standing by.

4. A calibrated digital voltmeter is available.

G. INITIATING CUE

The Control Room Supervisor directs you to bypass and electrically isolate the U2 Static Inverter to restore power to 20Y050 in accordance with AO 58B.1.A-2.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain procedure.	P	AO 58B.1.A-2 obtained Section 2.0 and 4.0 referenced.
*2	Depress “Load to Bypass” pushbutton. (Cue: PB depressed “Load on Bypass” light is NOT lit.)	S	At 20D037 “Load to Bypass” pushbutton is depressed.
*3	Place “Manual Bypass Switch” in “Load to Bypass”. (Cue: switch is in “Load to Bypass” position.)	S	“Manual Bypass Switch” rotated to “Load to Bypass” position.
*4	Place “Battery Input” breaker in “Off”. (Cue: breaker clicked into OFF position.)	S	“Battery Input” breaker placed in “Off” position.
5	Contact CR to verify alarm 220 (20C209R) G-5 is alarmed. (Cue: When requested report alarm 220 G-5 has alarmed.)	S	Communication with CR.
*6	Place “Bypass Input to Static Switch” breaker in “Off”. (Cue: breaker clicked into OFF position.)	S	“Bypass Input to Static Switch” breaker placed in “Off” position.
**** Evaluator: May use Attachment 2 to support JPM Steps 7 -10 ****			
7	Connect voltmeter to “Transformer Test Taps” on top of transformer. (Cue: Voltmeter connected to transformer test tap, and it indicates 120 VAC.)	S	At 20X040 in E12 Bus Room voltmeter connected to test taps on top of transformer. A ladder should be obtained to access the test taps. Class 1 clothing and eye protection should be worn to take voltage measurement.
*8	Place “Auto/Bypass Switch” in “Bypassed” position. (Cue: “Auto/Bypass Switch” in “Bypassed” position.)	S	“Auto/Bypass Switch” rotated to “Bypass” position on 20S315 in Cable Spread Room.
*9	Place “Isolation Switch” in “Open” position. (Cue: “Isolation Switch” is in “Open” position. Voltmeter at 20X040 indicates 125.5 VAC.)	S	“Isolation Switch” rotated to “Open” position.

STEP NO	STEP	ACT	STANDARD
10	Remove voltmeter from “Transformer Test Taps”. (Cue: Voltmeter removed from transformer.)	S	Voltmeter disconnected from transformer test taps.
11	Report to control room that UPS is bypassed to re-energize 20Y050. (Cue: Control Room Supervisor acknowledges report.)	S	Task completion reported.
12	As an evaluator ensure that you have positive control of all exam material provided to the examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

Under “ACT” P - must perform
S - must simulate

I. TERMINATING CUE

When Unit 2 U.P.S. Static Inverter is bypassed and electrically isolated to restore power to 20Y050, the evaluator will then terminate the exercise.

SIMULATOR OPERATOR INSTRUCTIONS FOR 2024 NRC SCENARIO #1

GENERAL REQUIREMENTS

- Recorders will be rolled prior to the scenario and paper from selected recorders will be retained for the examination team as requested.
- All procedures, flow charts, curves, graphs, etc. will be in their normal storage places.
- All markable procedures, boards, etc. will be erased.
- All paper used by the Crew will be retained for the examination team as requested.
- The simulator operators will keep a log of all communications during the scenario as requested by the examination team.
- Perform an independent verification of scenario functions entered per this guide.

SCENARIO SOURCE HISTORY

- This scenario is a new scenario written for the 2024 NRC exam.

INITIAL SETUP

Initial Conditions

- Reset to IC-165, 100% power
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active
- Reset Control Room Radiation Monitors
- Verify CTP is indicating normally on PPC
- Swap to the A RFP Lube Oil Pump on the B RFP

Blocking Tags

- None

Event Triggers

- **ET6, BAT LOOP**

Malfunctions

INSERTED

- **RBW06A,** RBCCW Pump A Auto Start Failure
- **ECW3,** ECW Pump Failure to Auto Start
- **ESW02A,** ESW Pump A Failure to Auto Start
- **ESW02B,** ESW Pump B Failure to Auto Start
- **HPC04,** HPCI Flow Controller Fails Low

TRG 1

- **MFS01B,** Reactor Feedwater Pump B Trip

TRG 2

- **DCW02A,** DW Chilled Water Chiller A Trip

TRG 4

- **RBW01B,** RBCCW Pump B Trip

TRG 5

- **RPS02A,** RPS M-G Output Breaker A Trip

TRG 6

- **MSS01,** Steam Leak in Containment – **30% SV, 15 Min Ramp**
- **RRS20,** Recirculation Loop Rupture – **3% SV, 5 Min Ramp**
- **ASD02C,** Rupture in 'H' SRV Downcomer – **100%, 5 Min Ramp**
- **MSS08H,** SRV H Failure – **25% SV, 30 Min Ramp**
- **PCS03A,** Torus-Drywell Vacuum Breaker A Fails Open

Overrides

INSERTED

- **ZGI12A2S24,** Bkup N2 Sup Line Iso Vlv SV-8130 – **CLOSE**
- **ZGI12A2S30,** Bkup N2 Sup Line Iso Vlv SV-8130 - **CLOSE**

TRG 3

- **ZGI02A6S32,** Inboard SDV Vents and Drains Control Sw – **CLOSE**
- **ANO205LB2,** Scram Disch Volume Not Drained – **ALARM_ON, 1 Min TD**

TRG 5

- **ANO236RE1,** RPS "A" MG Set Trouble or in Test – **ALARM_ON**

TRG 7

- **ANO196LE4,** A Chiller Trouble – **ALARM_OFF**

Remote Functions

INSERTED

- **ADS02H,** H SRV Cntrl Pwr Fuse - **REMOVE**

TRG 8

- **RHR02A,** LPCI Line A Stayfull Vale HV-70A – **CLOSE**
- **RHR02B,** LPCI Line B Stayfull Valve HV-70B – **CLOSE**

TRG 9

- **RWC08A,** A RBCCW Lo Flow Alarm Reset – **RESET**
- **RWC08B,** B RBCCW Lo Flow Alarm Reset - **RESET**

Turnover Procedures

SO 6B.6.A-2, Reactor Feedwater Pump Turbine Standby Lube Oil Pump Startup

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 **Swap 2B RFPT Lube Oil Pumps**

Support the Crew as necessary.

When directed to verify lube oil pump leakage and is smoke is present (SO 6B.6.A-2, step 4.2), wait 1 minute and report no excessive leakage and no smoke is present.

EVENT 2 **2B Feedwater Pump Trip**

When directed by the Lead Examiner, insert **TRG 1** and verify the following event activates:

- **MFS01B,** Reactor Feedwater Pump B Trip

When directed to investigate trip of the 2B RFP, wait 2 minutes and report that the in-service lube oil pump is making a lot of noise and oil system pressures are oscillating.

If contacted to notify the TSO, RP, and Chemistry that reactor power was reduced, acknowledge the report.

If directed to manage Condensate Demineralizers due to the power reduction, acknowledge the report.

EVENT 3 **2A Drywell Chiller Trip**

When directed by the Lead Examiner, initiate pending events on **TRG 2** and verify that the following event activates:

- **DCW02A,** DW Chilled Water Chiller A Trip

If directed to investigate trip of the 2A Chiller, wait 3 minutes and report that Alarm Code A172 is in for the 2A Chiller.

When directed to open the suction and discharge valves for the 2C Drywell Chilled Water (DWCW) Pump, (SO 44A.6.A-2, step 4.2-4.3), wait 1 minute and report the valves are open and request operators start the 2C DWCW Pump.

When directed to perform steps 4.4.3-4.6, wait 3 minutes and report the actions are complete.

When directed to place the DW Chiller 2C Alarm Defeat Switch in Enable, (step 4.9.1), wait 1 minute and report the switch is in Enable and that there are no status tags applied.

When directed to vent the chiller (step 4.9.6), wait 1 minute, and report the steps complete.

When directed to perform the routine inspection of the 2C Drywell Chiller, wait 3 minutes and report the inspection is completed sat.

If crew elects to perform SO 44A.2.A-2 to secure the 2A Drywell Chiller, perform the following:

When directed to place HS-2-44A-2AK018-SW1 to OFF (step 4.1.1), acknowledge and report the action is complete.

If directed to report the position of AO-2-44A-20239-01, check the position of the 2A Chiller switch and if it is in ON, report the valve is open. If it is in OFF, report the valve is closed.

If directed to perform steps 4.1.3.1-4.1.3.3, wait 4 minutes and report the actions are complete.

If directed to place HS-2-44A-2AK018-SW3, in DEFEAT (clear the chiller trouble alarm), insert the **TRG 7**, verify the following, and report completion:

- **ANO196LE4,** A Chiller Trouble – **ALARM_OFF**

EVENT 4 **Inboard Scram Discharge Valves Fail Closed**

When directed by the Lead Examiner, insert **TRG 3** and verify the following event activates:

- **ZGI02A6S32,** Inboard SDV Vents and Drains Control Sw – **CLOSE**
- **ANO205LB2,** Scram Disch Volume Not Drained – **ALARM_ON, 1 Min TD**

If directed to investigate failed valves, wait 3 minutes and report hearing air noise coming from the location of the valves, but I cannot tell where it's coming from.

EVENT 5 **RBCCW Pump Trip/Autostart Failure**

At the direction of the Lead Examiner, insert **TRG 4** and verify the following event activates:

- **RBW01B,** RBCCW Pump B Trip

When directed to investigate the 2B RBCCW Pump trip at the pump and the breaker, wait 3 minutes and report the breaker tripped on overcurrent.

When directed to reset the RWCU trouble alarms, wait 2 minutes and insert **TRG 9** and verify the following events activate:

- **RWC08A,** A RBCCW Lo Flow Alarm Reset – **RESET**
- **RWC08B,** B RBCCW Lo Flow Alarm Reset - **RESET**

EVENT 6 **2A RPS MG Output Breaker Trip**

When directed by the Lead Examiner, insert **TRG 5** and verify the following events activate:

- **RPS02A,** RPS M-G Output Breaker A Trip
- **ANO236RE1,** RPS "A" MG Set Trouble or in Test – **ALARM_ON**

When directed to investigate the 2A RPS MG Set Trip, wait 2 minutes and report the MG set is running, the output breakers are open, and there is an acrid odor coming from the A breaker.

When directed to place RB ventilation in STOP, (GP-8.B, Step 3.6), wait 2 minutes and insert batch file **RBV_OFF** and report completion.

If directed to verify HCU scram pilot valves are energized and that N2 compressors are off, acknowledge the direction and take no further action.

EVENT 7 **Loss of Offsite Power**

When directed by the Lead Examiner, insert **TRG 6** and verify the following events activate:

- **BAT_LOOP**
- **MSS01,** Steam Leak in Containment – **30% SV, 15 Min Ramp**
- **RRS20,** Recirculation Loop Rupture – **3% SV, 5 Min Ramp**
- **ASD02C,** Rupture in 'H' SRV Downcomer – **100%, 5 Min Ramp**
- **MSS08H,** SRV H Failure – **25% SV, 30 Min Ramp**
- **PCS03A,** Torus-Drywell Vacuum Breaker A Fails Open

When directed to perform start checks on the diesel generators, wait 20 minutes, and report all diesel generators are running normally.

If contacted as TSO or Generation Dispatch and requested a status of restoration of offsite power, report the loss of power is grid wide and there is no estimated time of restoration at this time.

If directed to line up Conowingo to Peach Bottom, acknowledge the direction and take no further action.

When directed to report drywell chilled water return header pressure, report return header pressure is 26 psig.

If directed to place Drywell Cooler Fans in SLOW (step 4.6), wait 3 minutes and insert Batch File **DRYWELL_FANS_IN_SLOW**, and report completion.

When directed to perform T-261, wait 20 minutes and modify the following remote function and report completion:

- **T261_1,** Backup N2 from CAD System to 'B' N2 Head - **OPEN**

When directed to close HV-2-10-70A and B, wait 5 minutes, insert **TRG 8**, verify the following events activate, and report completion:

- **RHR02A,** LPCI Line A Stayfull Vale HV-70A – **CLOSE**
- **RHR02B,** LPCI Line B Stayfull Valve HV-70B - **CLOSE**

EVENT 8 **DG Cooling Water Autostart Failure**

Support the crew as necessary.

EVENT 9 **HPCI Controller Fails Low**

Support the crew as necessary.

EVENT 10 **Steam Leak in Containment**

Support the crew as necessary.

TERMINATION The scenario may be terminated when drywell sprays are in service and plant parameters are being controlled.

SHIFT TURNOVER

PLANT CONDITIONS:

A Unit 2 is operating at 100% power.
Control power fuse for the H SRV has been removed due to a circuit failure.

INOPERABLE EQUIPMENT/LCOs:

H SRV

SCHEDULED EVOLUTIONS:

Swapping of the 2B RFPT Lube Oil Pumps.

SURVEILLANCES DUE THIS SHIFT:

None

ACTIVE CLEARANCES:

None

GENERAL INFORMATION:

None

CRITICAL TASK LIST

1. Start diesel generator cooling water pumps within 10 minutes of an automatic diesel generator start.

a. Safety Significance – Failure to start the DG cooling water pumps will result in catastrophic failure of the diesel generators and a total loss of power.

b. Cue – Automatic start of the diesel generators and failure of the cooling water pumps to automatically start.

c. Measurable Performance Indicators – Placing either the A or B ESW pump control switch OR the ECW Pump control swith to START.

d. Performance Feedback – Cooling water pump running.

2. Spray the drywell before the Pressure Suppression Pressure (PSP) Limit is exceeded.

a. Safety Significance – Failure to spray the drywell and control drywell pressure will result in exceeding the design pressure of the drywell and a loss of primary containment.

b. Cue – Drywell pressure rising.

c. Measurable Performance Indicators – Aligning the RHR system for drywell sprays and initiating spray flow.

d. Performance Feedback – Drywell pressure lowering.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **1**

Event Description: Swap 2B RFPT Lube Oil Pumps

Cause: N/A

Effects: N/A

Time	**Position**	**Applicant's Actions or Behavior**
	CRS	1. Direct the PRO to perform SO 6B.6.A-2 to place the 2B RFPT Lube Oil Pump in service.
	PRO	1. Places the RFP B Feed Pump Oil B Pump control switch to RUN. 2. Directs operator to verify no excessive leakage and no smoke coming from the lube oil pump. 3. Places the RFP A Feed Pump Oil B Pump control switch to STOP.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 2

Event Description: 2B Feedwater Pump Trip

Cause: Loss of lube oil to the pump turbine.

Effects: Lowering RPV water level.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report the following alarms are in: a. 201 H-4, B RFPT Trip b. 202 H-3, B RFPT Overspeed Trip Trouble c. 210 H-2, Reactor HI-LO Water Level d. 211 B-3, OPRM Trip Enabled e. 214 B-3, A Recirc Flow Limit f. 214 C-2, A Recirc ASD Minor Trouble g. 214 G-3, B Recirc Flow Limit h. 214 H-2, B Recirc ASD Minor Trouble 2. Reports that the 2B Feedwater Pump has tripped. 3. Verifies and reports recirc runback has occurred. 4. Updates and enters OT-112, Unexpected/Unexplained Change in Core Flow, and OT-100, Reactor Low Level.
	CRS	1. Enters and executes OT-112, Unexpected/Unexplained Change in Core Flow, and OT-100, Reactor Low Level. 2. Directs URO to monitor for Thermal Hydraulic Instabilities (THI). 3. Evaluates position on the Power/Flow (P/F) Map. 4. Determines position is currently in Region II of the P/F Map. 5. Directs URO to perform GP-9, Fast Reactor Power Reduction, and insert control rods to lower reactor power to exit Region II of the P/F Map. (Approximately 50-55% power)
	URO	1. Places the Rod Select Power switch to ON. 2. Selects control rods per the GP-9 Rod Sheet. 3. Places the rod control switch to IN and fully inserts the control rod. 4. Repeats the steps as necessary to lower reactor power.
	PRO	1. Dispatches EO to investigate trip of the 2B Feedwater Pump. 2. Notifies Chemistry, TSO, and RP of power reduction. 3. Directs EO to manage Condensate Demins for power reduction.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **3**

Event Description: 2A Drywell Chiller Trip

Cause: Overcurrent in the undervoltage circuit.

Effects: Rising drywell temperature.

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognize and report alarm 217 D-1, Drywell Chiller Trouble. 2. Reports the 2A Drywell Chiller has tripped. 3. Dispatches EO to investigate trip of the 2A Drywell Chiller.
	CRS	1. Acknowledges report. 2. Obtains and performs SO 44A.7.A-2, Loss of a Drywell Chiller. 3. Determines to place the 2C Drywell Chiller in service. 4. Directs PRO to perform SO 44A.6.A-2, Placing an Additional Drywell Chiller in Service to place the 2C Drywell Chiller in service. 5. Directs PRO to secure the 2A Drywell Chiller per SO 44A.2.A-2, Removing a Drywell Chiller from service.
	PRO	1. Directs EO to perform step 4.2. 2. Places the 2C Drywell Chilled Water Pump control switch in RUN. 3. Verifies rise in chilled water flow. 4. Directs EO to perform steps 4.5-4.6, and 4.9.1-4.9.3. 5. Places the 2C Drywell Chiller control switch in START. 6. Verifies chilled water flow. 7. Directs EO to perform step 4.9.6. 8. Performs SO 44A.2.A-2. 9. Directs EO to perform step 4.1.1. 10. Places the 2A Drywell Chiller control switch to STOP. 11. Directs EO to perform step 4.1.3. 12. Places the control switch for the 2A Drywell Chilled Water Pump to STOP. 13. Directs EO to perform step 4.1.6.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 4

Event Description: Inboard Scram Discharge Volume Vents and Drains Fail Closed

Cause: Failed controls switch.

Effects: Water accumulation in the Scram Discharge Volume.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report the inboard Scram Discharge Volume vent and drain valves are closed. 2. Places the control switch for the inboard SDV vent and drain valves to OPEN and verifies the valves remain closed.
TS	CRS	1. Acknowledges report. 2. Determines that a 7-day LCO is applicable per T.S. 3.1.8, Condition A.
	PRO	1. Dispatches EO to investigate closure of the SDV vent and drain valves.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **5**

Event Description: RBCCW Pump Trip/Autostart Failure

Cause: Pump overcurrent/Failure of autostart circuit.

Effects: Rising temperature on RBCCW cooled components.

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognize and report the following alarms are in: a. 215 A-5, A Clean-Up Recirc Pump Clg Water Trouble b. 215 B-5, B Clean-Up Recirc Pump Clg Water Trouble 2. Reports the 2B RBCCW Pump has tripped. 3. Updates and enters ON-113, Loss of RBCCW.
	CRS	1. Enters and executes ON-113, Loss of RBCCW. 2. Directs ROs to monitor RBCCW cooled components.
	URO	1. Recognizes and reports failure of the 2A RBCCW Pump to start. 2. Places the control switch for the 2A RBCCW Pump to START and verifies the pump starts. 3. Directs EO to reset RWCU Trouble Alarms locally.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **6**

Event Description: 2A RPS MG Output Breaker Trip

Cause: Control circuit failure.

Effects: Half scram and half PCIS isolations.

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognize and report multiple alarms are in, including: a. 208 E-1, RPS 'A' M-G Set Trouble or in Test b. 210 D-4, RPS PCIS Trip Units in Calibration or Gross Failure c. 210 D-5, RPS PCIS Trip Units Card Out of File or Power Failure d. 211 B-1, "A" Channel Reactor Auto Scram e. 214 D-1, Group II/III Inboard Isol. Relays Not Reset f. 225 D-5, Drywell Radiation Monitor Trouble 2. Reports there is a half scram on RPS Channel A.
	CRS	1. Acknowledges the report. 2. Directs PRO to transfer RPS "A" to the alternate feed per SO 60F.6.A-2, Transferring Reactor Protection System Power Supplies.
	PRO	1. Dispatches EO to investigate trip of 2A RPS MG. 2. Verifies MSIV DC coils are not failed. 3. Verifies the Alt Source Available light is lit on panels 20C015 and 20C017. 4. Verifies Control Rod Drive Scram Solenoid Group 1,2,3,4 indicating lights are lit on 20C017. 5. Places the RPS M/G Set Alt Feed Trans Sw on 20C015 to ALTERNATE. 6. Reports the 2A RPS bus is on the alternate power supply.
	CRS	1. Directs URO to reset the half scram per RRC 60F.1-2, Reactor Protection System – Half Scram Reset. 2. Directs PRO to reset the Group I, II, and III isolations per GP-8.C, Group I, II, and III Inboard Half Isolation.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No:** **6 (Cont'd)**

Event Description: 2A RPS MG Output Breaker Trip

Time	Position	Applicant's Actions or Behavior
	URO	1. Verifies scram initiating signal is clear. 2. Places 5A-S9 switch to Scram Reset for Groups 1&4 and 2&3. 3. Verifies Scram Group lights are lit on panels 20C015 and 20C017. 4. Verifies scram alarms are cleared. 5. Directs EO to perform thermal imaging of HCU scram pilot solenoids. 6. Reports the half scram is reset.
	PRO	1. Places the 16A-S32 Inboard PCIS Reset Switch to the Group I position. 2. Verifies Group I isolation alarms clear. 3. Aligns control switches to CLOSE per COL GP-8.C as follows: a. SV-8100, Compressor Suction Inboard Valve b. SV-2671ABCDEFG, O_2 Analyzer Inboard c. AO-2509, Inboard 2" Vent 4. Directs EO to verify Instrument N_2 Compressors are tripped. 5. Verifies SBGT has started and is taking a suction from the Refueling Floor and Equipment Cell area. 6. Verifies the Drywell Purge Fan is not running. 7. Verifies Reactor Building ventilation is isolated. 8. Directs EO to place RB vent fans in STOP. 9. Resets the Reactor Building Ventilation Radiation Monitors. 10. Places the 16S-S32, Inboard PCIS Reset Switch to the Grp II/III position. 11. Verifies the Group II/III isolation alarms clear. 12. Performs SO 9A.2.A, SBGT Shutdown Following an Automatic Startup and Normal Operation. 13. Reports Group I, II, and III isolations are reset.
TS	CRS	1. Determines the following Tech Specs are applicable: a. 72-hour LCO per T.S. 3.3.8.2, Condition A b. 24-hour LCO per T.S. 3.3.6.1, Condition A

c. 12-hour LCO per T.S. 3.3.6.2, Condition A
d. 30-day LCO per T.S. 3.4.5, Condition B

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **7**

Event Description: Loss of Offsite Power

Cause: Loss of Grid.

Effects: Reactor scram and autostart of diesel generators.

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognize and reports loss of offsite power. 2. Places Mode Switch in SHUTDOWN. 3. Reports the following: a. Reactor scram has occurred. b. Mode Switch is in Shutdown. c. Control rods are inserted. d. APRMs are downscale.
	CRS	1. Updates and enters T-101, RPV Control, and SE-11, Loss of Offsite Power. 2. Directs URO to maintain RPV water level between -35 and +35" using HPCI and RCIC. 3. Directs URO to maintain RPV pressure between 800-1000 psig with HPCI and SRVs 4. Directs PRO to place the backup N_2 bottles in service and to perform T-261, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service. 5. Recognizes that all 4 diesel generators (DGs) are running and powering their buses. 6. Directs PRO to secure the RFPT Emergency Bearing Oil Pumps (EBOPs) when the RFPTs stop rotating. 7. Directs PRO to secure the Main Turbine EBOP and vent the Main Generator per SE-11, Attachment S, Venting the Main Generator during LOOP Events/ 8. Directs PRO to secure the Emergency Seal Oil Pump (ESOP) when generator pressure reaches 0 psig. 9. Directs PRO to place Torus Cooling in service. 10. Directs PRO to perform GP-8.B, Groups II and III Isolation.
	URO	1. Verifies the outboard SDV vents and drains are closed.

2. Verifies HPCI and RCIC are running. **(Event 9)**
3. Maintains RPV pressure and level with HPCI, RCIC, and SRVs.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **7 (cont'd)**

Event Description: Loss of Offsite Power

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Trips the Main Turbine. 2. Starts all Main Turbine Bearing Lift Pumps. 3. Verifies PCIS Group I, II, and III isolations. 4. Verifies Hydrogen Water Chemistry is tripped. 5. Verifies both recirc pumps are tripped. 6. Places the backup N_2 bottles in service as follows: a. Places the control switch for SV-8130A and B to RESET, then to AUTO/OPEN. 7. Recognizes and reports failure of SV8130A and B to open. 8. Directs EO to perform T-261, Placing the Backup Instrument Nitrogen Supply from CAD Tank in Service. 9. Performs RRC 94.5-0, PRO Initial actions during a Loss of Offsite Power as follows: a. Verifies all DGs have started and are powering their respective buses. b. Verifies cooling water is running to the DGs. **(Event 8)** 10. Directs EO to secure the RFPT EBOPs and the Main Turbine EBOP when the associated shafts stop spinning. 11. Directs EO to perform SE-11, Attachment S, and to secure the Main Turbine ESOP when gas pressure reaches 0 psig. 12. Monitors diesel generator loading for load starts. 13. Performs GP-8.B, Groups II and III Isolation.
	PRO	1. Places Torus Cooling in service as follows: a. Opens MO-2-10-039A(B), Torus Hdr. b. Opens MO-2-10-089A(B)(C)(D), HPSW Hx Out. c. Verifies DG loading is < 1400 KW. d. Starts the 2A(B)(C)(D) RHR Pump. e. Opens MO-2-10-034A(B), Full Flow Test. f. Verifies DG loading is < 2500 KW. g. Starts the 2A(B)(C)(D) HPSW Pump. h. Verifies DG loading is < 1400 KW and starts a second RHR Pump. i. Verifies DG loading is < 2500 KW and starts a second HPSW pump.

j. Directs ROs to close HV-2-10-70A and B.

2. Reports Torus Cooling is in service.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **8**

Event Description: DG Cooling Water Autostart Failure

Cause: Failure of starting circuit.

Effects: Rising diesel generator temperatures.

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognizes that all DGs have started and are powering their respective buses. 2. Recognize failure of ESW and ECW pumps to automatically start.
CT1		3. Places either the A or B ESW pump control switch OR the ECW pump control switch to START.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **9**

Event Description: HPCI Controller Fails Low

Cause: HPCI Controller circuit failure.

Effects: Loss of automatic HPCI flow control.

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Verifies that HPCI has started automatically. 2. Recognizes that HPCI injection is low. 3. Attempts to raise HPCI flow rate with the flow controller. 4. Recognizes that the flow controller is not responding in AUTO. 5. Places the HPCI flow controller in MANUAL and raises HPCI flow as needed.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **1** **Event No.:** **10**

Event Description: Steam Leak in Containment

Cause: Rupture in steam piping.

Effects: Rising drywell pressure.

Time	Position	Applicant's Actions or Behavior
	CREW	1. Recognizes and reports rising drywell pressure. 2. Updates and enters OT-101, High Drywell Pressure.
	CRS	1. Enters and executes OT-101, High Drywell Pressure. 2. Directs ROs to monitor for sources of the steam leak. 3. Recognizes that the containment suppression function has failed. 4. Updates and enters T-102, Primary Containment Control, when Drywell pressure reaches 2 psig. 5. Directs PRO to spray the Torus using T-204, Initiation of Containment Sprays using RHR. 6. Verifies position on the DW Spray Initiation Limit Curve. 7. Directs PRO to spray the drywell using T-204.
CT-2	PRO	1. Places the keylock switch 10A-S18A(B), Ctmt Spray Override 2/3 Core Coverage, in MANUAL OVERRD. 2. Momentarily places 10A-S17A(B), Ctmt Spray Vlv Cont, in MANUAL. 3. Secures one of the RHR pumps. 4. Closes MO-2-10-034A(B), Full Flow Test. 5. Throttles open MO-2-10-038A(B), Torus Spray. 6. Verifies all Drywell Cooling fans are in OFF. 7. Opens MO-2-10-031A(B), D/W Spray Inboard. 8. Opens MO-2-10-026A(B), D/W Spray Outboard. 9. Throttles spray flow to control Drywell pressure.

TERMINATION CRITERIA:

The scenario may be terminated when drywell sprays are in service and plant parameters are being controlled.

SIMULATOR OPERATOR INSTRUCTIONS FOR 2024 NRC SCENARIO #2

GENERAL REQUIREMENTS

- Recorders will be rolled prior to the scenario and paper from selected recorders will be retained for the examination team as requested.
- All procedures, flow charts, curves, graphs, etc. will be in their normal storage places.
- All markable procedures, boards, etc. will be erased.
- All paper used by the Crew will be retained for the examination team as requested.
- The simulator operators will keep a log of all communications during the scenario as requested by the examination team.
- Perform an independent verification of scenario functions entered per this guide.

SCENARIO SOURCE HISTORY

- This scenario is a new scenario written for the 2024 NRC exam.

INITIAL SETUP

Initial Conditions

- Reset to IC-166, 100% power
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active
- Reset Control Room Radiation Monitors
- Verify CTP is indicating normally on PPC

Blocking Tags

- None

Event Triggers

- **ET6 – ZGI01A4S37==1**
  - DOR ZAOFW07AAI2AP03
  - DOR ANO207LE1
- **ET7 – ZGI02S127==1**
  - BAT ATWS_JAV
- **ET8 – ZGI02A6S33==1**
  - DMF SLC01B
- **ET9 – ZGI02A6S33==3**
  - DMF SLC01A
- **ET12 – Scram PB or Mode Switch in Shutdown**
  - DMF RRS24B

Malfunctions

INSERTED

- **PCI01V,** RWCU Inbd Iso Valve (MO-12-15) Failure
- **PCI01W,** RWCU Otbd Iso Valve (MO-12-18) Failure
- **PCI01X,** RWCU Otbd Isol Valve (MO-12-68) Failure
- **ASD07A,** A Recirc 45% Runback Failure
- **ASD07B,** B Recirc 45% Runback Failure
- **SLC01A,** Standby Liquid Pump A Trip
- **SLC01B,** Standby Liquid Pump B Trip

TRG 1

- **SWS01A,** Service Water Pump A Trip

TRG 2

- **ARIF2A,** ARIA ARIAF2 Blown Fuse

TRG 4

- **RBW03,** RBCCW Non-Essential Load Vlv AO-2253 Fails Closed

TRG 7

- **RRS24B,** Thermal Hydraulic Instabilities In Phase – **50% 10 Minute Ramp, 10 Sec Delay**

Overrides

INSERTED

- **ANO204CA2,** RCIC Turb or Logic in Test – **ALARM_OFF**

TRG 3

- **ZGI13A2S80A,** RCIC Initiation Pushbutton – **ON**
- **ZGI13A2S80B,** RCIC Initiation Collar - **ARMED**

TRG 5

- **ZAOFW07AAI2AP03,** A Condensate Pump Current Meter – **300**
- **ANO207LE1,** A Condensate Pump Ovld – **ALARM_ON**

TRG 14

- **ANO203BBE2,** N2 Compressor A or B Trouble – **ALARM_OFF**

Trip Overrides

See Batch File

Remote Functions

TRG 10

- **T214 –** Venting Scram Air Header - **VENT**

TRG 11

- **T221_1,** Remove Low PRV Level GP1 Isolation – **DEFEAT**

TRG 13

- **IAS06,** Instrument Air to Nitrogen System Vlv AO – **OPEN**
- **IAS07,** Instrument Air to Nitrogen System Vlv AO – **OPEN**

TRG 14

- **IAS08A,** Instrument N2 Compressor A Reset – **TRIPPED, 5 Sec DT**
- **IAS08B,** Instrument N2 Compressor B Reset – **TRIPPED, 5 Sec DT**

Turnover Procedures

SO 34.6.A-2, Placing the Standby Turbine Building Closed Cooling Water System Pump in Service

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 **Swap TBCCW Pumps**

When directed to vent the standby TBCCW pump casing (SO 34.6.A-2, step 4.1.1-4.1.2), wait 1 minute and report venting is complete.

When directed to report local TBCCW pump discharge pressure (step 4.4), report discharge pressure is 78 psig.

EVENT 2 **2A Service Water Pump Trip**

When directed by the Lead Examiner, insert **TRG 1** and verify the following event activates:

- **SWS01A,** Service Water Pump A Trip

When directed to investigate trip of the 2A Service Water Pump, wait 2 minutes and report overcurrent flags at the pump breaker.

If directed to investigate stator water cooling alarms, wait 2 minutes and report alarms are due to high temperature.

When directed to open the suction and discharge valves and blowdown the Y strainer for the 2C Service Water pump (SO 30.1.A-2, steps 4.2.3 and 4.2.4), wait 3 minutes and report the steps are complete.

If directed to ensure area is clear around the 2C Service Water pump breaker, report that the area is clear.

When directed to report local Service Water pump discharge pressure, report discharge pressure is 80 psig.

EVENT 3 **ARI Blown Fuse**

When directed by the Lead Examiner, initiate pending events on **TRG 2** and verify that the following event activates:

- **ARIF2A,** ARIA ARIAF2 Blown Fuse

When directed to investigate loss of power to ARI (ARC 207 E-3, step 3), wait 2 minutes and report that fuse AA-F4 is blown in panel 20C018.

If directed to replace the blown fuse, acknowledge the direction and take no further action.

EVENT 4 **RCIC Spurious Start**

When directed by the Lead Examiner, insert **TRG 3** and verify the following events activate:

- **ZGI13A2S80B,** RCIC Initiation Collar – **ARMED**
- **ZGI13A2S80A,** RCIC Initiation Pushbutton - **ON**

If directed to investigate spurious start of RCIC, wait 2 minutes and report no obvious signs as to why it started.

If sent to investigate the RCIC relays (ARC 227 E-3 Actuating Devices), acknowledge the report and take no further action.

EVENT 5 **Non-Regenerative Heat Exchanger High Temp/Isolation Failure**

At the direction of the Lead Examiner, insert **TRG 4** and verify the following event activates:

- **RBW03,** RBCCW Non-Essential Load Vlv AO-2253 Fails Closed

When directed to investigate RBCCW, wait 3 minutes and report that AO-2253, RBCW Isolation to Non-Regen Hx + CU Recirc Pump Seal Coolers, appears closed.

If directed to open AO-4230A and B, (ON-113, step 2.10) wait 2 minutes and insert **TRG 13** and report completion:

- **IAS06,** Instrument Air to Nitrogen System Vlv AO – **OPEN**
- **IAS07,** Instrument Air to Nitrogen System Vlv AO – **OPEN**

If directed to shutdown the Instrument Nitrogen compressors (ON-113, step 2.11), wait 2 minutes and insert **TRG 14** and report completion:

- **IAS08A,** Instrument N2 Compressor A Reset – **TRIPPED, 5 Sec DT**
- **IAS08B,** Instrument N2 Compressor B Reset – **TRIPPED, 5 Sec DT**
- **ANO203BBE2,** N2 Compressor A or B Trouble – **ALARM_OFF**

If directed to monitor RWCU pump winding temperatures, acknowledge the direction and take no further action.

If directed to check the 20C062 Rack (ARC 215 A-5 Step 1), acknowledge the direction and report low flow on both the motor and the thermal barrier.

EVENT 6 **2A Condensate Pump High Current**

When directed by the Lead Examiner, insert **TRG 5** and verify the following events activate:

- **ANO207LE1,** A Condensate Pump Ovld - **ALARM_ON**
- **ZAOFW07AAI2AP03,** A Condensate Pump Current Meter – **300**

If directed to report local current indication for the 2A Condensate Pump, wait 1 minute and report current is 340 amps.

When the operator secures the 2A Condensate Pump, verify **TRG 6** activates, and the following events occur:

- **DOR ZAOFW07AAI2AP03**
- **DOR ANO207LE1**

If directed to investigate the 2A Condensate pump, wait 3 minutes and report the pumps are not running and no visible signs of why current was high.

EVENT 7 **Recirc Runback Failure**

Support the crew as necessary.

If directed to investigate runback failure at the ASD panel, wait 1 minute and report no obvious signs as to why the runback failed.

EVENT 8 **Thermal Hydraulic Instabilities**

When directed by the Lead Examiner, insert **TRG 7** and verify the following event activates:

- **RRS24B,** Thermal Hydraulic Instabilities In Phase – **50% 10 Minute Ramp**
- **Batch File ATWS_JAV**

EVENT 9 **Electric ATWS**

When the reactor is scrammed, verify **TRG 12** activates, and the following event occurs:

- **DMF RRS24A**

When directed to perform T-221, wait 3 minutes and insert **TRG 11** and verify the following event activates:

- **T221_1,** Remove Low PRV Level GP1 Isolation -**DEFEAT**

When directed by the Lead Examiner, insert **TRG 10** and verify the following event activates:

- **T214,** Venting the Scram Air Header – **VENT**

When the crew attempts to operate the individual scram switches, inform the operator that the switches did not function.

When directed to perform T-213, acknowledge the direction and take no further action.

EVENT 10 **First Standby Liquid Pump Trips**

Support the crew as necessary.

If the crew attempts to start the A SBLC Pump, verify the following malfunction deletes:

- **SLC01B**

If the crew attempts to start the B SBLC pump, verify the following malfunction deletes:

- **SLC01A**

If directed to investigate failure of the SBLC pump to start, wait 2 minutes and report overcurrent flags on the breaker.

TERMINATION The scenario may be terminated when RPV water level is being restored to the normal band and containment parameters are being controlled.

SHIFT TURNOVER

PLANT CONDITIONS:

A Unit 2 is operating at 100% power.
No equipment is out of service.

INOPERABLE EQUIPMENT/LCOs:

None

SCHEDULED EVOLUTIONS:

Swapping TBCCW pumps

SURVEILLANCES DUE THIS SHIFT:

None

ACTIVE CLEARANCES:

None

GENERAL INFORMATION:

None

CRITICAL TASK LIST

1. **Attempt to shutdown the reactor within 5 minutes of an ATWS condition by performance of one of the following:**
   - **Initiation of Standby Liquid**
   - **Venting the Scram Air Header**
   - **Manually inserting control rods**

   a. Safety Significance – Failure to attempt to shutdown the reactor will result in thermal hydraulic instabilities and damage to the fuel cladding.

   b. Cue – Depressing the scram pushbuttons and/or placing the Mode Switch in SHUTDOWN and no rod motion.

   c. Measurable Performance Indicators – Placing the SBLC pump control switch in A or B, directing performance of T-214, Isolating and Venting the Scram Air Header, or performance of T-220, Driving Control Rods during Failure to Scram.

   d. Performance Feedback – SBLC injecting, control rods being inserted.

2. **Begin lowering RPV water level to below -60" within 5 minutes of ATWS conditions.**

   a. Safety Significance – Failure to lower RPV water level in the reactor will result in thermal hydraulic instabilities and damage to the fuel cladding.

   b. Cue – Depressing the scram pushbuttons and/or placing the Mode Switch in SHUTDOWN and no rod motion.

   c. Measurable Performance Indicators – Emergency stopping feedwater pumps and securing HPCI.

   d. Performance Feedback – RPV water level lowering.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **1**

Event Description: Swap TBCCW Pumps

Cause: N/A

Effects: N/A

Time	**Position**	**Applicant's Actions or Behavior**
	CRS	1. Direct the PRO to perform SO 34.6.A-2 and place the 2B TBCCW pump in service and place the 2A TBCCW pump in standby.
	PRO	1. Directs EO to vent the 2B TBCCW pump. 2. Places the control switch for the 2B TBCCW pump to RUN. 3. Directs EO to verify discharge pressure is greater than 70 psig. 4. Places the control switch for the 2A TBCCW pump to STOP, then to AUTO. 5. Directs EO to verify discharge pressure is between 70 and 87 psig.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **2**

Event Description: 2A Service Water Pump Trip

Cause: Overcurrent condition at the breaker.

Effects: Rising RBCCW and TBCCW system temperature.

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognize and report the following alarms are in: a. 216 G-1, A Service Water Pump Trip 2. Reports that the 2A Service Water (SW) Pump has tripped. 3. Updates and enters ON-127, Loss of Service Water.
	CRS	1. Enters and executes OT-127, Loss of Service Water. 2. Directs URO to lower reactor power per GP-9-2, Fast Reactor Power Reduction, to control Service Water temperature. 3. Directs URO to start the 2C Service Water pump per SO 30.1.A-2, Service Water System Normal Operations.
	URO	1. Depresses the recirc speed lower pushbuttons to lower reactor power as necessary. 2. Places the 2A SW pump control switch to STOP. 3. Directs an EO to open the suction and discharge valves and blowdown the Y strainer for the 2C Service Water pump. 4. Places the control switch for the 2C SW pump to RUN and verifies steady current. 5. Verifies SW discharge header pressure is between 65 and 95 psig. 6. Directs EO to verify SW discharge pressure locally is between 65 and 95 psig.
	PRO	1. Dispatches EO to investigate trip of the 2A SW Pump.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **3**

Event Description: ARI Blown Fuse

Cause: Overcurrent in the ARI control circuit.

Effects: Failure of ARI Channel A.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarm 207 E-3, ARI-RPT System Inop Loss of Power. 2. Reports the A ARI circuit has failed.
	CRS	1. Acknowledges report.
TS		2. Determines a 1 Hour LCO is applicable per T.S. 3.3.4.1, Condition C, and TRM 3.1, Condition C, due to loss of both functions for the 'A' ARI channel.
	PRO	1. Dispatches EO to investigate failed ARI circuit.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 4

Event Description: RCIC Spurious Start

Cause: Failed initiation logic circuit.

Effects: Rising reactor power and RPV water level.

Time	Position	Applicant's Actions or Behavior
	PRO	1. Recognize and report various alarms regarding RCIC. 2. Recognize and report spurious start of RCIC system. 3. Updates and enters OT-104, Positive Reactivity Insertion.
	CRS	1. Acknowledges report. 2. Enters and executes OT-104, Positive Reactivity Insertion. 3. Directs URO to maintain reactor power below Maximum Allowed Power Level (MAPL). 4. Directs PRO to manually trip RCIC and shutdown RCIC. 5. Determines that a 14-day LCO is applicable per T.S. 3.5.3, Condition A.
TS		
	PRO	1. Dispatches EO to investigate spurious start of RCIC. 2. Depresses RCIC Trip pushbutton. 3. Verifies AO-2-13-034 and 035, Drain Isol to Mn Cndr, are open. 4. Verifies MO-2-13-132, Cooling Water, is closed. 5. Closes MO-4487, Trip Throttle Valve.
	URO	1. Lowers reactor power as necessary to maintain below MAPL.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 5

Event Description: Non-Regenerative Heat Exchanger (NRHX) High Temperature/Isolation Failure

Cause: Loss of air to the control valve.

Effects: Rising temperature on RBCCW and RWCU components.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report the following alarms are in: a. 215 A-5, A Clean-Up Recirc Pump Clg Water Trouble b. 215 B-5, B Clean-Up Recirc Pump Clg Water Trouble c. 215 C-2, Clean-Up Non Regen Heat Exch Outlet High Temp d. 214 D-1, Group II/III Inboard Isol. Relays Not Reset e. 214 E-1, Group II/III Outboard Isol. Relays Not Reset f. 228 E-2, Nitrogen Compressor A or B Trouble 2. Reports NRHX temperature is 200°F and rising. 3. Recognize and report failure of RWCU to isolate.
	CRS	1. Acknowledges report. 2. Directs URO to rapidly secure RWCU per RRC 12.1-2, Rapidly Securing the Reactor Water Cleanup System. 3. Directs URO to fully isolate the RWCU system.
	URO	1. Secures the running RWCU pump. 2. Places the control switch for MO-2-12-068, RWCU Outlet, to CLOSE. 3. Places the control switch for MO-2-12-018, RWCU Outboard Isol, to CLOSE. 4. Places the control switch for MO-2-12-015, RWCU Inboard Isol, to CLOSE. 5. Directs EO to open AO-4230A and B. 6. Directs EO to secure the Instrument N_2 Compressors.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **6**

Event Description: 2A Condensate Pump High Current

Cause: Overcurrent condition at the pump.

Effects: High current condition

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognize and report multiple alarms are in, including: a. 203 E-1, A Condensate Pump Overload 2. Reports current indication for the 2A Condensate pump is pegged high. 3. Dispatches EO to check local current readings on the 2A Condensate pump.
	CRS	1. Acknowledges the report. 2. Directs PRO to trip the 2A Condensate Pump.
	PRO	1. Places the control switch for the 2A Condensate Pump to STOP. 2. Updates and enters OT-112, Unexpected/Unexplained Change in Core Flow.
	CRS	1. Enters and executes OT-112, Unexpected/Unexplained Change in Core Flow. 2. Checks position on the Power/Flow (P/F) map and determines the plant is in Region II. 3. Directs URO to perform GP-9, Fast Reactor Power Reduction to lower reactor power to exit Region II. (Approx. 55%)
	URO	1. Verifies a 45% Recirc Runback occurs. **(Event 7)** 2. Inserts control rods per GP-9 to lower reactor power.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **7**

Event Description: Recirc Runback Failure

Cause: ASD Circuit Failure.

Effects: Recirc pumps do not run back on a valid signal.

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognize failure of recirc pump runback. 2. Depresses the 45% (High) Runback manual pushbutton. 3. Verifies Recirc pumps are running back.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **8**

Event Description: Thermal Hydraulic Instabilities

Cause: Sudden change in core flow**.**

Effects: Oscillating reactor power, level, and pressure.

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognizes and report that reactor power is oscillating.
	CRS	1. Directs URO to insert control rods per GP-9, Fast Reactor Power Reduction, to address THI. 2. Directs URO to scram the reactor if power oscillations approach 15% peak to peak.
	URO	1. Inserts control rods. 2. Recognizes that THI is approaching 15% peak to peak. 3. Depresses the Scram Pushbuttons and places the Mode Switch in SHUTDOWN.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **9**

Event Description: Electric ATWS

Cause: Failure of scram circuitry.

Effects: Control rods fail to insert on a scram signal.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognizes and reports failure of rods to insert. 2. Emergency stops feedwater pumps as necessary to control RPV water level.
	CRS	1. Updates and enters T-101, RPV Control. 2. Directs ROs to perform ATWS Rapid Response Cards. 3. Directs PRO to perform T-221, Main Steam Isolation Valve Bypass. 4. Exits T-101 and enters T-117, ATWS RPV Control.
	URO	1. Initiates ARI. 2. Trips Recirc pumps 10 seconds apart. 3. Reports reactor power and ready to initiate SLC. 4. Closes Scram Discharge Volume vents and drains.
	PRO	1. Inhibits ADS. 2. Reports ADS inhibited and ready to perform T-240, Termination and Prevention of Injection into the RPV. 3. Directs EO to perform T-221. 4. Verifies Group I, II, and III isolations are complete.
	CRS	1. Directs URO to inject SBLC and to report SBLC Tank level. 2. Directs URO to perform the following procedures: a. T-213, Scram Solenoid De-energization b. T-214, Isolating and Venting the Scram Air Header c. T-220, Driving Control Rods during Failure to Scram 3. Determines that T-240, Attachment 1, Figure 1 is required. 4. Directs PRO to perform T-240, Attachment 1, Figure 1. 5. Directs PRO to maintain RPV level between -70” and -130”. 6. Directs PRO to bypass and restore Drywell Instrument Nitrogen.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **9 cont'd**

Event Description: Electric ATWS

Time	Position	Applicant's Actions or Behavior
	URO	1. Closes valves AO-039 and 040, Recirc Sample.
CT1		2. Places the SBLC pump control switch to either A or B (**Event 10**)
		3. Reports SBLC tank level.
		4. Verifies RWCU has isolated.
		5. Attempts to operate the individual scram switches.
		6. Recognizes and reports the individual scram switches do not function.
CT1		7. Dispatches EO to perform T-213 and T-214.
		8. Performs T-220 as follows: a. Places the CRD flow controller in MANUAL and fully opens the flow control valve. b. Places the keylock switch for the RWM in BYPASS. c. Manually inserts control rods using the Emergency In/Notch Override switch.
	PRO	1. Verifies HPCI is not injecting.
CT2		2. Places the control switch for the HPCI Aux Oil Pump in PTL.
		3. Emergency stops all feedwater pumps.
		4. Begins to close all feedwater pump discharge valves.
		5. Stops the 2C Feedwater Pump discharge valve when RPV level lowers below -60".
		6. Raises RPV injection to stabilize RPV water level in band.
		7. Places DFWS in ATWS Level Control Mode.
		8. Places the 2C Feedwater pump in AUTO.
		9. Arms and depresses the initiation pushbuttons for RHR and Core Spray. (optional)
		10. Secures all RHR and Core Spray pumps.
		11. Bypasses and restores Drywell Instrument Nitrogen as follows: a. Places control switches for AO-2969A and B to CLOSE. b. Places switches 16A-S99 and S100, D/W Inst. N_2 Valves Isolation Bypass, in BYPASS. c. Verifies annunciator 219 G-1, Drywell Inst. N_2 Valves Isolation Bypass, alarms. d. Places control switches for AO-2969A and B to AUTO/OPEN.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.: 2** **Event No.: 9 cont'd**

Event Description: Electric ATWS

Time	Position	Applicant's Actions or Behavior
	PRO	1. Trips Main Turbine when generator loading lowers to 50 MWe. 2. Starts all Main Turbine Bearing Lift Pumps. 3. Verifies Hydrogen Chemistry is isolated.
	URO	1. Recognize and report scram air header is depressurizing from performance of T-214. 2. Reports all control rods have inserted.
	CRS	1. Exits T-117 and enters T-101. 2. Directs URO to secure SBLC injection. 3. Directs PRO to restore RPV water level to +5-+35".
	URO	1. Secures the running SBLC pump.
	PRO	1. Operates DFWS to raise RPV water level to the required band.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **2** **Event No.:** **10**

Event Description: First SBLC Pump Fails to Start

Cause: Pump overcurrent.

Effects: Pump trip.

Time	Position	Applicant's Actions or Behavior
CT1	URO	1. Places the SBLC control switch in either the A or B position. 2. Recognizes failure of the SBLC pump to start. 3. Places the SBLC control switch in the opposite position. 4. Reports failure of the first SBLC pump and the second pump is running. 5. Dispatches EO to investigate failure of the SBLC pump to start.

TERMINATION CRITERIA:

The scenario may be terminated when RPV water level is being restored to the normal band and containment parameters are being controlled.

SIMULATOR OPERATOR INSTRUCTIONS FOR 2024 NRC SCENARIO #3

GENERAL REQUIREMENTS

- Recorders will be rolled prior to the scenario and paper from selected recorders will be retained for the examination team as requested.
- All procedures, flow charts, curves, graphs, etc. will be in their normal storage places.
- All markable procedures, boards, etc. will be erased.
- All paper used by the Crew will be retained for the examination team as requested.
- The simulator operators will keep a log of all communications during the scenario as requested by the examination team.
- Perform an independent verification of scenario functions entered per this guide.

SCENARIO SOURCE HISTORY

- This scenario is a new scenario written for the 2024 NRC exam.

INITIAL SETUP

Initial Conditions

- Reset to IC-167, 100% power
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active
- Verify CTP is indicating normally on PPC
-

Blocking Tags

- None

Event Triggers

- **ET8 - ZGI02A4S03==1**
  - DMF CRH043423

Malfunctions

INSERTED

- **PCI01V,** RWCU Inbd Isol Valve (MO-12-15) Failure
- **PCI01W,** RWCU Otbd Isol Valve (MO-12-18) Failure
- **PCI01X,** RWCU Otbd Isol Valve (MO-12-68) Failure
- **MSS08A,** Reactor Pressure Relief Valve A Failure – **0% SV**
- **PCI01MM,** Relay 16-K83 Failure (10 Dampers and A SGT Fan)
- **PCI01NN,** Relay 16-K84 Failure (10 Dampers and B SGT Fan)

TRG 1

- **CRH043423,** Control Rod (34-23) Drift In

TRG 2 (Global Component Failure Tab)

- **TCVSV1,** Turbine Stop Valve 1 – **0% SV**

TRG 3

- **HPC07,** HPCI Steam Supply Line Break – **10% SV, 10 Min Ramp**

TRG 4

- **MSS08H,** Reactor Pressure Relief Valve H Failure – **100% SV**

TRG 7

- **RWC06,** RWCU Inlet Piping Rupture – **30% SV, 30 Min Ramp**

Overrides

INSERTED

- **ZGI03A2S47,** CU Outbd Inlet Isol Vlv MO-12-18 – **NORM**
- **ZGI03A2S54,** CU Inbd Inlet Isol Vlv MO-12-15 – **NORM**
- **ZGI03A2S52,** RWCU Bottom Hd Drn Vlv MO-12-58 – **NORM**

TRG 2

- **ANO206LH1,** Feedwater Field Instrument Trouble – **ALARM_OFF**
- **ANO206LI1,** Feedwater Computer(Y) Trouble – **ALARM_OFF**

Trip Overrides

INSERTED

- **HPO04TO,** Includes K27, K28, K36, K57 Relays - **OVERRIDE**

Remote Functions

TRG 5

- **ADS02H,** H SRV Cntrl Pwr Fuse - **REMOVE**

TRG 6

- **RHR02A,** LPCI Line A Stayfull Valve HV-70A – **CLOSE**
- **RHR02B,** LPCI Line B Stayfull Valve HV-70B - **CLOSE**

Turnover Procedures

SO 8A.6.A-2, Placing the Standby SJAE in Service and Placing the In-Service SJAE in Standby

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 **Swap Steam Jet Air Ejectors (SJAEs)**

Support the crew as necessary.

EVENT 2 **Control Rod Drift**

When directed by the Lead Examiner, insert **TRG 1** and verify the following event activates:

- **CRH043423,** Control Rod (34-23) Drift In

When directed to investigate control rod 34-23 HCU, wait 2 minutes and report the exhaust riser is hot to the touch.

When the control rod is being inserted, verify malfunction **CRH043423** deletes.

If directed to valve out HCU 34-23, wait 3 minutes and insert malfunction **CRH053423**.

EVENT 3 **Turbine Stop Valve (TSV) 1 Fails Closed**

When directed by the Lead Examiner, insert **TRG 2** and verify the following event activates and support the crew as necessary:

- **TCVSV1,** Turbine Stop Valve 1 – **0% SV**
- **ANO206LH1,** Feedwater Field Instrument Trouble – **ALARM_OFF**
- **ANO206LI1,** Feedwater Computer(Y) Trouble – **ALARM_OFF**

EVENT 4 **High Pressure Coolant Injection (HPCI) Steam Leak**

When directed by the Lead Examiner, insert **TRG 3** and verify the following event activates:

- **HPC07,** HPCI Steam Supply Line Break – **10% SV, 10 Min Ramp**

If directed to investigate high temperature in HPCI room, wait 2 minutes and report the door is hot to the touch and you can hear steam rushing in the room. If dispatched as the Fire Brigade, acknowledge the report.

If directed to open the supply breaker for the closed HPCI isolation valve, wait 3 minutes and insert the following malfunction for the directed valve:

- **VED01_2,** MO-23-16 Magnetic Overcurrent Trip
- **VED01_3,** MO-26-15 Magnetic Overcurrent Trip

EVENT 5 **2H Safety Relief Valve (SRV) Fails Open**

At the direction of the Lead Examiner, insert **TRG 4** and verify the following event activates:

- **MSS08H,** Reactor Pressure Relief Valve H Failure – **100% SV**

If standing by in the Cable Spread Room and directed to remove the control power fuse for the 2H SRV, wait 1 minute (wait 4 minutes if not standing by) and insert **TRG 5** and verify the following event activates:

- **ADS02H,** H SRV Cntrl Pwr Fuse – **REMOVE**

When directed to close HV-2-10-70A and B, wait 5 minutes and insert **TRG 6** and verify the following events activate:

- **RHR02A,** LPCI Line A Stayfull Valve HV-70A – **CLOSE**
- **RHR02B,** LPCI Line B Stayfull Valve HV-70B – **CLOSE**

When PAM pressure is lowered to 885 psig, delete malfunction **MSS08H**.

When directed to reinstall the control power fuse for the 2H SRV, modify remove **ADS02H** to **INSTALL** and report completion.

EVENT 6 **Reactor Water Cleanup (RWCU) Steam Leak in Reactor Building**

When directed by the Lead Examiner, insert **TRG 7** and verify the following events activate:

- **RWC06,** RWCU Inlet Piping Rupture – **30% SV, 30 Min Ramp**

If dispatched as the Fire Brigade, acknowledge the report. Wait 1 minute and report there is no fire and there is steam in the Reactor Building and the Fire Brigade is evacuating.

If the crew performs a rapid depressurization per T-101, RC/P-3, modify the leak ramp rate to 0.

EVENT 7 **Standby Gas Treatment (SBGT) Auto-Initiation Failure**

Support the crew as necessary.

EVENT 8 **2A Safety Relief Valve (SRV) Fails to Open**

Support the crew as necessary.

TERMINATION The scenario may be terminated when RPV water level is being controlled and an RPV blowdown/depressurization is in progress.

SHIFT TURNOVER

PLANT CONDITIONS:

A Unit 2 is operating at 100% power.
No equipment is out of service.

INOPERABLE EQUIPMENT/LCOs:

None

SCHEDULED EVOLUTIONS:

Swapping Steam Jet Air Ejectors

SURVEILLANCES DUE THIS SHIFT:

None

ACTIVE CLEARANCES:

None

GENERAL INFORMATION:

None

CRITICAL TASK LIST

1. **Close the stuck open SRV before Torus water temperature exceeds 110°F.**

   a. Safety Significance – Failure to maintain Torus water temperature below 110°F will result in exceeding the design temperature of the Torus and result in a loss of the primary containment.

   b. Cue – Stuck open SRV with rising Torus water temperature.

   c. Measurable Performance Indicators – Lowering DEHC PAM Pressure to 885 psig.

   d. Performance Feedback – SRV closing and Torus water temperature stabilizing.

2. **Perform an Emergency Blowdown within 10 minutes of the second Reactor Building area temperature exceeding the Action Level.**

   a. Safety Significance – Failure to blowdown the reactor will result in exceeding the design temperature of the reactor building and loss of the Secondary Containment.

   b. Cue – Steam entering the Reactor Building and a failure to isolate the steam leak.

   c. Measurable Performance Indicators – Opening SRVs.

   d. Performance Feedback – RPV pressure lowering.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 1

Event Description: Swap SJAEs

Cause: N/A

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	1. Direct the PRO to perform SO 8A.6.A-2, Placing the Standby SJAE in Service and Placing the In-Service SJAE in Standby.
	PRO	1. Verifies MO-2104B, SPE B Isolation, and MO-2105B, SJAE B Isolation, valves open. 2. Verifies PIC-2239B is in MANUAL. 3. Verifies PIC-2239B 'S' , setpoint is at 120 psig. 4. Verifies PIC-2239B 'V', output valve signal is at the MINIMUM position. 5. Opens AO-2244/45/47B, Air Ejector Inlet B Second Stage valves. 6. Slowly raises the output valve signal on 'V' on PIC-2239B to slowly open CV-2-8A-2239B until pressure indication on PI-2472B is between 115-125 psig. 7. Verifies the process and setpoint vertical bars are matched and place PIC-2239B in AUTO. 8. Adjusts the In-Service SJAE steam supply pressure as necessary to maintain pressure $\geq$ 90 psig. 9. When SJAE 2nd Stage vacuum is greater than 13" Hgv on PI-2246B, opens AO-2238D/E/F/AO-2540B, Air Ejector Inlet B 1st Stage. 10. When steam pressure reaches 115-125 psig, places the control switch for AO-2236D/E/F, Aire Ejector Off-Gas Inlet B to AUTO. 11. Places control switch AO-2236A/B/C, Air Ejector Off-Gas Inlet A in CLOSE. 12. Places PIC-2239A in MANUAL and adjust the 'V' to MINIMUM. 13. Closes AO-2238A/B/C/AO-2540A, Air Ejector Inlet A 1st Stage when steam pressure lowers to 30 psig. 14. Closes AO-2244/45/47A, Air Ejector Inlet A 2nd Stage. 15. Reports the B SJAEs are in service and the A SJAEs are in standby.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **2**

Event Description: Control Rod 34-23 Drift In

Cause: Leak by on the Exhaust Riser

Effects: Control rod inserting.

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarm 211 D-4, Rod Drift, is in. 2. Reports control rod 34-23 is drifting in. 3. Updates and enters ON-121, Drifting Control Rod.
	CRS	1. Enters and executes ON-121. 2. Direct URO to fully insert control rod 34-23 using the Emerg In control switch.
	URO	1. Selects control rod 34-23. 2. Places the Emerg In control switch to INSERT and fully inserts the control rod. 3. Holds the Emerg In control switch for 30 seconds. 4. Verifies the control rod settles at the full in position. 5. Resets the Rod Drift alarm.
TS	CRS	1. Enters a 4-hour LCO per T.S. 3.1.3, Condition C.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **3**

Event Description: TSV-1 Fails Closed

Cause: Loss of Oil Pressure in Control Servo

Effects: Valve closing, reactor pressure rise

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Recognize and report the following alarms: a. 205 A-4, Minor Trouble Turbine Control b. 201 H-1, Minor Trouble Feedwater Control c. 201 Feedwater Field Instrument Trouble 2. Reports TSV-1 has closed.
	CRS	1. References GP-5, Power Operations. 2. Determines reactor power must be lowered to $\leq$ 90% 3. Directs URO to perform GP-9, Fast Reactor Power Reduction, and lower reactor power to 90%. (< 14.25Mlbm/hr Feedwater flow)
	URO	1. Depresses Recirc ASD Lower pushbuttons to lower reactor power to 90%.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 4

Event Description: HPCI Steam Leak

Cause: Break in HPCI Steam Supply Line

Effects: Rising HPCI Room temperature and failure of HPCI to isolate

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarms 210 J-3, High Area Temp, and 216 L-1, React Bldg Vent Panel 20C132 Trouble.
	PRO	1. Recognize and report HPCI room temperature is rising. 2. Recognize and report HPCI has failed to automatically isolate.
	CRS	1. Enters and executes T-103, Secondary Containment Control. 2. Directs PRO to manually isolate HPCI. 3. Directs performance of GP-15, Local Evacuation, of the HPCI Room and Reactor Building. 4. Directs PRO to dispatch the Fire Brigade.
	PRO	1. Dispatches the Fire Brigade. 2. Closes MO-2-23-16 or MO-2-23-15, HPCI Steam Supply Isolation Valves. 3. Recognize and report that HPCI is isolated and room temperatures are lowering. 4. Directs EO to open the supply breaker for the closed HPCI steam supply valve.
TS	CRS	1. Enters a 14-day LCO per T.S. 3.5.1, Condition C.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 5

Event Description: 2H SRV Fails Open

Cause: Failure in SRV Control Circuit

Effects: Rising Torus water temperature

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report the following alarms: a. 210 D-2, Safety Relief Valve Open b. 227 B-4, Blowdown Relief Valves Hi Temp
	PRO	1. Recognize and reports 2H SRV is fully open. 2. Updates and enters OT-114, Inadvertent Opening of a Relief Valve.
	CRS	1. Enters and executes OT-114. 2. Directs PRO to maximize Torus Cooling. 3. Directs PRO to cycle the 2H SRV control switch. 4. Directs URO to lower reactor power to the flow limit per GP-9, Fast Reactor Power Reduction.
	URO	1. Depresses the Recirc ASD Lower pushbuttons to lower reactor power to the flow limit.
		1. Dispatches an EO to stand by for removing the control power fuse for the 2H SRV. 2. Cycles the 2H SRV control switch to OPEN and back to AUTO. 3. Maximizes Torus Cooling as follows: a. Opens MO-2-10-039A and B, Torus Hdr. b. Opens MO-2-10-089A(C) and B(D), HPSW Hx Out. c. Starts the 2A(C) and B(D) HPSW pump. d. Starts the 2A(C) and B(D) RHR pump. e. Opens MO-2-10-034A(B), Full Flow Test. f. Starts the remaining 2 HPSW and RHR pumps. g. Opens the remaining MO-2-10-089 valves. h. Directs EO to close MO-2-10-70A and B.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **5 Cont'd**

Event Description: 2H SRV Fails Open

Time		Position	Applicant's Actions or Behavior
		CRS	1. Directs PRO to remove the control power fuse for the 2H SRV. 2. Directs URO to lower PAM Pressure to 885 psig.
		PRO	1. Directs EO to remove control power fuse for the 2H SRV. 2. Recognizes and reports the 2H SRV is still open. 3. Directs EO to reinstall the control power fuse.
	CT1	URO	1. Depresses the 885 psig rapid pushbutton on the DEHC screen. 2. Recognizes and reports RPV pressure lowering.
		PRO	1. Recognize and report the 2H SRV is closed.
	TS	CRS	1. Enters a 72 hour LCO for both HPCI and one loop of RHR being inoperable per T.S. 3.5.1, Condition D, due to aligning RHR in Torus Cooling.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **6**

Event Description: RWCU Steam Leak in the Reactor Building

Cause: Break in RWCU inlet piping and failure to isolate.

Effects: Rising Reactor Building temperature

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarm 210 J-3, High Area Temp is in.
	PRO	1. Recognize and report rising Reactor Building temperatures. 2. Determines steam leak is coming from RWCU system. 3. Dispatches EO to investigate rising temperatures. 4. Updates and enters T-103, Secondary Containment Control.
	CRS	1. Enters and executes T-103, Secondary Containment Control. 2. Directs PRO to attempt to isolate RWCU. 3. Directs PRO to dispatch the Fire Brigade. 4. Directs a GP-15 Evacuation of the Reactor Building.
	PRO	1. Recognize and reports failure of RWCU to isolate. 2. Dispatches the Fire Brigade.
	CRS	1. Determines a GP-4, Manual Reactor Scram is required. 2. Directs URO and PRO to perform a GP-4.
	URO	1. Initiates a Recirc Runback. 2. Depresses the Scram Pushbuttons and places the Mode Switch in SHUTDOWN. 3. Reports the following: a. Mode Switch is in SHUTDOWN. b. Control rods are inserting. c. APRMs are downscale.
	CRS	1. Enters and executes T-101, RPV Control. 2. Directs URO to maintain RPV water level between +5” and +35”. 3. Directs URO to rapidly lower RPV pressure to 500-600 psig with DEHC.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **6 Cont'd**

Event Description: RWCU Steam Leak in the Reactor Building

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Emergency stops feedwater pumps when RPV water level begins to recover. 2. Closes all RFP discharge valves. 3. Opens the C RFP discharge bypass valve. 4. Controls RPV water level. 5. Verifies all control rods are inserted. 6. Verifies SDV vents and drains are closed.
	PRO	1. Transfers house loads to offsite power. 2. Trips the Main Turbine when generator loading reaches 50 MWe. 3. Starts all Main Turbine Bearing lift pumps. 4. Verifies PCIS Group I, II, and III isolations. 5. Verifies Hydrogen Water Chemistry is tripped. 6. Verify Recirc pumps are at 30%. 7. Verifies SBGT has initiated. (**Event 7**) 8. Recognizes and reports instrument air pressure is greater than drywell pressure.
	CRS	1. Directs PRO to bypass and restore Drywell Instrument N_2.
	PRO	1. Bypasses and restores Drywell Instrument N_2 as follows: a. Places the AO-2969A and B control switches to CLOSE. b. Places D/W Inst. N_2 bypass switches 16A-S99 and S100 to BYPASS. c. Verifies alarm 219 G-1, Drywell Inst. N_2 Valves Isolation Bypass, comes in. d. Places the AO-2969A and B control switches to AUTO/OPEN.
	CRS	1. Recognize a second area temp has reached the action level. 2. Enters and executes T-112, Emergency Blowdown. 3. Verifies Torus water level is > 7'. 4. Directs PRO to open 5 ADS valves.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **6 Cont'd**

Event Description: RWCU Steam Leak in the Reactor Building

Time	**Position**	**Applicant's Actions or Behavior**
CT2	PRO	1. Opens 5 ADS valves. (**Event 8**)

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **7**

Event Description: SBGT Failure to Initiate

Cause: Failure in the start circuitry

Effects: Reactor Building D/P low.

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognize failure of SBGT to initiate. 2. Aligns and starts the A and B SBGT fans and trains.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **3** **Event No.:** **8**

Event Description: 2A SRV Fails to Open

Cause: Control Switch Failure.

Effects: SRV remains closed.

Time	Position	Applicant's Actions or Behavior
	PRO	1. Attempts to open 5 ADS valves. 2. Recognizes and reports failure of the 2A SRV to open.
	CRS	1. Directs PRO to open an additional SRV.
	PRO	1. Opens an additional SRV. 2. Reports 5 SRVs are open.

TERMINATION CRITERIA:

The scenario may be terminated when RPV water level is being controlled and an RPV blowdown/depressurization is in progress.

SIMULATOR OPERATOR INSTRUCTIONS FOR 2024 NRC SCENARIO #4

GENERAL REQUIREMENTS

- Recorders will be rolled prior to the scenario and paper from selected recorders will be retained for the examination team as requested.
- All procedures, flow charts, curves, graphs, etc. will be in their normal storage places.
- All markable procedures, boards, etc. will be erased.
- All paper used by the Crew will be retained for the examination team as requested.
- The simulator operators will keep a log of all communications during the scenario as requested by the examination team.
- Perform an independent verification of scenario functions entered per this scenario guide.

SCENARIO SOURCE HISTORY

- This scenario is a new scenario written for the 2024 NRC exam.

INITIAL SETUP

Initial Conditions

- Reset to IC-168, 100% power
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active
- Load Batch File **ATWS_ARI_Works**
- Reset Control Room Radiation Monitors
- Verify CTP is indicating normally on PPC

Blocking Tags

- None

Event Triggers

- **ET9 – Scram PB or Mode Switch in Shutdown**

Malfunctions

INSERTED

- **PCI01GG,** Drywell 2” Vent Relief Valve (AO-2509) Failure
- **HPW01B,** HPSW Pump B Trip
- **HPW01D,** HPSW Pump D Trip

TRG 4

- **MCS07A,** Condensate Demin Resin A Injection – **50% SV, 5 Min Ramp**

TRG 5

- **ASD04A,** Recirc Flow Controller A Oscillations – **50% SV, 10 Min Ramp**

TRG 7

- **SLC02A,** Squib Valve A Fails to Fire

TRG 8

- **SWC01,** Loss of Stator Cooling Flow

TRG 9

- **PCS07,** Break in Torus Water Space – **100%, 30 Minute Ramp**

Overrides

TRG 3

- **ZGI04A6S20,** Emerg SW Pmp B Switch – **START, 4 Sec Delete Time**

Trip Overrides

INSERTED

- **Batch File: ATWS_ARI_Works**

Remote Functions

TRG 1

- **CRH02,** CRD Pump B Discharge Check Valve HV-36 - **OPEN**

TRG 2

- **CRH01,** CRD Pump A Discharge Check Valve HV-36 – **CLOSE**

TRG 6

- **T210_3,** CRD Suction Filter Inlet Vlv 127 – **0%**

TRG 10

- **RHR25,** MO-176 Power Supply Breaker - **CLOSE**

Turnover Procedures

SO 3.6.A-2, U/2 Placing Standby Control Rod Drive Hydraulic System Pump in Service

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 **Swap Control Rod Drive (CRD) Pumps**

When directed to perform prestart checks for the 2B CRD pump (step 4.2), wait 1 minute and report step 4.2 is complete.

When directed to open the discharge valve for the 2B CRD pump (step 4.4), wait 1 minute and insert **TRG 1** and report completion. Verify the following event activates:

- **CRH02,** CRD Pump B Discharge Check Valve HV-36 – **OPEN**

When directed to check oil level in the pump motor (SO 3.6.A-2, step 4.5), report oil level is satisfactory.

When directed to close the discharge valve for the 2A CRD pump (step 4.7), wait 1 minute and insert **TRG 2** and report completion. Verify the following event activates:

- **CRH01,** CRD Pump A Discharge Check Valve HV-36 – **CLOSE**

EVENT 2 **B Emergency Service Water (ESW) Pump Spurious Start**

When directed by the Lead Examiner, insert **TRG 3** and verify the following event activates:

- **ZGI04A6S20,** Emerg SW Pump A Switch – **START, 4 Sec Delete Time**

When directed to investigate spurious start of the B ESW pump, wait 3 minutes and report no clear indications of why the pump started.

EVENT 3 **Condensate Demineralizer Resin Injection**

When directed by the Lead Examiner, initiate pending events on **TRG 4** and verify that the following event activates:

- **MCS07A,** Condensate Demin Resin A Injection – **50% SV 5 Min Ramp**

When directed to investigate condensate demineralizers, wait until the GP-9 power reduction is in progress, then report a low differential pressure across the 2A Condensate Demineralizer.

When directed to isolate the 2A Condensate Demineralizer **and** after the GP-9 power reduction is in progress, delete malfunction **MCS07A** and report completion.

If directed to evaluate conductivity, acknowledge the direction.

If requested to investigate a high Turbine Building Sample Station trouble alarm, (alarm 204 F-1), wait 2 minutes after the demineralizer is isolated and report the alarm is due to high conductivity due to the failed Condensate Demineralizer.

EVENT 4 **2A Reactor Recirculation Pump (RRP) Oscillations**

When directed by the Lead Examiner, insert **TRG 5** and verify the following events activate:

- **ASD04A,** Recirc Flow Controller A Oscillations – **50% SV, 10 Min Ramp**

If directed to investigate the 2A ASD for the oscillating recirc pump, wait 2 minutes and report no obvious signs of a failure.

EVENT 5 **2B CRD Pump Suction Pressure Trip**

At the direction of the Lead Examiner, insert **TRG 6** and verify the following event activates:

- **T210_3,** CRD Suction Filter Inlet Vlv 127 – **0%**

When directed to investigate suction trip of the 2B CRD Pump, wait 2 minutes and report a high d/p on the suction filter.

When directed to bypass the suction filter (step 2.4 of ON-107), wait 1 minute and modify the remote function **T210_3** to 100.

When directed to perform prestart checks on the 2A CRD pump (step 4.1), wait 1 minute and report start checks completed sat.

When directed to open HV-2-3-36A, wait 1 minute and modify remote function **CRH01** to **OPEN.**

When directed to check oil level in the 2A CRD pump, report oil level is satisfactory.

When directed to perform SO 2A.1.C to restore recirc seal purge, wait 20 minutes and report completion and ready to open MO-2-2A-8029A and B.

EVENT 6 **Standby Liquid Control (SLC) Loss of Continuity**

When directed by the Lead Examiner, insert **TRG 7** and verify the following events activate:

- **SLC02A,** Squib Valve A Fails to Fire

If directed to investigate loss of continuity alarm, wait 2 minutes and report no signs locally at the squib valves.

When the operator goes to check current readings at the ammeter, inform the operator that the current reading is 0 amps.

EVENT 7 **Loss of Stator Water Cooling (SWC)**

When directed by the Lead Examiner, insert **TRG 8** and verify the following event activates:

- **SWC01,** Loss of Stator Cooling Flow

If directed to investigate loss of stator water cooling, wait 2 minutes and report both Stator Water Cooling pumps have tripped.

EVENT 8/9 **AO-2509 Failure to Isolate/Failure to Scram**

Support the crew as necessary.

EVENT 10 **Torus Water Leak**

When the reactor is scrammed, verify **TRG 9** and the following event activates:

- **PCS07,** Break in Torus Water Space – **100%, 30 Minute Ramp**

When directed to check for a rupture in the Torus, wait 3 minutes and report flow noise is heard at the Torus Room door.

If directed to check the Torus Room through the grates, wait 2 minutes and report a rising water level in the Torus Room.

When directed to close the supply breaker for MO-2-10-176, wait 1 minute, insert **TRG 10** and verify the following event activates:

- **RHR25,** MO-176 Power Supply Breaker – **CLOSE**

If directed to verify the HPSW discharge check valves are closed (T-231, step 4.5.3.2, wait 1 minute and report the valves are closed.

EVENT 11 **B and D High-Pressure Service Water (HPSW) Pumps Fail to Start**

If directed to investigate trip of the HPSW pumps, wait 4 minutes and report the pumps tripped on overcurrent and will require extensive repairs.

TERMINATION The scenario may be terminated when RPV water level is being controlled and an RPV blowdown/depressurization is in progress.

SHIFT TURNOVER

PLANT CONDITIONS:

A Unit 2 is operating at 100% power.
No equipment is out of service.

INOPERABLE EQUIPMENT/LCOs:

None

SCHEDULED EVOLUTIONS:

Swapping CRD pumps

SURVEILLANCES DUE THIS SHIFT:

None

ACTIVE CLEARANCES:

None

GENERAL INFORMATION:

None

CRITICAL TASK LIST

1. **Manually initiate ARI to shutdown the reactor within 5 minutes of a failure to scram.**

   a. Safety Significance – Failure to attempt to shutdown the reactor will result in thermal hydraulic instabilities and damage to the fuel cladding.

   b. Cue – Depressing the scram pushbuttons and/or placing the Mode Switch in SHUTDOWN and no rod motion.

   c. Measurable Performance Indicators – Arming and depressing the ARI Initiation pushbuttons.

   d. Performance Feedback – Scram Air Header depressurizing and control rods inserting.

2. **Perform an emergency blowdown when Torus water level cannot be maintained above 10.5 feet.**

   a. Safety Significance – Failure to conduct an emergency blowdown before going below 10.5 feet will result in the drywell downcomers becoming uncovered, and loss of the suppression function of the Drywell.

   b. Cue – Torus water level lowering and makeup sources cannot maintain the water level above 10.5 feet.

   c. Measurable Performance Indicators – Open 5 SRVs valves.

   d. Performance Feedback – 5 SRVs open and RPV pressure lowering.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **1**

Event Description: Swap CRD Pumps

Cause: N/A

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	1. Direct the URO to perform SO 3.6.A-2, U/2 Placing Standby Control Rod Drive Hydraulic System Pump in Service.
	URO	1. Directs EO to perform prestart checks for the 2B CRD pump. 2. Places the control switch for the 2B CRD pump in RUN. 3. Verifies pump current is < 34 amps. 4. Directs EO to open HV-2-3-36B, Inner Disch Block Vv from CRD Water Pump. 5. Directs EO to check oil level in the 2B CRD pump motor. 6. Places the control switch for the 2A CRD pump in STOP. 7. Directs EO to close HV-2-3-36A.

Operator Actions **Form 3.3-2**

Op Test No.: 1 **Scenario No.:** 4 **Event No.:** 2

Event Description: B ESW Pump Spurious Start

Cause: Failure in pump controller.

Effects: B ESW pump start.

Time	Position	Applicant's Actions or Behavior
	PRO	1. Recognize and report alarm 002 A-5, Emergency Service Water Pump Auto-Start, is in. 2. Recognize and report the B ESW pump is running.
TS	CRS	1. Verifies the ESW pump start was not due to a valid signal. 2. Directs PRO to secure the B ESW pump. 3. Enters a 7-day LCO per T.S. 3.7.2, Condition A.
	PRO	1. Stops the B ESW pump.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **3**

Event Description: Condensate Demineralizer Resin Injection

Cause: Release of Demineralizer Resin

Effects: Rising Main Steam Line radiation level

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarm 218 D-2, Main Steam Line HI Radiation. 2. Updates and enters ON-103, Main Steam Line High Radiation
	CRS	1. Enters and executes ON-103. 2. Directs URO to lower reactor power to maintain MSL radiation levels below the MSL Hi Rad alarm setpoint. 3. Directs ROs to investigate sources of high radiation. 4. Acknowledges report of failed condensate demineralizer. 5. Directs PRO to isolate the 2A condensate demineralizer.
	PRO	1. Verifies Hydrogen Water Chemistry is operating normally. 2. Dispatches EO to investigate condensate demineralizers. 3. Informs CRS of failed 2A condensate demineralizer. 4. Directs EO to isolate the failed 2A condensate demineralizer.
	URO	1. Depresses the recirc ASD lower pushbuttons to maintain MSL radiation levels below the MSL Hi alarm setpoint.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **4**

Event Description: 2A Reactor Recirculation Pump Oscillations

Cause: ASD failure

Effects: Oscillating reactor power and level

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report oscillating reactor power and flow. 2. Recognize and reports alarm 211 B-3, OPRM Trip Enabled, in and clear. 3. Updates and enters OT-112, Unexpected/Unexplained Change in Core Flow. 4. Recognizes and reports the 2A Recirc Pump is oscillating.
	CRS	1. Enters and executes OT-112. 2. Directs URO to monitor for THI. 3. Directs URO to place a speed hold on the 2A Recirc Pump.
	URO	1. Places SS-2-02H-210A, Speed Reset-Hold, to HOLD for the 2A recirc pump. 2. Verifies the 2A recirc pump speed is steady.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **5**

Event Description: CRD Pump Suction Pressure Trip

Cause: Clogged suction filter

Effects: Loss of CRD flow

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report the following alarms are in: a. 211 G-1, B CRD Water Pump Trip b. 211 G-3, B CRD Pump Suction Lo Press 2. Reports the 2B CRD pump has tripped. 3. Updates and enters ON-107, Loss of CRD Regulating Function.
	CRS	1. Enters and executes ON-107. 2. Directs URO to bypass the suction filter. 3. Directs URO to start the 2A CRD pump per SO 3.1.B-2, Control Rod Drive Hydraulic System Startup with the System Filled and Vented.
	URO	1. Directs EO to perform prestart checks on the 2A CRD pump. 2. Places the CRD flow controller in MANUAL and fully closes the CRD flow control valve. 3. Opens MO-2-3-20, Drive Water Pressure. 4. Closes MO-2-2A-8029A and B, Seal Purge. 5. Starts the 2A CRD pump. 6. Directs EO to open HV-2-3-36A. 7. Directs EO to check oil level in the 2A CRD pump motor. 8. Opens the CRD flow control valve and establishes 55-65 gpm flow. 9. Places the CRD flow control valve in AUTO. 10. Throttles MO-2-3-20 to 260-280 psid. 11. Directs EO to perform SO 2A.1.C-2, Operation of the Recirculation Pump Seal Purge System. 12. Opens MO-2-2A-8029A and B.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **6**

Event Description: Standby Liquid Control Loss of Continuity

Cause: Open in Squib valve circuitry

Effects: Failure of Squib valves to open

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognize and report alarm 211 H-3, Standby Liquid Squib Valve Loss of Continuity
	CRS	1. Acknowledges the report. 2. Directs PRO to check current indication for the squib valves.
	PRO	1. Reports squib valve current is 0 amps. 2. Dispatches EO to investigate loss of continuity.
TS	CRS	1. Enters a 7-day LCO per T.S. 3.1.7, Condition B.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **7/9**

Event Description: Loss of Stator Water Cooling/Failure to Scram

Cause: SWC Pumps trip

Effects: High generator temperature, turbine trip

Time	Position	Applicant's Actions or Behavior
	URO	1. Recognizes and report the following alarms: a. 206 L-1, Generator Protection Circuit Energized b. 220 A-5, 2 Gen Stator Coolant or H2 Seal Oil Trouble 2. Updates and enters OT-113, Loss of Stator Cooling.
	CRS	1. Enters and executes OT-113. 2. Directs the URO and PRO to perform a GP-4 shutdown.
	URO	1. Initiates a Recirc Runback and trips the 2A Recirc Pump. 2. Depresses the Scram Pushbuttons and places the Mode Switch in SHUTDOWN. 3. Recognizes failure to scram. 4. Reports the following: a. Mode Switch is in SHUTDOWN. b. Control rods NOT are inserting. c. APRMs are NOT downscale.
	CRS	1. Enters and executes T-101, RPV Control. 2. Directs ROs to perform ATWS Rapid Response Cards.
CT1	URO	1. Manually initiates ARI. 2. Recognizes and reports scram air header pressure is lowering, and control rods are inserting. 3. Reports that control rods are fully inserted.
	CRS	1. Directs ROs to perform normal scram actions. 2. Directs URO to maintain RPV level between +5” and +35”. 3. Directs URO to maintain RPV pressure between 800-1000 psig with DEHC.

Operator Actions **Form 3.3-2**

Op Test No.:	**1**	**Scenario No.:**	**4**	**Event No.:**	**7/9 Cont'd**

Event Description: Loss of Stator Water Cooling/Failure to Scram

Time	**Position**	**Applicant's Actions or Behavior**
	URO	1. Emergency stops feedwater pumps when RPV water level begins to recover. 2. Closes all RFP discharge valves. 3. Opens the C RFP discharge bypass valve. 4. Controls RPV water level. 5. Verifies all control rods are inserted. Verifies SDV vents and drains are closed.
	PRO	1. Transfers house loads to offsite power. 2. Trips the Main Turbine. 3. Starts all Main Turbine Bearing lift pumps. 4. Verifies PCIS Group I, II, and III isolations. (**Event 9**) 5. Verifies Hydrogen Water Chemistry is tripped. 6. Verify Recirc pumps are at 30%. 7. Verifies SBGT has initiated. 8. Recognizes and reports instrument air pressure is greater than drywell pressure.
	CRS	1. Directs PRO to bypass and restore Drywell Instrument N_2.
	PRO	1. Bypasses and restores Drywell Instrument N_2 as follows: a. Places the AO-2969A and B control switches to CLOSE. b. Places D/W Inst. N_2 bypass switches 16A-S99 and S100 to BYPASS. c. Verifies alarm 219 G-1, Drywell Inst. N_2 Valves Isolation Bypass, comes in. d. Places the AO-2969A and B control switches to AUTO/OPEN.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **8**

Event Description: AO-2509 Fails to Isolate

Cause: Failure in isolation logic

Effects: AO-2509 fails to close on an isolation signal

Time	**Position**	**Applicant's Actions or Behavior**
	PRO	1. Recognizes that AO-2509 failed to close. 2. Manually closes AO-2509.

Operator Actions **Form 3.3-2**

Op Test No.: **1** **Scenario No.:** **4** **Event No.:** **10/11**

Event Description: Torus Water Leak/B and D HPSW Pumps Fail to Start

Cause: Break in Torus wall/Pump overload

Effects: Lowering Torus water level/Pump trip.

Time	Position	Applicant's Actions or Behavior
	PRO	1. Recognize and report the following alarms: a. 224 E-5, Torus Room Flood b. 226 Torus Water Level Out of Normal Range 2. Reports lowering trend on Torus water level. 3. Updates and enters T-102, Primary Containment Control.
	CRS	1. Enters and executes T-102. 2. Directs PRO to perform T-231-2, HPSW Injection into Torus, and T-233-2, CST Makeup to the Torus Via HPCI Minimum Flow Line. 3. Directs a GP-15, Local Evacuation, of the Torus Room.
	PRO	1. Performs T-233-2 as follows: a. Verifies MO-2-23-017, Cond Tank Suction, is open. b. Throttles open MO-2-23-025, Min Flow. 2. Performs T-231-2 as follows: a. Directs EO to close the supply breaker for MO-2-10-176. b. Verifies RHR and HPSW pumps are secured. c. Verifies MO-2-10-154B, Outboard Disch, is closed. d. Verifies MO-2-10-89B and D are closed. e. Opens MO-2-10-174, and MO-2-10-176. f. Opens MO-2-10-039B, Torus Hdr. g. Starts the 2B or 2D HPSW pump. h. Recognizes and reports failure of both HPSW pumps to start. i. Verifies MO-2-10-89A and C are closed. j. Opens MO-2-32-2344, HPSW Loop Crosstie. k. Starts the A or C HPSW Pump. l. Throttles open MO-2-10-34B, Full Flow Test, to achieve a flow between 3000-5500 gpm.

Operator Actions **Form 3.3-2**

Op Test No.:	**1**	**Scenario No.:**	**4**	**Event No.:**	**10/11 Cont'd**

Event Description: Torus Water Leak/First HPSW Pump Fails to Start

Time	Position	Applicant's Actions or Behavior
	PRO	m. Starts the second HPSW pump. n. Throttles MO-2-10-34B to 11,000 gpm. 3. Reports Torus Makeup is in progress.
	CRS	1. Determines that Torus water level cannot be maintained above 10.5'. 2. Enters and executes T-112, Emergency Blowdown. 3. Verifies Torus water level is above 7'. 4. Directs PRO to open 5 ADS valves.
CT2	PRO	1. Opens 5 ADS valves. 2. Reports 5 ADS valves are open.

TERMINATION CRITERIA:

The scenario may be terminated when RPV water level is being controlled and an RPV blowdown/depressurization is in progress.