Peach Bottom

License No.: DPR-44, DPR-56 Docket No.: 50-277, 50-278
Operator Licensing Exam Dates: 12/07-12/18/09

Peach Bottom Draft - Operating Exam (Sections A, B, and C) (Folder 2)

Chief Examiner: T. Fish
TAC No. U01792
Report No.:50-277/50-278/09-302

Public and Non-Sensitive
NRR-079, SUNSI Review Complete
ADAMS Package Accession No. ML091380320

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-266C
COURSE:	Licensed Operator Requalification	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	Evaluation of High CRD Temperature on Control Rod Scram Time		

APPROVALS:

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Signature / Title Date

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Signature / Title Date

APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:	LMS CODE:	
_____ Signature/Date	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator

TASK-JPM DESIGNATOR: 2011050401 / PLOR-266C K/A: G2.1.32
RO: 3.8

TASK DESCRIPTION: Evaluation of High CRD Temperature on Control Rod Scram Time

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. AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time" (Att 2) DO NOT PRINT HIDDEN TEXT

2. Tech Spec Table 3.1.4-1 "Control Rod Scram Times" (Att 3)

3. Calculator

4. ANSWER KEY for EVALUATOR (Att 2) – PRINT HIDDEN TEXT

C. REFERENCES

1. AO 3.8, Rev. 0 "Evaluation of High CRD Temperature on Control Rod Scram Time"

2. Tech Spec 3.1.4 and Bases

D. TASK STANDARD

1. Satisfactory task completion is indicated when steps 4.1 through 4.5 of the AO are complete.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, complete steps 4.1 through 4.5 of AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time". I will describe initial plant conditions and provide you the materials required to complete this task. I will provide a copy of the required Tech Spec table.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 3 is at 100% power.

2. Control Rod 18-55 temperature is 375 °F and cannot be lowered.

3. System Manager has provided the latest Scram Time data for CR 18-55:

   Position 06 - 2.599 Sec
   Position 26 – 1.396 Sec
   Position 36 – 0.844 Sec
   Position 46 – 0.343 Sec

G. INITIATING CUE

The Control Room Supervisor directs you to complete steps 4.1 through 4.5 of AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time" for Unit 3 Control Rod 18-55.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
*** NOTE *** Attachment 2 is a copy of AO 3.8, Current Revision. Included is the answer key, formatted as HIDDEN TEXT. Copy provided to Candidate should NOT CONTAIN ANY DATA. Configuration Control is via printing or NOT printing HIDDEN TEXT.			
1	Obtain a copy of AO 3.8. (CUE: Provide candidate with a BLANK copy of AO 3.8 – ENSURE YOU DO NOT HAND OUT ANSWER KEY)	P	AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time" is obtained.
*2	Record Unit, Control Rod number, and CRD Temperature on Att 2, Pages 5, 6, 7, and 8	P	Unit 3, Control Rod 18-55, and 375°F recorded on Att 2, Pages 5, 6, 7, and 8
NOTE Data obtained for AO 3.8 Step 4.2 is given in Initiating Cue.			
*3	Record the Position 46 (36, 26, 06) scram time in appropriate location in Att 2	P	Scram Time recorded - Position 46 (36, 26, 06) Scram Time (0.343, 0.844, 1.396, 2.599 sec, respectively) and record in appropriate location in Att 2.
*3	Determine the Position 46 (36, 26, 06) Penalty and record appropriate location in Att 2	P	Correctly determine the Position 46 (36, 26, 06) Penalty (0.07, 0.14, 0.17, 0.15 sec, respectively) and record in appropriate location in Att 2.
*4	Add the Position 46 (36, 26, 06) Scram Time to the associated Penalty and record appropriate location in Att 2	P	Scram Time and Penalty summed correctly - Position 46 (36, 26, 06) - (.413 0.07, 0.14, 0.17, 0.15 sec, respectively) and record in appropriate location in Att 2.
*5	Record the Maximum Notch Scram Time allowed by Tech Spec Table 3.1.4-1 for Position 46 (36, 26, 06) and record appropriate location in Att 2 (Cue: Provide candidate with the Tech Spec Table, PLOR266C Rev000 At3)	P	Correctly determine the Maximum Notch Scram Time allowed by Tech Spec Table 3.1.4-1 – Refer to Key provided as PLOR266C Rev000 At 4
*6	Inform Control Room Supervisor of completion of AO 3.8 to the point of requiring Independent Verification. (Cue: acknowledge communication.)	P	Control room Supervisor is notified of task completion.
7	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 steps 4.1 through 4.5 of the AO are complete, completion of Attachment 1, and identification of the requirement to have an Independent Verification performed prior to taking further action, the Control Room Supervisor should be informed, the evaluator will terminate the exercise.

Attachment 1: Control Rod Scram Time Impact Calculation Initial/Date

(Step **Error! Reference source not found.**) Unit: 3

Associated control rod: 18-55 ____/____

Record the CRD Temperature: 375 °F ____/____

Position 46 Scram Time Penalty Calculation

(Step **Error! Reference source not found.**) Position 46 Scram Time: 0.343 se

(Step **Error! Reference source not found.**) Position 46 Penalty (from Table 1 below): 0.07 sec ____/____

(Step **Error! Reference source not found.**) Determine the Temperature Corrected Position 46 Control Rod Scram Time by adding the Position 46 Scram Time and Position 46 Penalty: 0.413 sec ____/____

(Step **Error! Reference source not found.**) Maximum Notch Position 46 Scram Time allowed by Tech Spec Table 3.1.4-1: 0.44 sec ____/____

Table 1: GE SIL 173 Position 46 Penalty

CRD Temp	Position 46 Penalty
≥ 350° F and < 400° F	0.07 sec
≥ 400° F	0.35 sec

(Step **Error! Reference source not found.**) Position 46 temperature corrected Control Rod Scram Time Independent Verification performed by: ____/____ I.V.

Attachment 1: Control Rod Scram Time Impact Calculation | Initial/Date

(Step **Error! Reference source not found.**) Unit: 3

Associated control rod: 18-55 ____/____

Record the CRD Temperature: 375 °F ____/____

Position 36 Scram Time Penalty Calculation

(Step **Error! Reference source not found.**) Position 36 Scram Time: 0.844 ___

(Step **Error! Reference source not found.**) Position 36 Penalty (from Table 2 below): 0.14 ___ sec ____/____

(Step **Error! Reference source not found.**) Determine the Temperature Corrected Position 36 Control Rod Scram Time by adding the Position 36 Scram Time and Position 36 Penalty: 0.984 ___ sec ____/____

(Step **Error! Reference source not found.**) Maximum Notch Position 36 Scram Time allowed by Tech Spec Table 3.1.4-1: 1.08 ___ sec ____/____

Table 2: GE SIL 173 Position 36 Penalty

CRD Temp	Position 36 Penalty
≥ 350° F and < 400° F	0.14 sec
≥ 400° F	0.60 sec

(Step **Error! Reference source not found.**) Position 36 temperature corrected Control Rod Scram Time Independent Verification performed by: ____/____ I.V.

Attachment 1: Control Rod Scram Time Impact Calculation Initial/Date

(Step **Error! Reference source not found.**) Unit: 3

Associated control rod: 18-55 ____/____

Record the CRD Temperature: 375 °F ____/____

Position 26 Scram Time Penalty Calculation

(Step **Error! Reference source not found.**) Position 26 Scram Time: 1.396 ___

(Step **Error! Reference source not found.**) Position 26 Penalty (from Table 3 below): 0.17 ___ sec ____/____

(Step **Error! Reference source not found.**) Determine the Temperature Corrected Position 26 Control Rod Scram Time by adding the Position 26 Scram Time and Position 26 Penalty: 1.566 ___ sec ____/____

(Step **Error! Reference source not found.**) Maximum Notch Position 26 Scram Time allowed by Tech Spec Table 3.1.4-1: 1.83 ___ sec ____/____

Table 3: GE SIL 173 Position 26 Penalty

CRD Temp	Position 26 Penalty
≥ 350° F and < 400° F	0.17 sec
≥ 400° F	0.70 sec

(Step **Error! Reference source not found.**) Position 26 temperature corrected Control Rod Scram Time Independent Verification performed by: ____/____ I.V.

Attachment 1: Control Rod Scram Time Impact Calculation Initial/Date

(Step **Error! Reference source not found.**) Unit: 3

Associated control rod: 18-55 ____/____

Record the CRD Temperature: 375 °F ____/____

Position 06 Scram Time Penalty Calculation

(Step **Error! Reference source not found.**) Position 06 Scram Time: 2.599 ___

(Step **Error! Reference source not found.**) Position 06 Penalty (from Table 4 below): 0.15 ___ sec ____/____

(Step **Error! Reference source not found.**) Determine the Temperature Corrected Position 06 Control Rod Scram Time by adding the Position 06 Scram Time and Position 06 Penalty: 2.749 ___ sec ____/____

(Step **Error! Reference source not found.**) Maximum Notch Position 06 Scram Time allowed by Tech Spec Table 3.1.4-1: 3.35 ___ sec ____/____

Table 4: GE SIL 173 Position 06 Penalty

CRD Temp	Position 06 Penalty
≥ 350° F and < 400° F	0.15 sec
≥ 400° F	0.70 sec

(Step **Error! Reference source not found.**) Position 06 temperature corrected Control Rod Scram Time Independent Verification performed by: ____/____ I.V.

(Step **Error! Reference source not found.**) Shift Management review of Attachment 1 pages 1, 2, 3, and 4 performed by: ____/____

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-251C
COURSE:	Licensed Operator Requalification	REV #:	001
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	Compliance with Asymmetric Feedwater Heating Operation (AFTO)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:

LMS ENTRY:

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator

TASK-JPM DESIGNATOR: 2590360402 / PLOR-251C K/A: G2.1.7
RO: 4.4

TASK DESCRIPTION: Asymmetric Feedwater Temperature Operation (AFTO)

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. AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)"

2. RE-41 "Installation/Verification of the 3D Monicore Thermal Operating Limits"

3. PLOR251C At 2 – Prepared RE-41 Attachment 1

3. Calculator

C. REFERENCES

1. AO 6.7-2, Rev. 6 "Asymmetric Feedwater Temperature Operation (AFTO)"

2. RE-41, Rev 9 "Installation/Verification of the 3D Monicore Thermal Operating Limits"

D. TASK STANDARD

1. Satisfactory task completion is indicated when steps 1.1 through 2.2 of Attachment 2 of AO 6.7-2, Asymmetric Feedwater Temperature Operation (AFTO), are properly completed.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to assure compliance with regulations during asymmetric feedwater temperature operation 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 experienced a loss of feedwater heating.

2. OT-104 "Positive Reactivity Insertion" was entered and reactor power was lowered to 89% power and is presently stable.

3. It was determined that feedwater heating is asymmetric and procedure AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)" was entered.

4. PMS Computer point NSS018 is INVALID.

5. All reactor feedwater pumps are in service.

6. Feedwater temperatures as read on TR-2151 are as follows:

   A feedwater temperature = 320 degrees F
   B feedwater temperature = 322 degrees F
   C feedwater temperature = 323 degrees F

G. INITIATING CUE

The Control Room Supervisor directs you to perform Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements" of AO 6.7-2, "Asymmetric Feedwater Temperature Operation".

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of AO 6.7-2. (Cue: Provide a copy of AO 6.7-2 to the Examinee)	P	AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)", is obtained. AO 6.7-2, Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", is referenced.
2	Determine that second bullet of step 1.1 of Attachment 2 of AO 6.7-2 is applicable since PMS Computer point NSS018 is INVALID. (Cue: If necessary, repeat Task/Prerequisite Condition that PMS Computer point NSS018 is INVALID.)	P	Determine that average feedwater temperature has to be calculated using Attachment 2 Exhibit 1 of AO 6.7-2. Sign-off Attachment 2 Exhibit 1. Mark the first part of step 1.1 of Attachment 2 of AO 6.7-2 as "N/A".
*3	Calculate average feedwater temperature value using Attachment 2 Exhibit 1 "Determining Feedwater Injection Temperature Using TR-2151". (Cue: If necessary, repeat Task/Prerequisite Conditions that: A FW temperature = 320 degrees F B FW temperature = 322 degrees F C FW temperature = 323 degrees F, And that all reactor feedwater pumps are in service.)	P	Since PMS Computer point NSS018 is INVALID, per step 1.1 of AO 6.7-2 the Examinee will use Attachment 2 Exhibit 1 "Determining Feedwater Injection Temperature Using TR-2151" to calculate the average feedwater temperature value. Examinee inserts values of 320, 322 and 323 degrees F respectively into Exhibit 1. The average feedwater injection temperature with 3 in-service reactor feedwater pumps is determined to be 321.7 degrees F.
*4	Determine that 55 °F feedwater temperature reduction is applicable by reviewing RE-41, Att 1 (Cue: Provide At 2, a prepared copy of RE-41, Att 1, indicating that 55 °F feedwater temperature reduction IS allowed and 90 °F Feedwater temperature reduction is NOT allowed)	P	Candidate references RE-41, Att 1 to determine that 55 °F feedwater temperature reduction IS allowed.
5	Identify that Section 2.0 (of Att 2) IS applicable	P	Candidate identifies Section 2.0 of Att 2 is applicable (See step 1.2)

STEP NO	STEP	ACT	STANDARD
6	Identify that Section 3.0 (of Att 2) IS NOT applicable	P	Candidate identifies Section 3.0 of Att 2 is NOT applicable (See step 1.2)
*7	Determine that Unit 2 is operating in the 55 degree Feedwater Temperature Reduction Region of Attachment 2, Figure 1 "Feedwater Temperature Limits". (Cue: If necessary, repeat Task/Prerequisite Condition that Unit 2 is at 89% reactor power and stable.)	P	Compare the feedwater temperature determined above (321.7 degrees F) against the Feedwater Temperature Reduction Region Curve located on Attachment 2, Figure 1 "Feedwater Temperature Limits" of AO 6.7-2. Examinee should plot 321.7 degrees F at 3127 MWth (0.89 times 3514 MWth) on Attachment 2, Figure 1.
8	Exit Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements" of AO 6.7-2.	P	Step 2.2 of Attachment 2 is referenced. Since actual feedwater temperature was determined to be in the 55 degree F Feedwater Temperature Reduction Region of Attachment 2, Figure 1, then Attachment 2 is EXITED.
9	Inform Control Room Supervisor of completion of Attachment 2 "Feedwater Temperature Reduction Monitoring Requirements" of AO 6.7-2. (Cue: acknowledge communication.)	P	Control room Supervisor is notified of task completion.
10	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 steps 1.1 through2.2 of Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", of AO 6.7-2 are completed the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

ATTACHMENT 1

3D Monicore Installed Thermal Limits
(Check one column for each Operational Condition)

Unit 2

Operational Condition	ALLOWED (Thermal Operating Limits Implemented AND operation allowed at this time in the cycle)	NOT ALLOWED (Thermal Operating Limits NOT Implemented OR operation not allowed at this time in the cycle)
Increased Core Flow (>100% to ≤110% of rated)	✓	
55° Feedwater Temperature Reduction	✓	
90° Feedwater Temperature Reduction		✓

Prepared By: R. Eng / Today
By /Date

IV: Other R. Eng / Today
By /Date

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-257C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	001
AUTHOR:	M. J. Kelly	TYPIST:	mda
TITLE:	ISOLATING THE 2A TBCCW HEAT EXCHANGER DUE TO A LEAK		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID#: _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2002300401 / PLOR-257C K/A: 2.2.41
URO: 3.5 SRO: 3.9

TASK DESCRIPTION: Ability to obtain and interpret station electrical and mechanical drawings

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. P&ID M-314 sheet 2, Rev. 61

2. P&ID M-316 sheet 2, Rev. 61

C. REFERENCES

1. P&ID M-314 sheet 2, Rev. 61

2. P&ID M-316 sheet 2, Rev. 61

3. OP-AA-108-101 "Control of Equipment and System Status"

D. TASK STANDARD

1. Satisfactory task completion is indicated when the isolation points and vent/drain paths for the TBCCW and service water side of the 2A TBCCW heat exchanger have been identified.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, determine the isolation points, vent paths, and drain paths necessary to isolate a tube leak located on the 2A TBCCW heat exchanger.

F. TASK CONDITIONS/PREREQUISITES

A suspected tube leak has been identified on the standby 2A Turbine Building Closed Cooling Water (TBCCW) heat exchanger 2AE038. The Work Control Supervisor will be developing an Abnormal Component Position Sheet for isolation, venting, and draining of the 2A TB CCW heat exchanger.

G. INITIATING CUE

The Control Room Supervisor directs you to identify the components and their required positions to isolate, vent and drain the tube and shell side of the 2A TBCCW heat exchanger. Document your results on the CUE SHEET.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Locate the component that is leaking on P&ID drawings M-316 sheet 2 (TBCCW side) and M-314 sheet 2 (Service Water side). (Cue: Provide the candidate with a copy of M-316 Sheet 2 and M-314 Sheet 2.)	P	Locate 2AE038 on M-316 sheet 2, (Coordinates H-5) and on M-314 sheet 2 (Coordinates H-4).
******NOTE****** **It should be determined by the Examinee that isolation points are selected first and then vents and drains are to be opened. This applies to both the TBCCW and Service Water sides of the heat exchanger.**			
*2	Close HV-2-34-24275A "2AE038 TBCCW Inlet Block Valve". (Cue: Acknowledge that isolation point has been selected.)	P	Identifies that HV-2-34-24275A "2AE038 TBCCW Inlet Block Valve" must be CLOSED in order to isolate TBCCW to the heat exchanger.
*3	Close HV-2-34-24278A "2AE038 TBCCW Outlet Block Valve". (Cue: Acknowledge that isolation point has been selected.)	P	Identifies that HV-2-34-24278A "2AE038 TBCCW Outlet Block Valve" must be CLOSED in order to isolate TBCCW to the heat exchanger.
*4	Uncap and open HV-2-34-24359A "2AE038 Lower Vent Valve" AND / OR Uncap and open HV-2-34-24276A "2AE038 Upper Vent Valve" (Cue: Acknowledge that vent point(s) has been selected.)	P	Identifies that HV-2-34-24359A "2AE038 Lower Vent Valve" must be UNCAPPED and OPEN in order to VENT the lower section of the 2A TBCCW heat exchanger AND / OR HV-2-34-24276A "2AE038 Upper Vent Valve" must be UNCAPPED and OPEN in order to VENT the upper section of the 2A TBCCW heat exchanger.
*5	Uncap and open HV-2-34-24277A "2AE038 Drain Valve" (Cue: Acknowledge that drain path has been selected.)	P	Identifies that HV-2-34-24277A "2AE038 Drain Valve" must be UNCAPPED and OPEN in order to DRAIN the TBCCW side of the 2A TBCCW heat exchanger.

STEP NO	STEP	ACT	STANDARD
*6	Close HV-2-30-21774A "2AE038 Service Water Inlet Block Valve". (Cue: Acknowledge that isolation point has been selected.)	P	Identifies that HV-2-30-21774A "2AE038 Service Water Inlet Block Valve" must be CLOSED in order to isolate Service Water to the heat exchanger.
*7	Close HV-2-30-21775A "2AE038 Service Water Outlet Block Valve". (Cue: Acknowledge that isolation point has been selected.)	P	Identifies that HV-2-30-21775A "2AE038 Service Water Outlet Block Valve" must be CLOSED in order to isolate Service Water to the heat exchanger.
*8	Uncap and open HV-2-30-21776A "2AE038 Service Water Inlet Drain Valve" AND / OR Uncap and open HV-2-30-21777A "2AE038 Service Water Low Point Drain Valve" AND / OR Uncap and open HV-2-30-21778A "2AE038 Service Water High Point Drain Valve" (Cue: Acknowledge that drain point(s) has been selected.)	P	Identifies that HV-2-30-21776A "2AE038 Service Water Inlet Drain Valve" must be UNCAPPED and OPEN in order to DRAIN the Service Water side of the 2A TBCCW heat exchanger AND / OR HV-2-30-21777A "2AE038 Service Water Low Point Drain Valve" must be UNCAPPED and OPEN in order to DRAIN the Service Water side of the 2A TBCCW heat exchanger. AND / OR HV-2-30-21778A "2AE038 Service Water High Point Drain Valve" must be UNCAPPED and OPEN in order to DRAIN the Service Water side of the 2A TBCCW heat exchanger.
*9	Uncap and open HV-2-30-21779A "2AE038 Service Water Vent Valve" (Cue: Acknowledge that vent point(s) has been selected.)	P	Identifies that HV-2-30-21779A "2AE038 Service Water Vent Valve" must be UNCAPPED and OPEN in order to VENT the Service Water side of the 2A TBCCW heat exchanger.

STEP NO	STEP	ACT	STANDARD
10	Inform Control Room Supervisor of task completion. (Cue: The Control Room Supervisor acknowledges the report.)	P	The operator informs the Control Room Supervisor of task completion.
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 TBCCW and Service Water side isolation points, vent paths, and drain paths to the 2A TBCCW heat exchanger have been identified, and the Control Room Supervisor informed, the evaluator will terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-341CA
COURSE:	LICENSD OPERATOR REQUALIFICATION	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	PERFORM STATE / LOCAL EVENT NOTIFICATIONS FOR A DECLARED EMERGENCY (Alternate Path: Incomplete Form)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2950110501 / PLOR-341CA K/A: G2.4.39

URO: 3.9 SRO: 3.8

TASK DESCRIPTION: PERFORM STATE / LOCAL EVENT NOTIFICATIONS FOR A DECLARED EMERGENCY (Alternate Path: Incomplete Form)

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. EP-MA-114-100, Mid-Atlantic State/Local Notifications, Rev. 13.

2. EP-MA-114-100-F-01, State/Local Event Notification Form, Rev. G

C. REFERENCES

1. EP-MA-114-100, Mid-Atlantic State/Local Notifications, Rev. 13.

D. TASK STANDARD

1. Satisfactory completion of this task is indicated when the errors on the State/Local Event Notifications have been identified.

2. Estimated time to complete: 10 minutes.

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, make State/Local Notifications in accordance with EP-MA-114-100, Mid-Atlantic State/Local Notifications. I will describe the initial conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. A transient has occurred on Peach Bottom Unit 2.

2. The Shift Manager, acting as the Station Emergency Director, has completed the initial classification of the event and prepared the State/Local Notification Form, EP-MA-114-100-F-01.

3. The event is classified as an Alert.

4. Another operator has been assigned to fax the State/Local Notification Form to the TSC and the EOF.

G. INITIATING CUE

As the communicator, complete the required State and Local 15-minute Notifications in accordance with Step 4.2 of EP-MA-114-100, Mid-Atlantic State/Local Notifications using the provided STATE/LOCAL NOTIFICATION FORM.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
NOTE TO EVALUATOR: When the cue is provided to the candidate, then WRITE the "DECLARED AT TIME" (5 minutes previous to actual time) on the State/Local Event Notification form in Section 3c and give it to the candidate.			
1	Receive from the SED the in-progress copy of EP-MA-114-100, "Mid-Atlantic State/Local Notifications" AND EP-MA-114-100-F-01, "State/Local Event Notification Form." (Cue: Provide the examinee with a copy of EP-MA-114-100 AND Attachment 2 of this JPM).	P	Candidate receives a copy of EP-MA-114-100, Mid-Atlantic State/Local Notifications AND the filled out EP-MA-114-100-F-01, State/Local Event Notification Form.
2	Ensure that "Utility Message No." has been assigned using a sequential number.	P	Candidate verifies that the "Utility Message No." blank is filled in with the number "1".
3	Review form for completeness.	P	Candidate reviews form to ensure that appropriate blanks are filled in.
****** NOTE: **** The Alternate Path portion of this JPM begins with the next step.**			
Notes to Evaluator: (1) There are THREE errors (omissions) intentionally included on the "completed" form handed to the candidate. It is expected that the candidate will identify all three errors in the first review, however it is possible the form may go back to the SED as many as three times to correct each error one at the time. Either way is acceptable. It will be the responsibility of the Evaluator to provide the missing data, using the key. When all errors are recognized and the candidate is ready to initiate the phone call, the JPM may be concluded with no further action taken (Steps 8-18 are optional). (2) It is also possible that the candidate will not recognize one or more of the errors. In this case, allow the candidate to proceed with the notifications. If the candidate is able to recognize and correct all errors without communicating any false data, then the standard is met, and the JPM can be concluded at the discretion of the Evaluator. (3) Steps 8 – 18 are NOT critical, and included to provide cueing information for the Evaluator in the event the candidate fails to recognize one or more errors prior to attempting communications.			

STEP NO	STEP	ACT	STANDARD
*4	Recognize "Emergency Director Approval" signature has NOT been entered.	P	Candidate recognizes that the Shift Manager signature in the ED approval form is blank.
*5	Recognize "Affected Unit" is not specified.	P	Candidate recognizes that the Affected Unit is not specified.
*6	Recognize "4.b" is blank	P	Candidate recognizes 4.b is blank.
*7	Return form to Shift Emergency Director, identify above errors. (Cue: Acknowledge errors and omissions, correct them IAW Att 3, and then return to candidate IF it is desired to complete steps 9-19)	P	Candidate returns form to SED for correction of errors.
8	Confirm dial tone on NARS line. (Cue: When candidate picks up receiver, tell them that they hear a dial tone.)	P/S	Candidate picks up phone and listens for dial tone.
9	Dial the appropriate CODE (CAN No.) listed for the affected station. (Cue: acknowledge dialing of number).	P/S	Candidate dials CAN Number 833 into the phone.
10	Repeat the required message while allowing agencies to come on line. (Cue: acknowledge message.)	P	Candidate states: "This is the Exelon Nuclear Peach Bottom Control Room. Please standby for a notification message."
11	After 10-15 seconds, read the required message. (Cue: acknowledge message.)	P	Candidate states: "This is the Exelon Nuclear Peach Bottom Control Room. Please standby to receive a notification message and respond as the roll is called."
12	Conduct an initial roll call for the agencies listed on the State/Local Event Notification Form. (Cue: respond with "here" or "present" or another suitable term as each agency is called.)	P	Call out each agency on the Peach Bottom 15 minute notification list on page 3 of the State/Local Event Notification Form. Write the time on the form as each agency responds.

NOTE TO EVALUATOR:

Completion of the Initial Roll Call is required to be completed within 15 minutes of the initial classification. AFTER the JPM is complete, compare the "DECLARED AT TIME" to the roll call complete time to ensure that it is less than 15 minutes.

STEP NO	STEP	ACT	STANDARD
13	Enter the time that the roll call was completed.	P	Enter the time the roll call was completed in the box on the bottom of the roll call box on page 2 of the form. This time is required to be less than 15 minutes.
14	Read the blocks from the approved notification form.	P	Read each of the notification form blocks one at a time using the Phonetic Alphabet and speaking slowly and clearly.
15	Repeat the roll call. (Cue: respond with "here" or "present" or another suitable term as each agency is called.)	P	Call the roll for each agency and check the final roll call box as each agency responds.
16	Ask if there are any questions. (Cue: respond with "no questions".)	P	Ask if there are any questions and wait for a response.
17	Read the required statement, "This concludes the notification message". (Cue: acknowledge statement.)	P	Read the following: "This concludes the notification message".
18	Report to the Shift Manager/Emergency Director that notifications have been completed. (Cue: acknowledge report.)	P	Report that State/Local Notifications have been completed.
19	As an evaluator, ensure that you have positive control of all exam material provided to examinees (Task Conditions/Prerequisites AND procedures).	P	Positive Control Established.

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

I. TERMINATING CUE:

When the candidate reports that the State/Local Event Notifications are complete, the evaluator will be notified. The evaluator will then terminate the exercise.

STATE/LOCAL EVENT NOTIFICATION FORM

UTILITY MESSAGE NO. 1

EMERGENCY DIRECTOR APPROVAL : *S. E. Director*

PERFORM INITIAL ROLL CALL PRIOR TO TRANSMITTING – Refer to Page 3 of Form

1. CALL STATUS is:	2. This is _____
[X] This is a DRILL.	for [ ] LIMERICK / [X] PEACH BOTTOM / [ ] TMI
[ ] This is an ACTUAL EVENT.	My phone number is _____ The current time is _____. [Communicator will provide his/her NAME, PHONE NUMBER, and CURRENT TIME (in 24-hour clock) when notification is read]

3.a EMERGENCY CLASSIFICATION	b. AFFECTED UNIT(S) is/are:	d. THIS REPRESENTS A/AN:
[ ] UNUSUAL EVENT	[ ] ONE [X] TWO [ ] THREE	[X] INITIAL DECLARATION
[X] ALERT		[ ] ESCALATION
[ ] SITE AREA EMERGENCY	c. DECLARED AT:	[ ] NO CHANGE
[ ] GENERAL EMERGENCY	TIME: 5 minutes ago *(24-hr clock)*	[ ] REDUCTION
[ ] RECOVERY	DATE: Today's Date	- IN CLASSIFICATION STATUS
[ ] TERMINATION		

4. a. EMERGENCY ACTION LEVEL (EAL) NO. is: MA 3

b. A BRIEF NON-TECHNICAL DESCRIPTION OF THE EVENT is as follows:

The reactor control rods failed to automatically shutdown the reactor when required. Current plant conditions DO NOT threaten public safety.

5. NON-ROUTINE RADIOLOGICAL RELEASE STATUS is:

[X] a. NO radiological release in-progress

[ ] b. AIRBORNE radiological release in-progress

[ ] c. LIQUID radiological release in-progress

[ ] d. Radiological release TERMINATED

6. METEOROLOGY is:

a. WIND DIRECTION is *FROM*: 15 (degrees)

b. WIND SPEED is: 12 (miles per hour)

STATE/LOCAL EVENT NOTIFICATION FORM

7. UTILITY PROTECTIVE ACTION RECOMMENDATION: (**a or b**) – No action should be taken until government officials have been notified: by State:

[X] a. NOT APPLICABLE *(Unusual Event, Alert, Site Area Emergency, Termination or Recovery only)*

(Complete the following for Shelter or Evacuation for a General Emergency only for the applicable station):

[ ] b. The PROTECTIVE ACTION RECOMMENDATION (PAR) from the utility is:

LGS/PBAPS

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____MILES
AND
SHELTER THE FOLLOWING SECTORS FROM _____ MILES TO _____ MILES:

[ ] N	[ ] E	[ ] S	[ ] W
[ ] NNE	[ ] ESE	[ ] SSW	[ ] WNW
[ ] NE	[ ] SE	[ ] SW	[ ] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where shelter is recommended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____MILES
AND
EVACUATE THE FOLLOWING SECTORS FROM _____ MILES TO _____ MILES:

[ ] N	[ ] E	[ ] S	[ ] W
[ ] NNE	[ ] ESE	[ ] SSW	[ ] WNW
[ ] NE	[ ] SE	[ ] SW	[ ] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

TMI

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where shelter is recomrnended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

8. CONCLUSION: [X] This is a DRILL. [ ] This is an ACTUAL EVENT.

- **PERFORM** FINAL ROLL CALL UPON COMPLETION – Refer to Page 3 of Form
- **ASK** if there are any questions regarding message or repeat backs needed
- **READ** "This concludes the notification message"
- **FAX** completed copies of all form pages to the Control Room, TSC and EOF, as applicable.
- **INFORM** the Shift Manager (Shift Emergency Director), TSC Director or EOF Director, as applicable, when notification is completed to required contacts.

STATE/LOCAL EVENT NOTIFICATION FORM

"15 Minute Notifications"

PEACH BOTTOM (CAN 833)

"Notification Line": Dial **"833"** for conference call. Stay on the line until agencies come on
"3 Digit Extensions. Make these calls from 3-digit lines.
"Commercial # From PBAPS": Make these calls from a 4-digit line. Dial "9-1-Area Code-Number"
"Commercial # From PBABS 3-digit lines: Dial "7-1-9-1-Area Code-Number"

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 216 or 9-1-800-424-7362 / 9-1-717-651-2001	☐
_____	**Maryland EMA** Ext. 205 or 9-1-410-517-3600	☐
_____	**York County** Ext. 219 or 9-1-717-854-5571	☐
_____	**Harford County** Ext. 214 or 9-1-410-638-3400 / 9-1-410-638-4900	☐
_____	**Cecil County** Ext. 234 or 9-1-410-398-2222 / 9-1-410-392-2010	☐
_____	**Lancaster County** Ext. 217 or 9-1-800-808-5236 / 9-1-717-664-1190	☐
_____	**Chester County** Ext. 218 or 9-1-610-344-5100	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (PEACH BOTTOM ONLY)

[ ] Maryland Dept. of the Environment
Emergency ext. 292 or 235
9-1-866-633-4686
Contacted at: _____ (time: 24-hour clock)

[ ] PA State Police, York Barracks
Ext. 284 or 9-1-717-428-1011
Contacted at: _____ (time: 24-hour clock)

*** NOT required within 15 minutes of Classification**

"15 Minute Notifications"

LIMERICK (CAN 841)

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 116 or 9-1-800-424-7362 or 9-1-717-651-2001	☐
_____	**Montgomery County** Ext. 117 or 9-1-610-631-6541	☐
_____	**Chester County** Ext. 118 or 9-1-610-344-5100	☐
_____	**Berks County** Ext. 119 or 9-1-610-655-4931	☐
_____	**Initial Roll Call Completed**	

"15 Minute Notifications"

TMI (CAN 44)

"Notification Line": Dial "**44**" for **all-call**. If necessary, dial 3-digit extension #'s to notify individual agencies
Commercial # From TMI: Dial "9" and the #
Commercial # From EOF: Dial "9-1-717" and the #
Toll-Free "800" # From TMI or EOF: Dial the #'s exactly as they appear below

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 315 or 9-1-800-424-7362 or 9-651-2001	☐
_____	**Cumberland County** Ext. 319 or 9-238-9676, 9-243-4121 or 9-532-8878	☐
_____	**Lebanon County** Ext. 321 or 9-272-2025 / -7621 / -2054	☐
_____	**Lancaster County** Ext. 318 or 9-664-1190 / -1200	☐
_____	**York County** Ext. 317 or 9-854-5571, 9-840-2955 or 9-1-800-427-8347	☐
_____	**Dauphin County** Ext. 320 or 9-911 or 9-558-6900	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (TMI)

[ ] York Haven Power Station
9-266-3654 or 9-818-3962
Contacted at: _____ (time: 24-hour clock)

STATE/LOCAL EVENT NOTIFICATION FORM

UTILITY MESSAGE NO. 1

EMERGENCY DIRECTOR APPROVAL: _____

PERFORM INITIAL ROLL CALL PRIOR TO TRANSMITTING – Refer to Page 3 of Form

1. CALL STATUS is:	2. This is _____
[X] This is a DRILL.	for [ ] LIMERICK / [X] PEACH BOTTOM / [ ] TMI
[ ] This is an ACTUAL EVENT.	My phone number is _____ The current time is _____. [Communicator will provide his/her NAME, PHONE NUMBER, and CURRENT TIME (in 24-hour clock) when notification is read]

3.a EMERGENCY CLASSIFICATION	b. AFFECTED UNIT(S) is/are:	d. THIS REPRESENTS A/AN:
[ ] UNUSUAL EVENT	[ ] ONE [ ] TWO [ ] THREE	[X] INITIAL DECLARATION
[X] ALERT		[ ] ESCALATION
[ ] SITE AREA EMERGENCY	c. DECLARED AT:	[ ] NO CHANGE
[ ] GENERAL EMERGENCY	TIME: 5 minutes ago *(24-hr clock)*	[ ] REDUCTION
[ ] RECOVERY	DATE: Today's Date	- IN CLASSIFICATION STATUS
[ ] TERMINATION		

4. a. EMERGENCY ACTION LEVEL (EAL) NO. is: MA 3

b. A BRIEF NON-TECHNICAL DESCRIPTION OF THE EVENT is as follows:

5. NON-ROUTINE RADIOLOGICAL RELEASE STATUS is:

[X] a. NO radiological release in-progress

[ ] b. AIRBORNE radiological release in-progress

[ ] c. LIQUID radiological release in-progress

[ ] d. Radiological release TERMINATED

6. METEOROLOGY is:

a. WIND DIRECTION is *FROM*: 15 (degrees)

b. WIND SPEED is: 12 (miles per hour)

STATE/LOCAL EVENT NOTIFICATION FORM

7. UTILITY PROTECTIVE ACTION RECOMMENDATION: (**a or b**) – No action should be taken until government officials have been notified: by State:

[**X**] a. NOT APPLICABLE *(Unusual Event, Alert, Site Area Emergency, Termination or Recovery only)*

(Complete the following for Shelter or Evacuation for a General Emergency only for the applicable station):

[ ] b. The PROTECTIVE ACTION RECOMMENDATION (PAR) from the utility is:

LGS/PBAPS

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____MILES
AND
SHELTER THE FOLLOWING SECTORS FROM _____ MILES TO _____ MILES:

[ ] N	[ ] E	[ ] S	[ ] W
[ ] NNE	[ ] ESE	[ ] SSW	[ ] WNW
[ ] NE	[ ] SE	[ ] SW	[ ] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where shelter is recommended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____MILES
AND
EVACUATE THE FOLLOWING SECTORS FROM _____ MILES TO _____ MILES:

[ ] N	[ ] E	[ ] S	[ ] W
[ ] NNE	[ ] ESE	[ ] SSW	[ ] WNW
[ ] NE	[ ] SE	[ ] SW	[ ] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

TMI

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where shelter is recommended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

8. CONCLUSION: [**X**] This is a DRILL. [ ] This is an ACTUAL EVENT.

- **PERFORM** FINAL ROLL CALL UPON COMPLETION – Refer to Page 3 of Form
- **ASK** if there are any questions regarding message or repeat backs needed
- **READ** "This concludes the notification message"
- **FAX** completed copies of all form pages to the Control Room, TSC and EOF, as applicable.
- **INFORM** the Shift Manager (Shift Emergency Director), TSC Director or EOF Director, as applicable, when notification is completed to required contacts.

STATE/LOCAL EVENT NOTIFICATION FORM

"15 Minute Notifications"

PEACH BOTTOM (CAN 833)

"Notification Line": Dial **"833"** for conference call. Stay on the line until agencies come on
"3 Digit Extensions. Make these calls from 3-digit lines.
"Commercial # From PBAPS": Make these calls from a 4-digit line. Dial "9-1-Area Code-Number"
"Commercial # From PBABS 3-digit lines: Dial "7-1-9-1-Area Code-Number"

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 216 or 9-1-800-424-7362 / 9-1-717-651-2001	☐
_____	**Maryland EMA** Ext. 205 or 9-1-410-517-3600	☐
_____	**York County** Ext. 219 or 9-1-717-854-5571	☐
_____	**Harford County** Ext. 214 or 9-1-410-638-3400 / 9-1-410-638-4900	☐
_____	**Cecil County** Ext. 234 or 9-1-410-398-2222 / 9-1-410-392-2010	☐
_____	**Lancaster County** Ext. 217 or 9-1-800-808-5236 / 9-1-717-664-1190	☐
_____	**Chester County** Ext. 218 or 9-1-610-344-5100	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (PEACH BOTTOM ONLY)

[ ] Maryland Dept. of the Environment
Emergency ext. 292 or 235
9-1-866-633-4686
Contacted at: _____ (time: 24-hour clock)

[ ] PA State Police, York Barracks
Ext. 284 or 9-1-717-428-1011
Contacted at: _____ (time: 24-hour clock)

*** NOT required within 15 minutes of Classification**

"15 Minute Notifications"

LIMERICK (CAN 841)

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 116 or 9-1-800-424-7362 or 9-1-717-651-2001	☐
_____	**Montgomery County** Ext. 117 or 9-1-610-631-6541	☐
_____	**Chester County** Ext. 118 or 9-1-610-344-5100	☐
_____	**Berks County** Ext. 119 or 9-1-610-655-4931	☐
_____	**Initial Roll Call Completed**	

"15 Minute Notifications"

TMI (CAN 44)

"Notification Line": Dial "**44**" for **all-call**. If necessary, dial 3-digit extension #'s to notify individual agencies
Commercial # From TMI: Dial "9" and the #
Commercial # From EOF: Dial "9-1-717" and the #
Toll-Free "800" # From TMI or EOF: Dial the #'s exactly as they appear below

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 315 or 9-1-800-424-7362 or 9-651-2001	☐
_____	**Cumberland County** Ext. 319 or 9-238-9676, 9-243-4121 or 9-532-8878	☐
_____	**Lebanon County** Ext. 321 or 9-272-2025 / -7621 / -2054	☐
_____	**Lancaster County** Ext. 318 or 9-664-1190 / -1200	☐
_____	**York County** Ext. 317 or 9-854-5571, 9-840-2955 or 9-1-800-427-8347	☐
_____	**Dauphin County** Ext. 320 or 9-911 or 9-558-6900	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (TMI)

[ ] York Haven Power Station
9-266-3654 or 9-818-3962
Contacted at: _____ (time: 24-hour clock)

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-340CA
COURSE:	Licensed Operator Requalification	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	Evaluation of High CRD Temperature on Control Rod Scram Time (SRO)		

APPROVALS:

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ Last First M.I.	ISSUE DATE: _____	
EMPLOYEE ID NO. _____	COMPLETION DATE: _____	
COMMENTS:		
Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2011050402 / PLOR-340CA K/A: G2.1.32
SRO: 4.0

TASK DESCRIPTION: Review AO 3.8 Attachment 1 for High CRD Temperature

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. AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time"

2. Calculator

C. REFERENCES

1. AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time"

D. TASK STANDARD

1. Satisfactory task completion is indicated when Control Rod 18-55 is declared SLOW and AO 3.8 is complete.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, complete the Shift Management review of the in-progress AO 3.8 for Control Rod 18-55. 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 is at 100% power.

2. Control Rod 18-55 temperature is 405 °F and cannot be lowered.

3. System Manager has provided the latest Scram Time data for CR 18-55:

   Position 06 - 2.599 Sec
   Position 26 – 1.396 Sec
   Position 36 – 0.844 Sec
   Position 46 – 0.343 Sec

4. There are NO control rods currently declared SLOW

5. AO 3.8 has been completed through and including Step 4.7.

G. INITIATING CUE

As the Control Room Supervisor, review Attachment 1 of AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time" for Unit 3 Control Rod 18-55 and complete AO 3.8. (HAND THE SRO CANDIDATE THE IN-PROGRESS COPY OF AO 3.8 WITH ATTACHMENT 1 COMPLETE THROUGH THE IV.)

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Review AO 3.8 up to and including step 4.6.	P	AO 3.8, "Evaluation of High CRD Temperature on Control Rod Scram Time" is reviewed.
****** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**			
*2	Recognize that Scram Time for Control Rod 18-55 is unacceptable (CUE: If informed, acknowledge as appropriate)	P	Scram time for position(s) 46, 36, and/or 26 are recognized to be greater than Tech Spec allowance.
*3	DECLARE Control Rod 18-55 "slow" (CUE: If informed, acknowledge as appropriate)	P	Control Rod 18-55 declared slow
*4	VERIFY Compliance with Technical Specifications 3.1.3 AND 3.1.4.	P	TS 3.1.3 and 3.1.4 reviewed, some indication of log entry is made for PTSA for TS 3.1.4 (with no rods currently SLOW, PTSA is appropriate)
5	Verify an Issue Report is generated for Control Rod 18-55. (Cue: IR generated)	P	Issue Report generated or task to generate issue has been assigned.
6	Notify System Manager of status of Control Rod 18-55 (Cue: As System Manager, acknowledge report)	P	System Manager notified
7	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 Control Rod 18-55 is declared SLOW and AO 3.8 is complete, the evaluator will terminate the exercise.

Exelon Nuclear
Peach Bottom Units 2 and 3

AO 3.8 EVALUATION OF HIGH CRD TEMPERATURE ON CONTROL ROD SCRAM TIME

1.0 PURPOSE

This procedure provides the instructions necessary to evaluate the impact of high CRD hydraulic temperature on control rod scram time, as recommended by GE SILs 173 and 173S1, to ensure compliance with Technical Specifications 3.1.3 and 3.1.4.

2.0 PREREQUISITES

2.1 CRD hydraulic temperature has reached OR exceeded 350°F.

3.0 PRECAUTIONS

3.1 High CRD hydraulic temperature may result in the associated control rod being declared slow in accordance with Technical Specification 3.1.4. Technical Specifications 3.1.3 AND 3.1.4 should be reviewed when this procedure is entered.

4.0 PERFORMANCE STEPS

NOTES

1. The control rod scram times for Positions 46, 36, 26, and 06 for the associated control rod will be obtained from copies located in the System Status Files of the last performance of either ST-R-003-475-2(3), ST-R-003-485-2(3) or ST-R-003-495-2(3), OR from the control rod scram time database located on computer drive S:\Scram Time\scramtime.mdb.
2. The last performance of ST-R-003-475-2(3), ST-R-003-485-2(3), or ST-R-003-495-2(3) is reviewed first to determine if the associated control rod was included in the scope of testing. If so, the necessary scram times will be obtained from this source since the control rod scram time database may not have been updated to reflect the latest scram time data.
3. IF the associated control rod was NOT included in the scope of testing for the last performance of ST-R-003-475-2(3), ST-R-003-485-2(3), or ST-R-003-495-2(3), THEN the necessary scram times will be obtained from the control rod scram time database.
4. Attachment 1, "Control Rod Scram Time Impact Calculation", will be used to document performance of this procedure.

4.1 IF CRD hydraulic temperature can not be lowered below 350° F, THEN **RECORD** the associated Unit, control rod number

AND CRD hydraulic temperature on Attachment 1 pages 6, 7, 8, and 9.

4.2 **OBTAIN** the control rod scram times for Positions 46, 36, 26, AND 06 for the associated control rod as follows:

1.0 IF the control rod was scram timed in the last performance of ST-R-003-475-2(3), ST-R-003-485-2(3) OR ST-R-003-495-2(3) during the current operating cycle, THEN **RECORD** the control rod scram times documented in the Surveillance Test in the appropriate location in Attachment 1 pages 6, 7, 8, and 9.

2.0 IF the control rod was NOT timed in the last performance of the Surveillance Tests in the previous step, THEN **OBTAIN** the latest control rod scram times during the current operating cycle from the control rod scram time database located on computer drive S:\Scram Time\scramtime.mdb AND **RECORD** in the appropriate location in Attachment 1 pages 6, 7, 8, and 9.

3.0 IF the control rod scram time for the current operating cycle could not be obtained by one of the previous steps, THEN **CONTACT** Engineering AND **OBTAIN** the latest control rod scram times during the current operating cycle AND **RECORD** in the appropriate location in Attachment 1 pages 6, 7, 8, and 9.

4.3 **DETERMINE** the Position 46(36, 26, 06) Penalty using Table 1(2, 3, 4) on page 6(7, 8, 9) AND **RECORD** in the appropriate location in Attachment 1.

4.4 **ADD** the Position 46(36, 26, 06) control rod scram time to the Position 46(36, 26, 06) penalty to determine the temperature corrected Position 46(36, 26, 06) control rod scram time AND **RECORD** in the appropriate location in Attachment 1.

4.5 **RECORD** the Maximum Notch 46(36, 26, 06) Scram Time allowed by Tech Spec Table 3.1.4-1 in the appropriate location in Attachment 1.

4.6 **DIRECT** that an Independent Verification be performed for all entries on Attachment 1 AND **DOCUMENT** in the appropriate location in Attachment 1.

4.7 **DIRECT** Reactor Engineering to perform ST-R-003-480-2(3), "Average Scram Time For ODYN/B Minimum Critical Power Ratio (MCPR) requirements," within 72 hours.

Person Contacted: ***R. E. Manager***

Time: ***hh:mm*** Date: ***Today's Date***

4.8 **DETERMINE** if the temperature corrected Position 46(36, 26, 06) control rod scram time is greater than the Maximum Notch 46(36, 26, 06) Scram Time allowed by Tech Spec Table 3.1.4-1.

1.0 IF ALL temperature corrected control rod scram times are less than OR equal to the Maximum Notch Scram Time allowed by Tech Spec Table 3.1.4-1, THEN **GO** to Step 4.11. OTHERWISE, N/A.

2.0 IF ANY temperature corrected control rod scram time is greater than the Maximum Notch Scram Time allowed by Tech Spec Table 3.1.4-1, THEN **GO** to Step 4.9. OTHERWISE, N/A.

4.9 IF ANY temperature corrected control rod scram time is greater than the Maximum Notch Scram Time allowed by Tech Spec Table 3.1.4-1, THEN **DECLARE** the control rod "slow" AND **COMPLY** with Technical Specifications 3.1.3 AND 3.1.4. OTHERWISE, N/A.

4.10 IF ANY control rod scram time is greater than 7 seconds to notch position 06, THEN **DECLARE** the control rod inoperable AND **COMPLY** with Technical Specification 3.1.3. OTHERWISE, N/A.

CAUTIONS

1. In accordance with Technical Specification 3.1.4, specific combinations of "slow" control rods require a plant shutdown. The intent of the following step is to ensure any temperature correction for a control rod that has the POTENTIAL to require a plant shutdown is verified since a plant shutdown either will be, or will not be, performed based on the calculation.
2. The following step is not intended to restrain performance of a plant shutdown if required by Technical Specification 3.1.4.

4.11 REGARDLESS of whether or not the rod was evaluated as slow, IF the control rod is adjacent to another "slow" control rod OR IF 12 other control rods have already been declared

"slow", THEN IMMEDIATELY **NOTIFY** the EDM AND **DIRECT** that Engineering IMMEDIATELY verify the accuracy of the temperature corrected control rod scram time calculation. OTHERWISE, N/A.

4.12 **DOCUMENT** Shift Management review of Attachment 1.

4.13 **INITIATE** an Issue to correct the high CRD temperature condition.

4.14 **NOTIFY** the CRD System Manager that AO 3.8 has been performed AND **FORWARD** Attachment 1 to the System Manager.

5.0 CONTROL STATIONS

5.1 None

6.0 REFERENCES

6.1 GE SIL 173

6.2 GE SIL 173S1, Revision 1

7.0 TECHNICAL SPECIFICATIONS

7.1 3.1.3

7.2 3.1.4

8.0 INTERFACING PROCEDURES

8.1 ARC 2(3)11 G-5, "CRD Hydraulic Hi Temp"

8.2 ST-R-003-475-2(3), "CRD Scram Insertion Timing Following Reactor Scram"

8.3 ST-R-003-485-2(3), "CRD Scram Insertion Timing of Selected Control Rods"

8.4 ST-R-003-495-2(3), "CRD Scram Insertion Timing of Selected Control Rods During Hydro"

Attachment 1: Control Rod Scram Time Impact Calculation — Initial/Date

(Step 4.1) Unit: 3

Associated control rod: 18-55 — URO /Today

Record the CRD Temperature: 405 °F — URO /Today

Position 46 Scram Time Penalty Calculation

(Step 4.2) Position 46 Scram Time: 0.343 sec — URO /Today

(Step 4.3) Position 46 Penalty (from Table 1 below): 0.35 sec — URO /Today

(Step 4.4) Determine the Temperature Corrected Position 46 Control Rod Scram Time by adding the Position 46 Scram Time and Position 46 Penalty: 0.693 sec — URO /Today

(Step 4.5) Maximum Notch Position 46 Scram Time allowed by Tech Spec Table 3.1.4-1: 0.44 sec — URO /Today

Table 1: GE SIL 173 Position 46 Penalty

CRD Temp	Position 46 Penalty
≥ 350° F and < 400° F	0.07 sec
≥ 400° F	0.35 sec

(Step 4.6) Position 46 temperature corrected Control Rod Scram Time Independent Verification performed by: IVR /Today
I.V.

Attachment 1: Control Rod Scram Time Impact Calculation — Initial/Date

(Step 4.1) Unit: 3

Associated control rod: 18-55 — URO /Today

Record the CRD Temperature: 405 °F — URO /Today

Position 36 Scram Time Penalty Calculation

(Step 4.2) Position 36 Scram Time: 0.844 sec — URO /Today

(Step 4.3) Position 36 Penalty (from Table 2 below): 0.60 sec — URO /Today

(Step 4.4) Determine the Temperature Corrected Position 36 Control Rod Scram Time by adding the Position 36 Scram Time and Position 36 Penalty: 1.444 sec — URO /Today

(Step 4.5) Maximum Notch Position 36 Scram Time allowed by Tech Spec Table 3.1.4-1: 1.08 sec — URO /Today

Table 2: GE SIL 173 Position 36 Penalty

CRD Temp	Position 36 Penalty
≥ 350° F and < 400° F	0.14 sec
≥ 400° F	0.60 sec

(Step 4.6) Position 36 temperature corrected Control Rod Scram Time Independent Verification performed by: IVR /Today
I.V.

Attachment 1: Control Rod Scram Time Impact Calculation | Initial/Date

(Step 4.1) Unit: 3

Associated control rod: 18-55 URO /Today

Position 26 Scram Time Penalty Calculation

(Step 4.2) Position 26 Scram Time: 1.396 sec URO /Today

(Step 4.3) Position 26 Penalty
(from Table 3 below): 0.70 sec URO /Today

(Step 4.4) Determine the Temperature Corrected Position 26 Control Rod Scram Time by adding the Position 26 Scram Time and Position 26 Penalty: 2.096 sec URO /Today

(Step 4.5) Maximum Notch Position 26 Scram Time allowed by Tech Spec Table 3.1.4-1: 1.83 sec URO /Today

Table 3: GE SIL 173 Position 26 Penalty

CRD Temp	Position 26 Penalty
$\geq$ 350° F and < 400° F	0.17 sec
$\geq$ 400° F	0.70 sec

(Step 4.6) Position 26 temperature corrected Control Rod Scram Time Independent Verification performed by: IVR /Today
I.V.

Attachment 1: Control Rod Scram Time Impact Calculation — Initial/Date

(Step 4.1) Unit: 3

Associated control rod: 18-55 — URO /Today

Record the CRD Temperature: 405 °F — URO /Today

Position 06 Scram Time Penalty Calculation

(Step 4.2) Position 06 Scram Time: 2.599 sec — URO /Today

(Step 4.3) Position 06 Penalty (from Table 4 below): 0.70 sec — URO /Today

(Step 4.4) Determine the Temperature Corrected Position 06 Control Rod Scram Time by adding the Position 06 Scram Time and Position 06 Penalty: 3.299 sec — URO /Today

(Step 4.5) Maximum Notch Position 06 Scram Time allowed by Tech Spec Table 3.1.4-1: 3.35 sec — URO /Today

Table 4: GE SIL 173 Position 06 Penalty

CRD Temp	Position 06 Penalty
≥ 350° F and < 400° F	0.15 sec
≥ 400° F	0.70 sec

(Step 4.6) Position 06 temperature corrected Control Rod Scram Time Independent Verification performed by: IVR /Today
I.V.

(Step 4.12) Shift Management review of Attachment 1 pages 6, 7, 8, and 9 performed by: _____/_____

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-252C
COURSE:	Licensed Operator Requalification	REV #::	002
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	Compliance with Asymmetric Feedwater Heating Operation (AFTO) – SRO Version		

APPROVALS:

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)	ISSUE DATE: _____	
EMPLOYEE I.D. NO._____	COMPLETION DATE: _____	
COMMENTS:		
Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2590360402 / PLOR-252C K/A: **G2.1.7** SRO: 4.7

TASK DESCRIPTION: Asymmetric Feedwater Temperature Operation (AFTO)

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. AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)"
2. RE-41 "Installation/Verification of the 3D Monicore Thermal Operating Limits"
3. Calculator
4. Technical Specification 3.2
5. PLOR252C At 2 – Prepared RE-41 Attachment 1

C. REFERENCES

1. AO 6.7-2, Rev. 6 "Asymmetric Feedwater Temperature Operation (AFTO)"
2. RE-41, Rev. 9 "Installation/Verification of the 3D Monicore Thermal Operating Limits"

D. TASK STANDARD

1. Satisfactory task completion is indicated when steps 1.1 through 2.3.3 of Attachment 2 of AO 6.7-2, Asymmetric Feedwater Temperature Operation (AFTO), are properly completed.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to assure compliance with regulations during asymmetric feedwater temperature operation 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 was at 100% power when it experienced a loss of feedwater heating.

2. OT-104 "Positive Reactivity Insertion" was entered and reactor power was lowered to 89% power and is presently stable.

3. It was determined that feedwater heating is asymmetric and procedure AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)" was entered.

4. PMS Computer point NSS018 is INVALID.

5. All reactor feedwater pumps are in service.

6. Feedwater temperatures as read on TR-2151 are as follows:

   'A' feedwater temperature = 279 degrees F
   'B' feedwater temperature = 280 degrees F
   'C' feedwater temperature = 282 degrees F

G. INITIATING CUE

The Control Room Supervisor directs you, an extra SRO on shift, to perform Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements" of AO 6.7-2 "Asymmetric Feedwater Temperature Operation".

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of AO 6.7-2. (Cue: Provide a copy of AO 6.7-2 to the Examinee)	P	AO 6.7-2 "Asymmetric Feedwater Temperature Operation (AFTO)" is obtained. AO 6.7-2, Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", is referenced.
2	Determine that second bullet of step 1.1 of Attachment 2 of AO 6.7-2 is applicable since PMS Computer point NSS018 is INVALID. (Cue: If necessary, repeat Task/Prerequisite Condition that PMS Computer point NSS018 is INVALID.)	P	Determine that average feedwater temperature has to be calculated using Attachment 2 Exhibit 1 of AO 6.7-2. Sign-off Attachment 2 Exhibit 1. Mark first part of step 1.1 of Attachment 2 of AO 6.7-2 as "N/A".
*3	Calculate average feedwater temperature value using Attachment 2 Exhibit 1 "Determining Feedwater Injection Temperature Using TR-2151". (Cue: If necessary, repeat Task/Prerequisite Conditions that: A FW temperature = 279 degrees F B FW temperature = 280 degrees F C FW temperature = 282 degrees F, and that all reactor feedwater pumps are in service.)	P	Since PMS Computer point NSS018 is INVALID, per step 1.1 of AO 6.7-2 the Examinee will use Attachment 2 Exhibit 1 "Determining Feedwater Injection Temperature Using TR-2151" to calculate the average feedwater temperature value. Examinee inserts values of 279, 280 and 282 degrees F respectively into Exhibit 1. The average feedwater injection temperature with 3 in-service reactor feedwater pumps is determined to be 280.3 degrees F.
*4	Determine that 55 °F feedwater temperature reduction is applicable by reviewing RE-41, Att 1 (Cue: Provide prepared copy of PLOR252C AT 2 - RE-41, Att 1, indicating that 55 °F feedwater temperature reduction IS allowed and 90 °F Feedwater temperature reduction is NOT allowed)	P	Candidate references RE-41, Att 1 to determine that 55 °F feedwater temperature reduction IS allowed.
5	Identify that Section 2.0 (of Att 2) IS applicable	P	Candidate identifies Section 2.0 of Att 2 is applicable (See step 1.2)

STEP NO	STEP	ACT	STANDARD
6	Identify that Section 3.0 (of Att 2) IS NOT applicable	P	Candidate identifies Section 3.0 of Att 2 is NOT applicable (See step 1.2)
*7	Determine that Unit 2 is operating in the TSA Region of Attachment 2, Figure 1 "Feedwater Temperature Limits" (Cue: If necessary, repeat Task/Prerequisite Condition that Unit 2 is at 89% reactor power and stable.)	P	Compare the feedwater temperature determined above (280.3 degrees F) against the Feedwater Temperature Reduction Region Curve located on Attachment 2, Figure 1 "Feedwater Temperature Limits" of AO 6.7-2. Examinee should plot 280.3 degrees F at 3127 MWth (0.89 times 3514 MWth) on Attachment 2, Figure 1.
8	Notify Shift Management and Reactor Engineering. (Cue: acknowledge communication)	P	Notify Shift Management and the Reactor Engineering group of being in the TSA Region of Attachment 2, Figure 1 "Feedwater Temperature Limits" either face-to-face or by telephone.
*9	Enter the required actions for Technical Specification LCOs 3.2.1, 3.2.2, 3.2.3 (Cue: acknowledge entry into the LCOs)	P	As required by AO 6.7-2, Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", step 1.4.2, Tech. Spec. LCOs 3.2.1, 3.2.2, 3.2.3 are entered. All three LCOs require that thermal limits (APLHGR, MCPR, and LHGR) are restored within 2 hours. If not restored within 2 hours, reduce thermal power $\leq$ 25% within 4 hours.

STEP NO	STEP	ACT	STANDARD
10	Recognize that within the 2 hour Tech. Spec. limit, restore feedwater temperature by either: Returning isolated feedwater heaters to service using AO 1E.2-2 "Placing Feedwater Heaters In-Service after A Heater Isolation", OR Isolating any non-symmetric feedwater heater string using AO 5.6-2 "Removing And Restoring A Feedwater Heater String To Service". OR Reduce reactor power to less thatn 25% RTP within the Tech Spec time limit (Cue: acknowledge required actions)	P	NOTE: step 2.3.3 of AO 6.7-2, Attachment 2 is a recognition step ONLY and cannot be performed for the purposes of this JPM AO 6.7-2, Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", step 1.4.3, requires performance of returning isolated feedwater heaters to service using AO 1E.2-2 "Placing Feedwater Heaters In-Service after A Heater Isolation", OR Isolating any non-symmetric feedwater heater string using AO 5.6-2 "Removing And Restoring A Feedwater Heater String To Service", due to being in the TSA Region of Attachment 2, Figure 1 "Feedwater Temperature Limits.
11	Inform Control Room Supervisor of completion of Attachment 2 "Feedwater Temperature Reduction Monitoring Requirements" of AO 6.7-2. (Cue: acknowledge communication.)	P	Control room Supervisor is notified of task completion.
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 steps 1.1 through 2.3.2 of Attachment 2, "Feedwater Temperature Reduction Monitoring Requirements", of AO 6.7-2 are completed and it is recognized that step 2.3.3 needs to be performed, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

ATTACHMENT 1

3D Monicore Installed Thermal Limits
(Check one column for each Operational Condition)

Unit 2

Operational Condition	ALLOWED (Thermal Operating Limits Implemented AND operation allowed at this time in the cycle)	NOT ALLOWED (Thermal Operating Limits NOT Implemented OR operation not allowed at this time in the cycle)
Increased Core Flow (>100% to ≤110% of rated)	✓	
55° Feedwater Temperature Reduction	✓	
90° Feedwater Temperature Reduction		✓

Prepared By: R. Eng / Today
By /Date

IV: Other R. Eng / Today
By /Date

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-242C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	001
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	DETERMINATION OF REQUIRED POST-MAINTENANCE TESTING		

APPROVALS:

_____ _____
Signature / Title Date

_____ _____
Signature / Title Date

_____ _____
Signature / Title Date

_____ _____
Signature / Title Date

APPROVED FOR USE: _____ _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____
Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2980190201 / PLOR-242C K/A: G2.2.21
SRO: 3.5

TASK DESCRIPTION: Determination of Required Post-Maintenance Testing

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. MA-AA-716-012, Rev. 011,"Post Maintenance Testing"

2. RT-O-023-760-2, Rev. 010, "HPCI Valve and Component Test from Alternative Control Panel"

3. ST-O-023-301-2, Rev. 053, "HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test"

4. ST-O-023-350-2, Rev. 004, "HPCI Valve Alignment and Filled and Vented Verification"

5. ST-O-023-501-2, Rev. 009. "HPCI Valves Remote Position Indication Verification"

6. ST-O-094-400-2, Rev. 003, "Stroke Time Testing of Valves for Post Maintenance Testing"

7. Attachment 2 of this JPM "PIMS IST Pump and Valve Testing Data"

C. REFERENCES

1. MA-AA-716-012, Rev. 011,"Post Maintenance Testing"

2. ST-O-023-301-2, Rev. 052, "HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test"

3. ST-O-023-501-2, Rev. 008. "HPCI Valves Remote Position Indication Verification"

4. ST-O-094-400-2, Rev. 002, "Stroke Time Testing of Valves for Post Maintenance Testing"

D. TASK STANDARD

1. Satisfactory task completion is indicated when the appropriate post maintenance testing requirements for AO-2-23-40, and the associated surveillance test performance steps which are required to be performed, are determined.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to determine post maintenance testing requirements 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. Limit switch adjustments were performed on AO-2-23-40 "HPCI Gland Seal Condensate Pump Outboard Discharge Isolation Valve to Radwaste."

2. The associated Work Order only requires performance of ST-O-023-501-2, "HPCI Valves Remote Position Indication Verification", for post maintenance testing.

G. INITIATING CUE

The Shift Manager directs you to:

1. Determine additional post maintenance testing requirements, if any, for AO-2-23-40 "HPCI Gland Seal Condensate Pump Outboard Discharge Isolation Valve to Radwaste," using MA-AA-716-012, "Post Maintenance Testing,"

   AND

2. If additional post maintenance testing is required, determine which test performance section steps are required to be performed (circle selected steps).

H. PERFORMANCE CHECKLIST

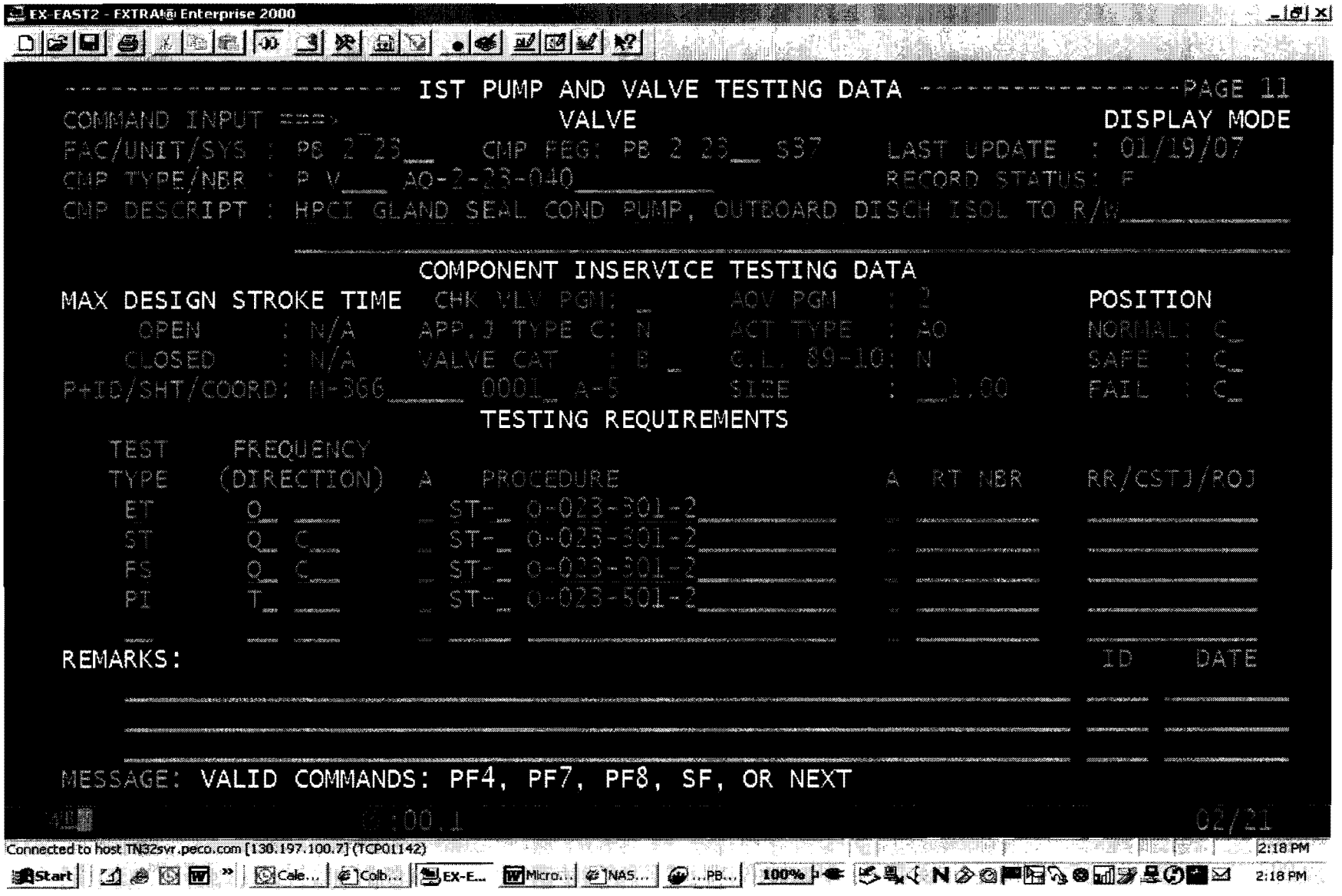
STEP NO	STEP	ACT	STANDARD
	CUE: Provide the candidate with the following: • **PIMS IST Pump and Valve Testing Data (Attachment 2 of this JPM).** • **MA-AA-716-012, Rev. 011,"Post Maintenance Testing"** • **RT-O-023-760-2, Rev. 010, "HPCI Valve and Component Test from Alternative Control Panel"** • **ST-O-023-301-2, Rev. 052, "HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test"** • **ST-O-023-350-2, Rev. 004, "HPCI Valve Alignment and Filled and Vented Verification"** • **ST-O-023-501-2, Rev. 008, "HPCI Valves Remote Position Indication Verification"** • **ST-O-094-400-2, Rev. 002, "Stroke Time Testing of Valves for Post Maintenance Testing"** **(2 additional tests have been included as possible distractors to the Examinee)**		
*1	Determine that BOTH a Functional Stroke and a Stroke Time Test are required due to limit switches being adjusted.	P	References MA-AA-716-012, Attachment 3, AOV Post Maintenance Test Matrix, (bottom of page 3 of 3).
2	Identify that ST-O-023-301-2, "HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test", is the governing IST Surveillance.	P	Using Attachment 2 of this JPM, PIMS printout "IST Pump and Valve Testing Data," determines that ST-O-023-301-2 is the governing IST Surveillance.
	*****NOTE TO EVALUATOR***** **Step 3 below is only applicable if the Examinee decides to perform a partial of ST-O-023-301-2 as the means to document the post maintenance test of AO-2-23-40.**		
*3	Identify the following performance section steps of ST-O-023-301-2, "HPCI Pump, Valve, Flow and Unit Cooler Functional and In-Service Test", need to be performed: 6.1.47 or 6.1.49 and 6.1.50	P	Reviews ST-O-023-301-2 and determines (circles) steps 6.1.47 or 6.1.49 and 6.1.50 need to be performed, at a minimum, in order to stroke test AO-2-23-40. It is also acceptable to identify steps 6.1.46 through 6.1.52 to be performed as long as steps 6.1.47 or 6.1.49 and 6.1.50 are included.

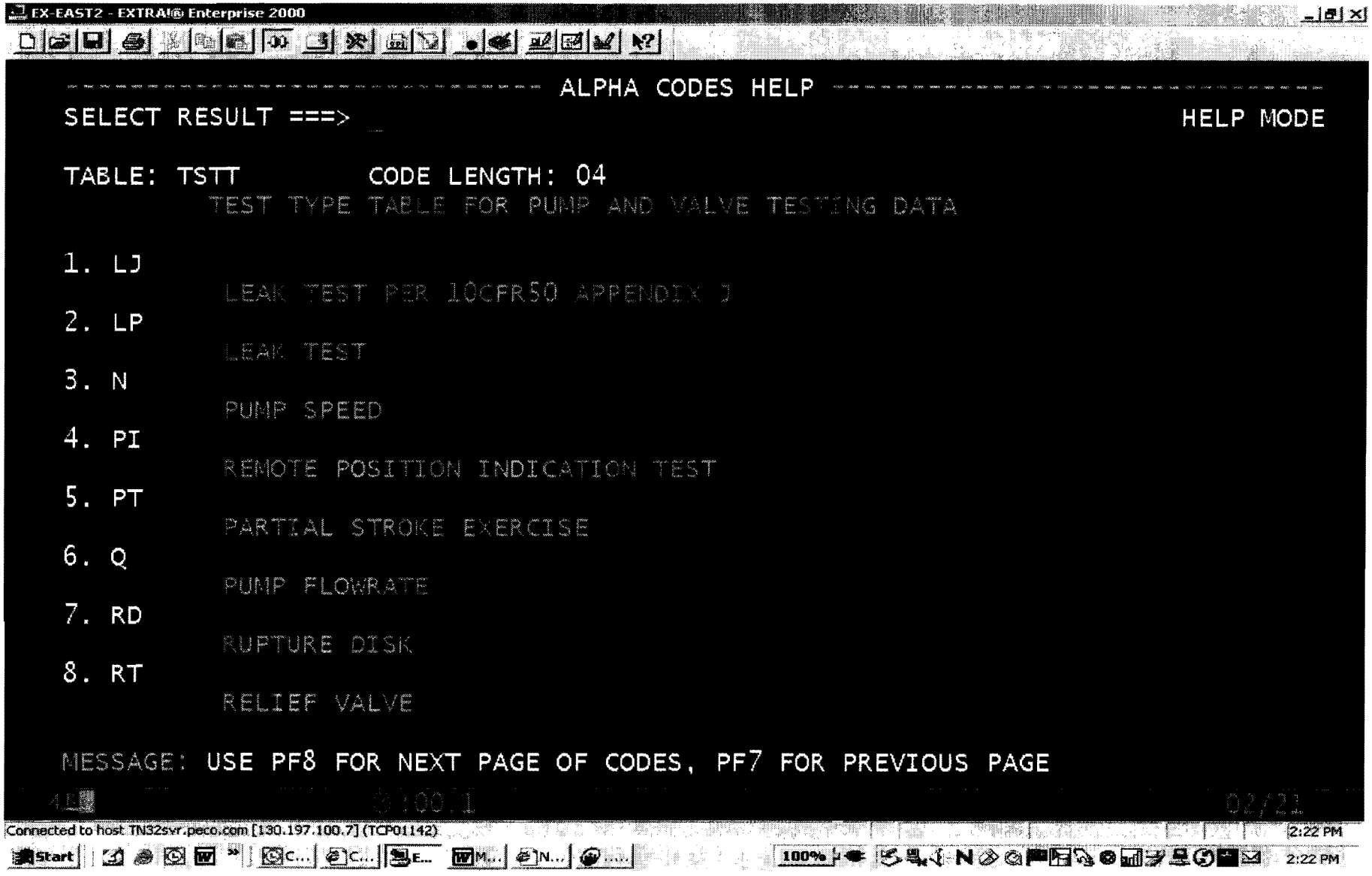
STEP NO	STEP	ACT	STANDARD
	NOTE TO EVALUATOR **Step 4 below is only applicable if the Examinee decides to perform ST-O-094-400-2 as the means to document the post maintenance test of AO-2-23-40.**		
*4	Identify that all performance steps of ST-O-094-400-2, "Stroke Time Testing of Valves for Post Maintenance Testing," will need to be performed.	P	Review ST-O-094-400-2, Rev. 1. Identify that all performance section steps will need to be performed in order to stroke test AO-2-23-40.
5	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.

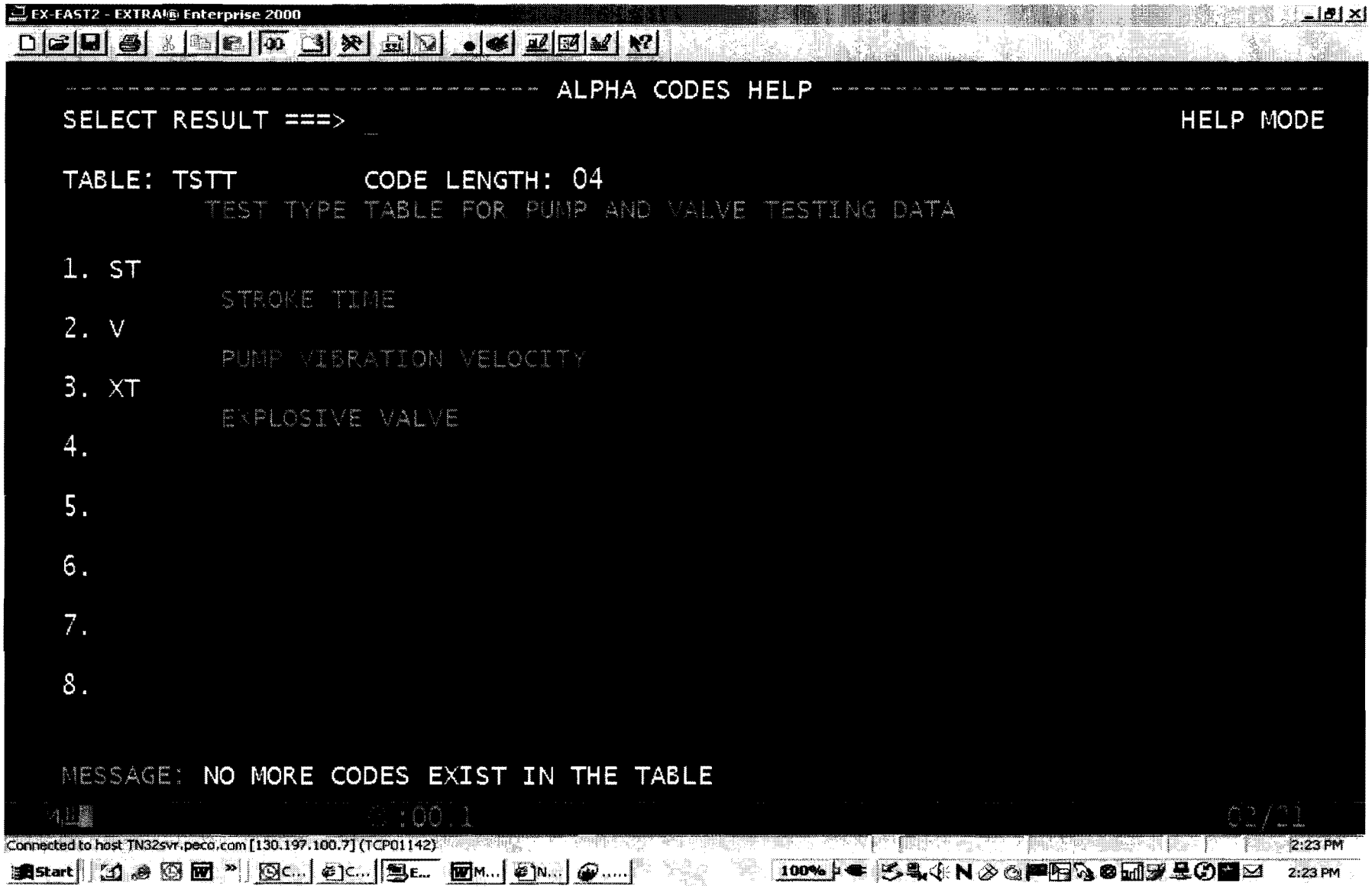
Under "ACT" P - must perform
S - must simulate

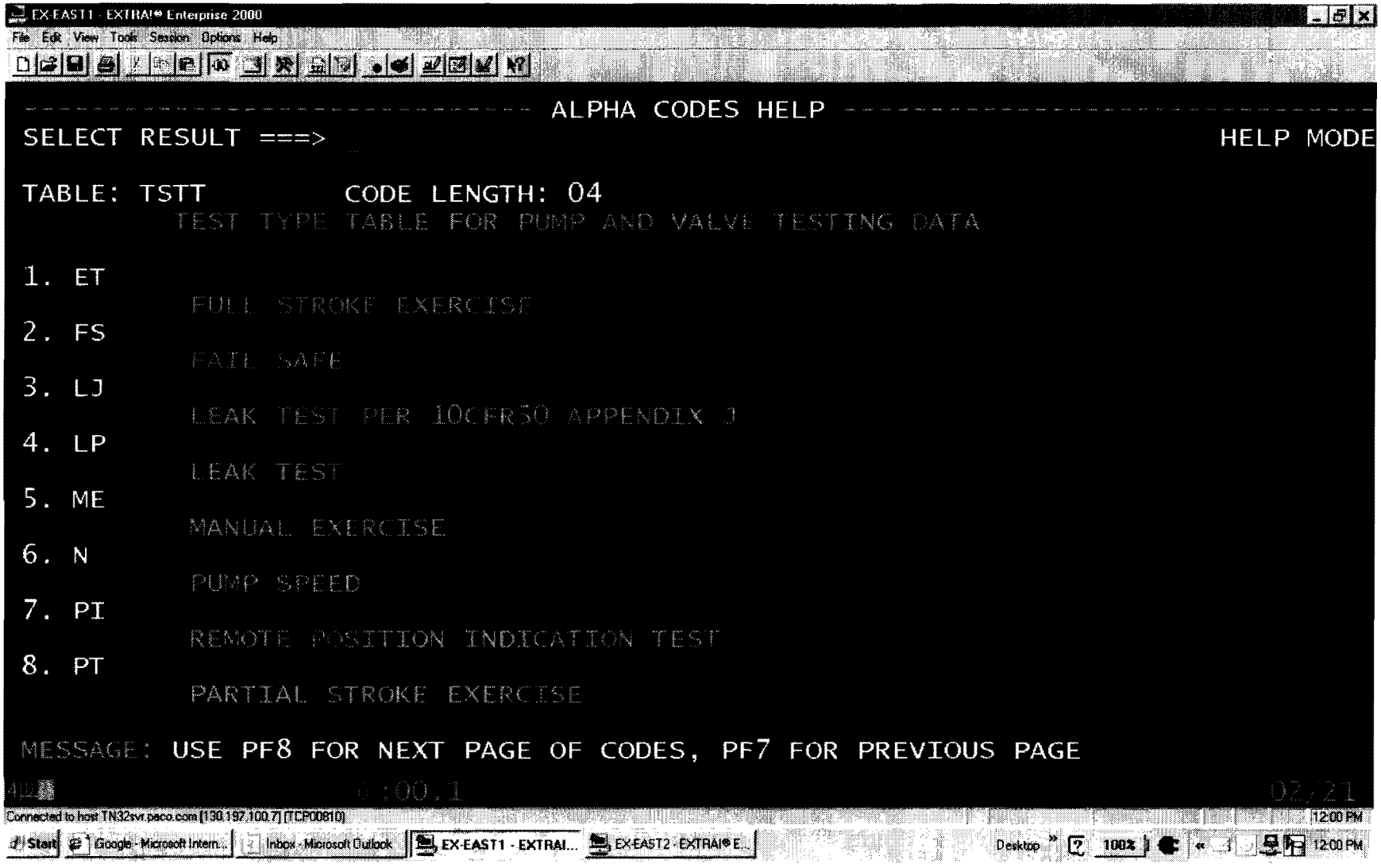
I. TERMINATING CUE

When post maintenance testing requirements for AO-2-23-40 and the associated surveillance test performance steps are determined the Shift Manager should be informed. The evaluator will then terminate the exercise.


EX-EAST2 - EXTRA!@ Enterprise 2000
IST PUMP AND VALVE TESTING DATA
PAGE 11
COMMAND INPUT ===>
VALVE
DISPLAY MODE
FAC/UNIT/SYS : PB 2 23
CMP REG: PB 2 23 S37
LAST UPDATE : 01/19/07
CMP TYPE/NBR : P V AO-2-23-040
RECORD STATUS: F
CMP DESCRIPT : HPCI GLAND SEAL COND PUMP, OUTBOARD DISCH ISOL TO R/W
COMPONENT INSERVICE TESTING DATA
MAX DESIGN STROKE TIME
OPEN : N/A
CLOSED : N/A
P+ID/SHT/COORD: M-306 0001 A-5
CHK VLV PGM:
APP.J TYPE C: N
VALVE CAT : B
AOV PGM : 2
ACT TYPE : AO
C.L. 89-10: N
SIZE : 1.00
POSITION
NORMAL: C
SAFE : C
FAIL : C
TESTING REQUIREMENTS
TEST TYPE
FREQUENCY (DIRECTION)
A
PROCEDURE
A
RT NBR
RR/CSTJ/ROJ
ET O
ST O C ST- O-023-301-2
FS O C ST- O-023-301-2
PI T ST- O-023-501-2
REMARKS:
ID
DATE
MESSAGE: VALID COMMANDS: PF4, PF7, PF8, SF, OR NEXT
02/21
Connected to host TN32svr.peco.com [130.197.100.7] (TCP01142)
2:18 PM
Start
2:18 PM


EX-EAST2 - EXTRA!® Enterprise 2000
ALPHA CODES HELP
SELECT RESULT ===>
HELP MODE
TABLE: TSTT CODE LENGTH: 04
TEST TYPE TABLE FOR PUMP AND VALVE TESTING DATA
1. LJ
LEAK TEST PER 10CFR50 APPENDIX J
2. LP
LEAK TEST
3. N
PUMP SPEED
4. PI
REMOTE POSITION INDICATION TEST
5. PT
PARTIAL STROKE EXERCISE
6. Q
PUMP FLOWRATE
7. RD
RUPTURE DISK
8. RT
RELIEF VALVE
MESSAGE: USE PF8 FOR NEXT PAGE OF CODES, PF7 FOR PREVIOUS PAGE
Connected to host TN32svr.peco.com [130.197.100.7] (TCP01142)
Start
2:22 PM


EX-EAST2 - EXTRA! Enterprise 2000
ALPHA CODES HELP
SELECT RESULT ===>
HELP MODE
TABLE: TSTT CODE LENGTH: 04
TEST TYPE TABLE FOR PUMP AND VALVE TESTING DATA
1. ST
STROKE TIME
2. V
PUMP VIBRATION VELOCITY
3. XT
EXPLOSIVE VALVE
4.
5.
6.
7.
8.
MESSAGE: NO MORE CODES EXIST IN THE TABLE
Connected to host TN32svr.peco.com [130.197.100.7] (TCP01142)
2:23 PM
Start
100%
2:23 PM


EX-EAST1 - EXTRA!® Enterprise 2000
File Edit View Tools Session Options Help
ALPHA CODES HELP
SELECT RESULT ===>
HELP MODE
TABLE: TSTT CODE LENGTH: 04
TEST TYPE TABLE FOR PUMP AND VALVE TESTING DATA
1. ET
FULL STROKE EXERCISE
2. FS
FAIL SAFE
3. LJ
LEAK TEST PER 10CFR50 APPENDIX J
4. LP
LEAK TEST
5. ME
MANUAL EXERCISE
6. N
PUMP SPEED
7. PI
REMOTE POSITION INDICATION TEST
8. PT
PARTIAL STROKE EXERCISE
MESSAGE: USE PF8 FOR NEXT PAGE OF CODES, PF7 FOR PREVIOUS PAGE
Connected to host TN32svr.paco.com [130.197.100.7] (TCP00810)
12:00 PM
Start
Google - Microsoft Intern...
Inbox - Microsoft Outlook
EX-EAST1 - EXTRA!...
EX-EAST2 - EXTRA!® E...
Desktop
100%
12:00 PM

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-215C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	003
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	REVIEW AND AUTHORIZE ISSUANCE OF THYROID BLOCKING AGENT (KI)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE:

_____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:

LMS ENTRY:

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2007560502 / PLOR-215C K/A: G2.3.4
SRO: 3.7

TASK DESCRIPTION: REVIEW AND AUTHORIZE ISSUANCE OF THYROID BLOCKING AGENT (KI)

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. EP-AA-113, Personnel Protective Actions

2. EP-AA-113-F-03, Thyroid Blocking Agent Authorization Form completed with the exception of the Station Emergency Director authorization.

3. EP-AA-1007, Radiological Emergency Plan Annex for Peach Bottom Atomic Power Station

4. EP-AA-114-F-01, Release in Progress Determination Guidance

5. Procedure index for EP procedures.

6. Worker history descriptions.

C. REFERENCES

1. EP-AA-112-100-F-01, Rev. K, "Shift Emergency Director Checklist"

2. EP-AA-113, Rev. 10, "Personnel Protective Actions"

3. EP-AA-113-F-03, Rev. C, "Thyroid Blocking Agent Authorization"

4. EP-AA-1007, Rev 018, Radiological Emergency Plan Annex for Peach Bottom Atomic Power Station

5. EP-AA-114-F-01, Rev D, Release in Progress Determination Guidance

D. TASK STANDARD

1. Satisfactory completion of this task is indicated when the Emergency Director has reviewed and denied the issuance of Thyroid Blocking Agent.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, review the information provided including the Thyroid Blocking Agent Authorization and make the decision as to whether to authorize the issuance of Thyroid Blocking Agent. I will describe the initial conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. Unit 2 experienced a LOCA transient that resulted in a Site Area Emergency declaration.

2. A small steam leak continues to exist in the Turbine Building due to failure of both Inboard and Outboard MSIVs in the B line to close.

3. Reactor power is 2.34 E-5% and dropping.

4. RPV level is -120 inches and steady. Lowest RPV level during the transient was -160 inches.

5. RPV pressure is 800 psig and dropping slowly.

6. Primary Containment pressure on PR-2508 is 8 psig and lowering slowly due to Drywell sprays in service. Highest observed Primary Containment pressure was 13 psig.

7. Primary Containment radiation on RI-8103A-D is 5.0 Rem/hour, the highest observed to this point.

8. Field Monitoring Teams have been mobilized by the Shift Dose Assessor.

9. Iodine air samples have been completed and a Committed Dose Equivalent (CDE) Thyroid Dose has been calculated and verified. Total CDE Thyroid Dose is expected to be 30 Rem.

9. Due to concerns for the exposure the Field Monitoring Teams may receive, EP-AA-113-F-03, Thyroid Blocking Agent Authorization Forms, have been completed and reviewed/approved by the Radiation Protection Manager.

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G. INITIATING CUE

As the Shift Emergency Director, review the attached Thyroid Blocking Agent Authorization Form (EP-AA-113-F-03) for authorization, in accordance with EP-AA-113.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of EP-AA-113, "Personnel Protective Actions".	P	The examinee obtains the current revision of EP-AA-113, "Personnel Protective Actions".
2	Use Section 4.4 of the procedure for KI assessment.	P	The examinee references section 4.4 of EP-AA-113.
****** NOTE: ****** **IF the Operator requests to review the KI calculation, inform the Operator that the EP-MA-110-100-F-02 form is not currently available, but it has been verified and is accurate.**			
3	Analyze given conditions and determine that a release IS in progress	P	Examinee determines that a release IS in progress
*4	Analyze given conditions and determine that there is NOT a Fuel Clad Barrier LOSS or POTENTIAL LOSS	P	Examinee determines that there is NOT a Fuel Clad Barrier LOSS or POTENTIAL LOSS
*5	Recognize that the conditions for issuing KI are not currently met.	P	Examinee determines the conditions for Step 4.4.1.1.A are NOT met due to: • Condition 1: there is not a loss or potential loss of the Fuel Clad Barrier. • Condition 2: the projected iodine thyroid exposure will be < 50 Rem CDE. Examinee determines the conditions for Step 4.4.1.1.B are NOT met since this applies to onsite workers, and: • Condition 1: there is not a loss or potential loss of the Fuel Clad Barrier. • Condition 2: the projected iodine thyroid exposure will be < 50 Rem CDE.
6	Determine that Thyroid Blocking Agent (KI) should not be issued. (Cue: Acknowledge report.)	P	Recognize and report that KI should not be issued.

STEP NO	STEP	ACT	STANDARD
*7	Deny authorizing the issuance of Thyroid Blocking Agent. (Cue: Acknowledge denial.)	P	The examinee does not sign EP-AA-113-F-03, "Thyroid Blocking Agent Authorization Form."
8	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

TERMINATING CUE:

When the examinee has determined the conditions for issuing KI are not met and EP-AA-113-F-03 "Thyroid Blocking Agent Authorization Form" is returned without authorization, the evaluator may terminate the exercise.

THYROID BLOCKING AGENT AUTHORIZATION

NAME:	FM Team Member #1	Employee ID Number:	123456
NAME:	FM Team Member #2	Employee ID Number:	234567
NAME:	FM Team Member #3	Employee ID Number:	345678
NAME:	FM Team Member #4	Employee ID Number:	456789
NAME:	FM Team Member #5	Employee ID Number:	567891
NAME:	FM Team Member #6	Employee ID Number:	678912
NAME:		Employee ID Number:	
NAME:		Employee ID Number:	
NAME:		Employee ID Number:	
NAME:		Employee ID Number:	

The above named personnel are hereby authorized to take Potassium Iodide (KI) for the purpose of protection against the inhalation/ingestion of radioactive I-131. The dosage shall be one (1) 130 mg tablet per day for 10 consecutive days.

Radiation Protection Manager — *current date/time*

* Radiation Protection Manager (Reviewed) — Date / Time

* Acknowledges review and evaluation for need to use KI and that emergency worker(s) have been briefed on the potential health risks associated with KI. (see back of this form for briefing details)

_____ — _____

Station Emergency Director (Authorization) — Date / Time

The Shift Manager (Shift Emergency Director) may approve prior to transferring Command and Control to the Station Emergency Director.

KI Issuance Verification

_____ — _____

** Radiation Protection Manager (Confirmation of KI Issuance) — Date / Time

** Confirm that individuals listed on this authorization form have been issued a supply of KI and instructed to take appropriate dosage.

INFORMATION ON USE OF THYROID BLOCKING AGENT

THYRO-BLOCK®

TABLETS

(POTASSIUM IODIDE TABLETS, USP)

(pronounced poe-TASS-e-um EYE-oh-dyed)

(abbreviated: KI)

TAKE POTASSIUM IODIDE ONLY WHEN PUBLIC HEALTH OFFICIALS TELL YOU IN A RADIATION EMERGENCY, RADIOACTIVE IODINE COULD BE RELEASED INTO THE AIR. POTASSIUM IODIDE (A FORM OF IODINE) CAN HELP PROTECT YOU.

IF YOU ARE TOLD TO TAKE THIS MEDICINE, TAKE IT ONE TIME EVERY 24 HOURS. DO NOT TAKE IT MORE OFTEN. MORE WILL NOT HELP YOU AND MAY INCREASE THE RISK OF SIDE EFFECTS. *DO NOT TAKE THIS DRUG IF YOU KNOW YOU ARE ALLERGIC TO IODINE.* (SEE SIDE EFFECTS BELOW.)

INDICATIONS

THYROID BLOCKING IN A RADIATION EMERGENCY ONLY

DIRECTIONS FOR USE

DOSE

Tablets — ADULTS AND CHILDREN 1 YEAR OF AGE OR OLDER: One (1) tablet once a day. Crush for small children.

HABIES UNDER 1 YEAR OF AGE: One-half (1/2) tablet once a day. Crush first.

Take for 10 days unless directed otherwise by State or local public health authorities.

Store at controlled room temperature between 15° and 30° C (59° to 86° F). Keep container tightly closed and protect from light.

WARNING

Potassium iodide should not be used by people allergic to iodine. Keep out of the reach of children. In case of overdose or allergic reaction, contact a physician or the public health authority.

DESCRIPTION

Each THYRO-BLOCK® TABLET contains 130 mg of potassium iodide. Other ingredients: magnesium stearate, microcrystalline cellulose, silica gel, sodium thiosulfate.

HOW POTASSIUM IODIDE WORKS

Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

If you take potassium iodide, it will fill up your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodine. You may take potassium iodide even if you are taking medicines for a thyroid problem (for example, a thyroid hormone or anti-thyroid drug). Pregnant and nursing women and babies and children may also take this drug.

HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium Iodide should be taken as soon as possible after public health officials tell you. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than 10 days.

SIDE EFFECTS

Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

Possible side effects include skin rashes, swelling of the salivary glands, and "iodism" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and sometimes stomach upset and diarrhea).

A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

Taking iodine may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland, or enlargement of the thyroid gland (goiter).

WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide. Then, if possible, call a doctor or public health authority for instructions.

HOW SUPPLIED

THYRO-BLOCK® TABLETS (Potassium Iodide Tablets, USP) bottles of 14 tablets (NDC 0037-0472-20). Each white, round, scored tablet contains 130 mg potassium iodide.

WALLACE LABORATORIES
Division of
CARTER-WALLACE, INC.
Cranbury, New Jersey 08512

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-233C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	002
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	EAL CLASSIFICATION WITH STATE AND LOCAL NOTIFICATIONS (MA3, wind from 300 degrees, airborne release not in progress)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE:

_____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:

LMS ENTRY:

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Senior Reactor Operator

TASK-JPM DESIGNATOR: 2007540502 / PLOR-233C K/A: 2.4.41
SRO: 4.6

TASK DESCRIPTION: Emergency Director

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. EP-AA-112-100, Rev. 9, "Control Room Operations"

2. EP-AA-111, Rev. 15, "Emergency Classification and Protective Action Recommendations"

3. EP-MA-114-100, Rev. 13, "Mid-Atlantic State/Local Notifications"

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

5. EP-AA-112-100-F-01, Rev. K, "Shift Emergency Director Checklist"

6. EP-AA-1007, Table PBAPS 3-1, Rev. 18, "Emergency Action Level (EAL) Matrix

7. EP-AA-114-F-01, Rev. D, "Release in Progress Determination Guidance"

D. TASK STANDARD

1. Performance Location: Simulator

2. Satisfactory task completion is indicated when EP-MA-114-100-F-01, "State/Local Event Notification Form" has been completed accurately.

   (NOTE: The criteria for accurate Event Notification form completion was derived from EP-AA-125-1002, Rev. 004, "ERO Performance - Performance Indicators Guidance".)

3. Estimated time to complete: TIME CRITICAL
   - Event Classification: 15 minutes
   - State/Local Notification Form: 13 minutes

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, make the Emergency Classification and complete the State/Local Notifications (if required). 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 was at 100% power when all three Reactor Feed Pumps (RFP) tripped.

2. RPV water level rapidly dropped to -10" but an automatic scram did not occur.

3. The Unit Reactor Operator depressed the Manual Scram Pushbuttons at –15" and a full reactor scram occurred; all rods inserted.

4. RPV water level dropped below –55". HPCI and RCIC started to return RPV water level to the normal band.

5. The MSIVs remained open, EHC controlled RPV pressure at 940 PSIG.

6. The cause of the event was determined to be a fire in the Feedwater Digital Control System panel on Turbine Building 165' elevation. The fire was extinguished in 17 minutes after the initial observation.

7. All radiation effluent monitors are at normal post-scram levels.

G. INITIATING CUE

As Emergency Director, make the EAL Classification and perform the required actions of EP-AA-112-100-F-01 "Shift Emergency Director Checklist" up to and including completing EP-MA-114-100-F-01, State/Local Notification Form.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
***** NOTE ***** **IF this JPM is being performed in an area with other candidates such as Tabletop in a classroom, remind the candidates to NOT make any announcements out loud.**			
*** 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.	P	Copies of EP-AA-112-100-F-01 and EP-AA-1007 are obtained.
*2	Determine that there was an unsuccessful automatic scram and a successful manual scram.	P	Automatic RPS scram failure with a successful manual scram.
*3	Determine that the fire did not affect a safety system required for safe shutdown.	P	Review of HA6 and HU6 concludes it is not applicable to this event.
*4	Determine that threshold MA3 in the Failure of Reactor Protection System Matrix is the correct classification.	P	Threshold **MA3** in the Failure of Reactor Protection System Matrix is the correct classification due to RPS setpoint being exceeded (<1" RPV level) and an automatic scram did not reduce reactor power to subcritical.
*5	Announce the event classification to the facility staff.	S	ALERT is announced.
***** NOTE ****** **Record the time using the clock above the Full Core Display. Time = _____** **Determine if the elapsed time since the initiating cue exceeds 15 minutes.**			
***** NOTE ***** **Inform the examinee that the Public Address Announcement and the ERO Notification required by EP-AA-112-100-F-01, Shift Emergency Director Checklist, are NOT required for this JPM.**			
***** NOTE ***** **The following steps are associated with completion of EP-MA-114-100-F-01, "State/Local Event Notification Form."**			
6	Complete Utility Message Number	P	Enter "1" for Utility Message Number
*7	Check the call status.	P	"This is a drill" line is checked in Block #1.
*8	Check the affected station.	P	"Peach Bottom" is checked in Block #2.
*9	Check the event classification.	P	"ALERT" classification is checked in Block #3a.

STEP NO	STEP	ACT	STANDARD
*10	Check the affected unit.	P	Unit "Two" is checked in Block #3b.
*11	Enter the time and date of the declaration.	P	Declaration time (in 24 hour clock nomenclature) and today's date are entered in Block #3c. The declaration time should match the time the examiner entered in the note before JPM step 1.
*12	Check the applicable change in classification status.	P	"Initial Declaration" is checked in Block #3d.
*13	Enter the EAL number declared AND/OR provide a brief non-technical description of event.	P	EAL# "**MA3**" is annotated in Block #4a AND a simplified explanation for the event classification is provided in Block #4b. Acronyms, abbreviations or other terms that would not be recognized by state and local response agencies are avoided. The Offsite EAL Reference Manual may be referred to, if necessary.
*14	Check the non-routine radiological release status.	P	"Airborne" non-routine radiological release is **NOT** in progress is checked in Block #5A. EP-AA-114-F-01, "Release in Progress Determination Guidance" may be referenced.
*15	Enter the wind direction "degrees from." (Cue: Wind direction is from 300 degrees.)	P	"300" is entered as the wind direction degrees from in Block #6a.
*16	Enter the wind speed. (Cue: Wind speed is 10 mph.)	P	Wind speed is entered as "10" miles per hour in Block #6b.
*17	Check the utility Protective Action Recommendation.	P	7a, NOT APPLICABLE is checked.
*18	Check the appropriate conclusion.	P	"This is a drill" line is checked in Block #8.
19	Approve the event notification form.	P	The event notification form is signed in the form's header area by the Emergency Director.

*** 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.

STEP NO	STEP	ACT	STANDARD
20	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 EP-MA-114-100-F-01, "State/Local Event Notification Form" has been completed, the evaluator will terminate the exercise.

STATE/LOCAL EVENT NOTIFICATION FORM

UTILITY MESSAGE NO. ____1____

EMERGENCY DIRECTOR APPROVAL: _____

PERFORM INITIAL ROLL CALL PRIOR TO TRANSMITTING – Refer to Page 3 of Form

1. CALL STATUS is:	2. This is _____
[X] This is a DRILL. [ ] This is an ACTUAL EVENT.	for [ ] LIMERICK / [X] PEACH BOTTOM / [ ] TMI My phone number is _____ The current time is _____. *[Communicator will provide his/her NAME, PHONE NUMBER, and CURRENT TIME (in 24-hour clock) when notification is read.]*

3.a EMERGENCY CLASSIFICATION	b. AFFECTED UNIT(S) is/are:	d. THIS REPRESENTS A/AN:
[ ] UNUSUAL EVENT [X] ALERT [ ] SITE AREA EMERGENCY [ ] GENERAL EMERGENCY [ ] RECOVERY [ ] TERMINATION	[ ] ONE [X] TWO [ ] THREE c. DECLARED AT: TIME: _____ *(24-hr clock)* DATE: ___/___/___	[X] INITIAL DECLARATION [ ] ESCALATION [ ] NO CHANGE [ ] REDUCTION - IN CLASSIFICATION STATUS

4. a. EMERGENCY ACTION LEVEL (EAL) NO. is: **MA3**

b. A BRIEF NON-TECHNICAL DESCRIPTION OF THE EVENT is as follows:

(Anything similar to the below wording is acceptable. Wording does NOT have to be exact.)

The reactor control rods failed to automatically shutdown the reactor when required. Current plant condition DO NOT threaten public safety.

5. NON-ROUTINE RADIOLOGICAL RELEASE STATUS is:

[X] a. NO radiological release in-progress

[ ] b. AIRBORNE radiological release in-progress

[ ] c. LIQUID radiological release in-progress

[ ] d. Radiological release TERMINATED

6. METEOROLOGY is:

a. WIND DIRECTION is *FROM*: 300 (degrees)

b. WIND SPEED is: 10 (miles per hour)

STATE/LOCAL EVENT NOTIFICATION FORM

7. UTILITY PROTECTIVE ACTION RECOMMENDATION: (**a or b**) – No action should be taken until government officials have been notified: by State:

[X] a. NOT APPLICABLE *(Unusual Event, Alert, Site Area Emergency, Termination or Recovery only)*

(Complete the following for Shelter or Evacuation for a General Emergency only for the applicable station):

[ ] b. The PROTECTIVE ACTION RECOMMENDATION (PAR) from the utility is:

LGS/PBAPS

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____MILES
AND
SHELTER THE FOLLOWING SECTORS FROM _____ MILES TO _____ MILES:

[ ] N	[ ] E	[ ] S	[ ] W
[ ] NNE	[ ] ESE	[ ] SSW	[ ] WNW
[ ] NE	[ ] SE	[ ] SW	[ ] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where shelter is recommended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO __5___MILES
AND
EVACUATE THE FOLLOWING SECTORS FROM __5___ MILES TO __10___ MILES:

[ ] N	[ ] E	[ ] S	[X] W
[ ] NNE	[ ] ESE	[ ] SSW	[X] WNW
[ ] NE	[ ] SE	[ ] SW	[X] NW
[ ] ENE	[ ] SSE	[ ] WSW	[ ] NNW

AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those sectors where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

TMI

[ ] **SHELTER** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where shelter is recommended and advise remainder of the EPZ to monitor EAS Messages.

[ ] **EVACUATE** 360 DEGREES FROM 0 MILES (SITE BOUNDARY) TO _____ MILES
AND
The utility recommends that government officials notify the general public to take potassium iodide (KI) for those areas where evacuation is recommended and advise remainder of the EPZ to monitor EAS Messages.

8. CONCLUSION: [X] This is a DRILL. [ ] This is an ACTUAL EVENT.

- **PERFORM** FINAL ROLL CALL UPON COMPLETION – Refer to Page 3 of Form
- **ASK** if there are any questions regarding message or repeat backs needed
- **READ** "This concludes the notification message"
- **FAX** completed copies of all form pages to the Control Room, TSC and EOF, as applicable.
- **INFORM** the Shift Manager (Shift Emergency Director), TSC Director or EOF Director, as applicable, when notification is completed to required contacts.

STATE/LOCAL EVENT NOTIFICATION FORM

"15 Minute Notifications"

PEACH BOTTOM (CAN 833)

"Notification Line": Dial **"833"** for conference call. Stay on the line until agencies come on
"3 Digit Extensions". Make these calls from 3-digit lines.
"Commercial # From PBAPS": Make these calls from a 4-digit line. Dial "9-1-Area Code-Number"
"Commercial # From PBABS 3-digit lines": Dial "7-1-9-1-Area Code-Number"

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 216 or 9-1-800-424-7362 / 9-1-717-651-2001	☐
_____	**Maryland EMA** Ext. 205 or 9-1-410-517-3600	☐
_____	**York County** Ext. 219 or 9-1-717-854-5571	☐
_____	**Harford County** Ext. 214 or 9-1-410-638-3400 / 9-1-410-638-4900	☐
_____	**Cecil County** Ext. 234 or 9-1-410-398-2222 / 9-1-410-392-2010	☐
_____	**Lancaster County** Ext. 217 or 9-1-800-808-5236 / 9-1-717-664-1190	☐
_____	**Chester County** Ext. 218 or 9-1-610-344-5100	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (PEACH BOTTOM ONLY)

[ ] Maryland Dept. of the Environment
Emergency ext. 292 or 235
9-1-866-633-4686
Contacted at: _____ (time: 24-hour clock)

[ ] PA State Police, York Barracks
Ext. 284 or 9-1-717-428-1011
Contacted at: _____ (time: 24-hour clock)

*** NOT required within 15 minutes of Classification**

"15 Minute Notifications"

LIMERICK (CAN 841)

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 116 or 9-1-800-424-7362 or 9-1-717-651-2001	☐
_____	**Montgomery County** Ext. 117 or 9-1-610-631-6541	☐
_____	**Chester County** Ext. 118 or 9-1-610-344-5100	☐
_____	**Berks County** Ext. 119 or 9-1-610-655-4931	☐
_____	**Initial Roll Call Completed**	

"15 Minute Notifications"

TMI (CAN 44)

"Notification Line": Dial "44" for **all-call**. If necessary, dial 3-digit extension #'s to notify individual agencies
Commercial # From TMI: Dial "9" and the #
Commercial # From EOF: Dial "9-1-717" and the #
Toll-Free "800" # From TMI or EOF: Dial the #'s exactly as they appear below

Initial Roll Call (Time Contacted: 24-hour clock)		Final Roll Call (√)
_____	**Pennsylvania EMA** Ext. 315 or 9-1-800-424-7362 or 9-651-2001	☐
_____	**Cumberland County** Ext. 319 or 9-238-9676, 9-243-4121 or 9-532-8878	☐
_____	**Lebanon County** Ext. 321 or 9-272-2025 / -7621 / -2054	☐
_____	**Lancaster County** Ext. 318 or 9-664-1190 / -1200	☐
_____	**York County** Ext. 317 or 9-854-5571, 9-840-2955 or 9-1-800-427-8347	☐
_____	**Dauphin County** Ext. 320 or 9-911 or 9-558-6900	☐
_____	**Initial Roll Call Completed**	

FOLLOW-UP NOTIFICATIONS * (TMI)

[ ] York Haven Power Station
9-266-3654 or 9-818-3962
Contacted at: _____ (time: 24-hour clock)

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM	[ ] QUALIFICATION MANUAL	[ ] OJT MODULE
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-331CA
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	001
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	INJECT SBLC (ALTERNATE PATH - LOW SBLC DISCHARGE PRESSURE)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ Last First M.I.	ISSUE DATE: _____	
EMPLOYEE ID NO. _____	COMPLETION DATE: _____	
COMMENTS:		
Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2008060501/ PLOR-331CA K/A: 295037EA1.04

URO: 4.5 SRO: 4.5

TASK DESCRIPTION: Perform Standby Liquid System Initiation During A Plant Event

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

RRC 11.1-2, Rev. 1, Standby Liquid System Initiation During a Plant Event

D. TASK STANDARD

1. Satisfactory task completion is indicated when Standby Liquid Control is injecting into the RPV at adequate discharge pressure using the 'B' SBLC Pump.

2. Estimated time to complete: 12 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, inject SBLC into the RPV using the 'A' SBLC Pump using RRC 11.1-2, Standby Liquid System Initiation during a Plant Event. I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. An attempt has been made to scram the reactor.

2. An Electric ATWS has resulted and SBLC injection is required.

3. Reactor Pressure is 920 psig.

4. Reactor Level is in the normal band with feedwater in automatic control.

G. INITIATING CUE

The Control Room Supervisor directs you, the Unit Reactor Operator, to inject Standby Liquid Control using the 'A' SBLC Pump in accordance with RRC 11.1-2, Standby Liquid System Initiation During a Plant Event.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure RRC 11.1-2.	P	A copy of procedure RRC 11.1-2 is obtained.
*2	Verify CLOSED the AO-39 AND AO-40, "Recirc Sample Inboard and Outboard Isolation" valves. (Cue: Initially, cue candidate that AO-39 AND AO-40 RED lights are ON and GREEN lights are OFF. After candidate addresses manipulating control switch to CLOSE the valves, then cue RED lights OFF and GREEN lights ON)	P	Final State: AO-39 and AO-40 CLOSED, as indicated by AO-39 AND AO-40 RED lights are OFF and GREEN lights are ON on Panel 20C005A.
*3	Start the 'A' SBLC Pump. (Cue: Acknowledge switch movement.)	P	The SBLC switch is placed in the "START SYS A" position on Panel 20C005A.
4	Verify that the RWCU system isolates. (Cue: Valves checked have the green lights ON and the red lights off.)	P	Verify green lights ON and red lights OFF for the following valves on Panel 20C004A: MO-2-12-15, RWCU Inboard Isolation MO-2-12-18, RWCU Outboard Isolation MO-2-12-68, RWCU Outlet valve
****** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**			
*5	Verify that SBLC is injecting. (Cue: Pump Red Light is on, Discharge pressure 400 psig, tank level steady.)	P	Recognize that SBLC Pump discharge pressure on PI-2-11-065 is lower than reactor pressure and therefore SBLC is NOT injecting.

STEP NO	STEP	ACT	STANDARD
	***** NOTE ***** **Candidate may immediately move to inject with the 'B' SBLC Pump OR may notify the CRS of the failure to inject.** **If the candidate chooses to notify the CRS and wait for direction, then repeat initial cue to "Inject Standby Liquid Control in accordance with RRC 11.1-2 'Standby Liquid System Initiation During a Plant Event' ".**		
*6	Start the 'B' SBLC Pump. (Cue: Acknowledge switch operation.)	P	The SBLC switch is placed in the "START SYS B" position on Panel 20C005A.
7	Verify that SBLC is injecting. (Cue when checked: Pump Red Light is on, Discharge pressure 950 psig, tank level is lowering.)	P	Verify that SBLC Discharge pressure is now greater than reactor pressure.
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 examinee (Task Conditions/Prerequisites) AND procedures.	P	Positive control established.

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

I. TERMINATING CUE

When SBLC is injecting at greater than reactor pressure, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-332CA
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	002
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	MANUALLY INITIATE RCIC (ALTERNATE PATH – RCIC FAILS TO ISOLATE)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE I.D. NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2170410401 / PLOR-332CA K/A: 217000A4.03

URO: 3.4 SRO: 3.3

TASK DESCRIPTION: Take Actions For RCIC Steam Line Hi Flow

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. RRC 13.1-2 Rev. 3, "RCIC System Operation During A Plant Event"

2. ARC 222 D-1, Rev. 5, "RCIC Steam Line Hi Flow"

3. GP-8.G, Rev.4, "PCIS Isolation – Groups V and V-B"

D. TASK STANDARD

1. Satisfactory task completion is indicated when RCIC is manually isolated following failure of the system to automatically isolate on high steam supply line flow.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to manually initiate the RCIC system and inject into the Reactor vessel at a flow rate of approximately 600 gpm 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. Reactor Scram has occurred on low level due to a loss of all Feedwater.

2. Reactor level is –25" and dropping slowly.

G. INITIATING CUE

The Control Room Supervisor directs you, the Plant Reactor Operator, to initiate the RCIC System using the RCIC Manual Initiation pushbutton and inject to the Reactor vessel at approximately 600 gpm using RRC 13.1-2 "RCIC System Operation During a Plant Event."

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure RRC 13.1-2.	P	A copy of procedure RRC 13.1-2 is obtained. Section A, "Vessel Injection using Manual Initiation Push-button", is referenced.
*2	Arm the RCIC Manual Initiation pushbutton, 13A-S80. (Cue: Acknowledge pushbutton collar operation; annunciator A-2 on alarm panel 222 is alarming.)	P	RCIC Manual Initiation pushbutton collar is rotated clockwise to the ARMED position at panel 20C004C.
*3	Depress the RCIC Manual Initiation pushbutton, 13A-S80. (Cue: Acknowledge Manual Initiation pushbutton operation; annunciator 222 C-5 "RCIC Barometric Condenser Vacuum Pump Running" is alarming.)	P	RCIC Manual Initiation pushbutton is momentarily DEPRESSED at panel 20C004C.
4	Acknowledge the "RCIC BAROMETRIC CONDENSER VACUUM PUMP RUNNING" annunciator. (Cue: Annunciator 222 C-5 is lit solid.)	P	The annunciator "ACKNOWLEDGE" pushbutton is depressed.
5	Verify MO-2-13-131, RCIC Turbine Supply valve, opens. (Cue: MO-131 red light is on, green light is off.)	P	MO-2-13-131 red light is verified ON at panel 20C004C.
6	Verify MO-2-13-021, RCIC to Feed Line valve, opens. (Cue: MO-021 red light is on, green light is off.)	P	MO-2-13-021 red light is verified ON at panel 20C004C.
7	Verify MO-2-13-132, RCIC Cooling Water valve, opens. (Cue: MO-132 red light is on, green light is off.)	P	MO-2-13-132 red light is verified ON at panel 20C004C.

STEP NO	STEP	ACT	STANDARD
10	Verify AO-2-13-034 and AO-2-13-035, RCIC Drain Isol to Mn Cndr valves, close. (Cue: AO-034 and AO-035 green lights are on, red lights are off.)	P	AO-2-13-034 and AO-2-13-035 green lights verified ON at panel 20C004C.
11	Verify 20P046, Vacuum Pump, starts. (Cue: 20P046 red light is on, green light is out. Alarm 222 C-5 lit.)	P	20P046 red light verified ON at panel 20C004C.
12	Verify RCIC system flowrate is 600 gpm. (Cue: FI-2-13-091 indicates 600 gpm. RCIC Flow Controller output meter indicates 80%.)	P	RCIC Flow is verified to be 600 gpm on panel 20C004C.
13	Place the RCIC Manual Initiation pushbutton, 13A-S80, collar in the DISARMED position. (Cue: Acknowledge pushbutton collar operation.)	P	RCIC Manual Initiation pushbutton collar is rotated counter-clockwise to the DISARMED position at panel 20C004C.
14	Acknowledge the "RCIC STEAM LINE HI FLOW" annunciator. (Cue: Annunciator 222 D-1 is lit solid.)	P	The annunciator "ACKNOWLEDGE" pushbutton is depressed.
****** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**			

STEP NO	STEP	ACT	STANDARD
15	Using ARC 222 D-1 determine that the RCIC system should have automatically isolated. (Cue: RCIC system is in operation and injecting into the reactor vessel at 600 gpm.)	P	Using ARC 222 D-1 VERIFY that the following valves should have automatically closed, but did not: MO-2-13-015, MO-2-13-016, MO-2-13-039, MO-2-13-041, AO-2-13-137, AO-2-13-138, MO-4487, MO-2-13-027. Verification of an actual high steam flow condition can also be accomplished by monitoring RCIC steam line leak detection instruments TE-4936A-D, 4937A-D, 4938A-D, 4939A-D.
NOTE: **Examinee may perform steps 16 through 30 in any order.**			
*16	TRIP RCIC turbine by depressing the "TRIP" pushbutton. (Cue: The RCIC TRIP pushbutton is depressed.)	P	Depress the RCIC TRIP pushbutton on Panel 20C004C.
17	Verify closed MO-4487, "Trip Throttle Valve". (Cue: MO-4487 green light is on, red light is off.)	P	MO-4487 green light is verified ON at panel 20C004C.
18	Verify closed MO-2-13-027, "Min Flow". (Cue: MO-2-13-027 green light is on, red light is off.)	P	MO-2-13-027 green light is verified ON at panel 20C004C.

STEP NO	STEP	ACT	STANDARD
19	Place control switch for MO-2-13-131, "Supply", to CLOSE. (Cue: Acknowledge control switch operation.)	P	Control switch for MO-2-13-131 is placed in the CLOSE position on Panel 20C004C.
20	Verify closed MO-2-13-131, "Supply". (Cue: MO-2-13-131 green light is on, red light is off.)	P	MO-2-13-131 green light is verified ON at panel 20C004C.
*21	Place control switch for MO-2-13-015, "Steam Isolation", to CLOSE. (Cue: Acknowledge control switch operation.)	P	Control switch for MO-2-13-015 is placed in the CLOSE position on Panel 20C004C.
22	Verify closed MO-2-13-015, "Steam Isolation". (Cue: MO-2-13-015 green light is on, red light is off.)	P	MO-2-13-015 green light is verified ON at panel 20C004C.
*23	Place control switch for MO-2-13-016, "Steam Isolation", to CLOSE. (Cue: Acknowledge control switch operation.)	P	Control switch for MO-2-13-016 is placed in the CLOSE position on Panel 20C004C.
24	Verify closed MO-2-13-016, "Steam Isolation". (Cue: MO-2-13-016 green light is on, red light is off.)	P	MO-2-13-016 green light is verified ON at panel 20C004C.
25	Verify closed MO-2-13-039, "Torus Suction". (Cue: MO-2-13-039 green light is on, red light is off.)	P	MO-2-13-039 green light is verified ON at panel 20C004C.
26	Verify closed MO-2-13-041, "Torus Suction". (Cue: MO-2-13-041 green light is on, red light is off.)	P	MO-2-13-041 green light is verified ON at panel 20C004C.

STEP NO	STEP	ACT	STANDARD
*27	Place control switch for MO-2-13-137, "Isol", to CLOSE. (Cue: Acknowledge control switch operation.)	P	Control switch for MO-2-13-137 is placed in the CLOSE position on Panel 20C004C.
28	Verify closed MO-2-13-137, "Isol". (Cue: MO-2-13-137 green light is on, red light is off.)	P	MO-2-13-137 green light is verified ON at panel 20C004C.
*29	Place control switch for MO-2-13-138, "Isol", to CLOSE. (Cue: Acknowledge control switch operation.)	P	Control switch for MO-2-13-138 is placed in the CLOSE position on Panel 20C004C.
30	Verify closed MO-2-13-138, "Isol". (Cue: MO-2-13-138 green light is on, red light is off.)	P	MO-2-13-138 green light is verified ON at panel 20C004C.
31	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
32	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 RCIC is manually isolated, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-083C
COURSE:	Licensed Operator Requalification	REV #::	009
AUTHOR:	M. J. Kelly	TYPIST:	Mda
TITLE:	Reopen The Main Steam Isolation Valves After a GP I Isolation		

APPROVALS:

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APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

SOC. SEC. NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

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Signature/Date

PIMS CODE:	
PIMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2000800501 / PLOR-083C K/A: 239001A4.01

RO: 4.2 SRO: 4.0

TASK DESCRIPTION: Reopen the Main Steam Isolation Valves after a GP I Isolation

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-221-2, Rev. 8, "Main Steam Isolation Valve Bypass"

D. TASK STANDARD

1. Satisfactory task completion is indicated when Inboard MSIVs are open.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to reopen the 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. Use of this procedure has been directed by the TRIP procedures.

2. Main Condenser is available.

3. RPV level is known.

4. There is no indication of gross fuel failure.

5. There is no indication of a Main Steam Line break.

6. All T-221 Tool Packages have been obtained.

7. Inboard and Outboard MSIVs are closed.

8. Steps 4.1 thru 4.5 of T-221-2, "Main Steam Isolation Valve Bypass" are complete.

G. INITIATING CUE

The Control Room Supervisor directs you to perform T-221-2, "Main Steam Isolation Valve Bypass" steps 4.6 through 4.12 in order to reopen the MSIVs.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure T-221-2.	P	A copy of procedure T-221-2 is obtained.
*2	Open AO-2-02-086A "A" Outboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-086A control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
3	Verify AO-2-02-086A "A" Outboard MSIV is open. (Cue: AO-2-02-086A red light is on, green light is off.)	P	AO-2-02-086A red light is verified ON at panel 20C003-01.
*4	Open AO-2-02-086B "B" Outboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-086B control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
5	Verify AO-2-02-086B "B" Outboard MSIV is open. (Cue: AO-2-02-086B red light is on, green light is off.)	P	AO-2-02-086B red light is verified ON at panel 20C003-01.
*6	Open AO-2-02-086C "C" Outboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-086C control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
7	Verify AO-2-02-086C "C" Outboard MSIV is open. (Cue: AO-2-02-086C red light is on, green light is off.)	P	AO-2-02-086C red light is verified ON at panel 20C003-01.
*8	Open AO-2-02-086D "D" Outboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-086D control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.

STEP NO	STEP	ACT	STANDARD
9	Verify AO-2-02-086D "D" Outboard MSIV is open. (Cue: AO-2-02-086D red light is on, green light is off.)	P	AO-2-02-086D red light is verified ON at panel 20C003-01.
*10	Open MO-2-02-077, Outboard Main Steam Drain valve. (Cue: Acknowledge control switch operation.)	P	MO-2-02-077 control switch is momentarily placed in the "OPEN" position at panel 20C003-03.
11	Verify MO-2-02-077, Outboard Main Steam Drain valve open. (Cue: MO-77 red light is on, green light is off.)	P	MO-2-02-077 red light is verified ON at panel 20C003-03.
*12	Open MO-2-02-074, Inboard Main Steam Drain valve. (Cue: Acknowledge control switch operation.)	P	MO-2-02-074 control switch is momentarily placed in the "OPEN" position at panel 20C003-03.
13	Verify MO-2-02-074 Inboard Main Steam Drain valve is open. (Cue: MO-74 red light is on, green light is off.)	P	MO-2-02-074 red light is verified ON at panel 20C003-03.
14	Verify closed MO-2-02-079, Orifice Bypass to Main Cndr valve. (Cue: MO-79 green light is on, red light is off.)	P	MO-2-02-079 green light is verified ON at panel 20C003-03.
*15	Open MO-2-02-078, Downstream Drain valve. (Cue: MO-78 red light is on, green light is off.)	P	MO-2-02-078 control switch is momentarily placed in the "OPEN" position at panel 20C003-03.

STEP NO	STEP	ACT	STANDARD
16	Verify MO-2-02-078 Downstream Drain valve is open. (Cue: MO-78 red light is on, green light is off.)	P	MO-2-02-078 red light is verified ON at panel 20C003-03.
17	Observe pressure differential across the Inboard MSIVs. Determine the difference between Reactor pressure on PI-2-06-090A(B)(C) and "Steam Line" pressure on PR-2865 on panel 20C008A. (Cue: PI-2-06-090A(B)(C) indicates 540 psig and "Main Steam Pressure A" and "Main Steam Pressure B" indicate 485 psig and rising slowly.)	P	Pressure differential across the Inboard MSIVs is determined using PI-2-06-090A(B)(C) at panel 20C005A, and "Steam Line" PR-2865 at panel 20C008A.
18	Verify differential pressure across the inboard MSIVs is less than 150 psid. (Cue: PI-2-06-090A(B)(C) is 400 psig and Main Steam Pressure is 300 psig.)	P	Differential pressure across the inboard MSIVs is verified less than 150 psig on PI-2-06-090A(B)(C) at panel 20C005A, and "Steam Line" PR-2865 at panel 20C008A.
*19	Open AO-2-02-080A "A" Inboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-080A control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
20	Verify AO-2-02-080A "A" Inboard MSIV is open. (Cue: AO-2-02-080A red light is on, green light is off.)	P	AO-2-02-080A red light is verified ON at panel 20C003-01.
*21	Open AO-2-02-080B "B" Inboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-080B control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
22	Verify AO-2-02-080B "B" Inboard MSIV is open. (Cue: AO-2-02-080B red light is on, green light is off.)	P	AO-2-02-080B red light is verified ON at panel 20C003-01.

STEP NO	STEP	ACT	STANDARD
*23	Open AO-2-02-080C "C" Inboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-080C control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
24	Verify AO-2-02-080C "C" Inboard MSIV is open. (Cue: AO-2-02-080C red light is on, green light is off.)	P	AO-2-02-080C red light is verified ON at panel 20C003-01.
*25	Open AO-2-02-080D "D" Inboard MSIV. (Cue: Acknowledge control switch operation.)	P	AO-2-02-080D control switch is placed in the "AUTO/OPEN" position at panel 20C003-01.
26	Verify AO-2-02-080D "D" Inboard MSIV is open. (Cue: AO-2-02-080D red light is on, green light is off.)	P	AO-2-02-080D red light is verified ON at panel 20C003-01.
27	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
28	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 MSIVs have been reopened, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM	QUALIFICATION MANUAL	OJT MODULE
PROGRAM:	Licensed Operator Requalification	CODE #:	PLOR-343CA
COURSE:	Licensed Operator Requalification	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	Manually Initiate HPCI (Alternate Path – Suction Valves Fail to Auto Swap on CST Low Level)		

APPROVALS:

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Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ Last First M.I.	ISSUE DATE: _____
EMPLOYEE ID#: _____	COMPLETION DATE: _____
COMMENTS:	

Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2060250101 / PLOR-343CA K/A: 206000A2.09

URO: 3.5 SRO: 3.7

TASK DESCRIPTION: Manually Initiate HPCI (Alternate Path – Suction Valves Fail to Auto Swap on CST Low Level)

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. RRC 23.1-2, Rev. 5, "HPCI System Operation During A Plant Event"

2. Alarm Response Card 221 C-3, Rev. 4, Condensate Storage Tank Level Low-Low

3. Procedure SO 23.7.B-2, Rev. 7, "Transfer of HPCI Pump Suction from CST to Torus"

D. TASK STANDARD

1. Satisfactory task completion is indicated when HPCI flow has been raised to 5000 gpm and pump suction is manually transferred from the CST to the Torus (Torus suction valves open and CST suction valve closed) without adverse effects on RPV injection.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to manually initiate the HPCI system and inject to the Reactor vessel at a flow rate of 5000 gpm 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. RPV Level is –25 inches and lowering slowly.

2. RCIC is isolated.

G. INITIATING CUE

The Control Room Supervisor directs you to initiate the HPCI system using HPCI Manual Component Operation and inject to the Reactor vessel at 5000 gpm using RRC 23.1-2 "HPCI System Operation During A Plant Event".

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain copy of RRC 23.1-2 "HPCI System Operation During A Plant Event".	P	References Section A "HPCI Injection Using Manual Initiation Push-button".
*2	Simultaneously start the Auxiliary Oil Pump, 20P026 and open MO-2-23-014 "Supply" valve. (Cue: Acknowledge control switch operation.)	P	Auxiliary oil pump control switch is placed in the START position while simultaneously placing MO-2-23-014 "Supply" control switch momentarily in the "OPEN" position at panel 20C004B.
3	Verify the Auxiliary Oil Pump started. (Cue: Auxiliary Oil pump red light is on green light is off and annunciator 222 D-5 is alarming, "HPCI AUXILIARY OIL PUMP RUNNING", Turbine Stop and Control valve red lights are on.)	P	Verify the Auxiliary Oil pump red light is ON at panel 20C004B or annunciator 222 D-5 is alarming at panel 20C204C.
4	Verify MO-2-23-014, "Supply" valve is open. (Cue: MO-14 red light is on, green light is off, HPCI discharge pressure and speed rise.)	P	MO-2-23-14 red light verified ON, HPCI discharge pressure (PI-2-23-109) and HPCI speed (SPI-4505) rising at panel 20C004B.
*5	Open MO-2-23-019, "To Feed Line" valve. (Cue: Acknowledge control switch operation.)	P	MO-2-23-019 control switch is momentarily placed in the OPEN position at panel 20C004B.
6	Verify MO-2-23-019, "To Feed Line" valve is open. (Cue: MO-19 red light is on, green light is off, HPCI flow rise.)	P	MO-2-23-019 red light is verified ON and flow (FI-2-23-108) rising at panel 20C004B.
***** NOTE ***** **The following step is NOT critical because the Gland Seal system is NOT safety-related.**			
7	Start the HPCI Gland Seal Condenser Vacuum Pump, 20K002. (Cue: Vac pump red light is on, green light is off.)	P	HPCI Gland Seal Condenser Vacuum Pump control switch is placed in the START position at panel 20C004B.

STEP NO	STEP	ACT	STANDARD
8	Verify pump flowrate of 5000 gpm. (Cue: FI-2-23-108 indicates 5000 gpm.)	P	A HPCI flowrate of approximately 5000 gpm is verified on FI-2-23-108 at panel 20C004B.
	***** NOTE ***** **Approximately 15 seconds after flow has been raised to 4950 gpm, Annunciator 221 C-3 "CONDENSATE STOR TANK LEVEL LOW - LOW" will be received, initiating the Alternate Path portion of the JPM.**		
9	Recognize the Condensate Storage Tank Low Level Condition alarm. (Cue: Report Annunciator 221 C-3 is alarming.)	P	Recognize by reporting annunciator 221 C-3 is alarming indicating a Low CST Level condition.
10	Obtain a copy of Alarm Response Card 221 C-3.	P	Candidate references ARC 221 C-3, CONDENSATE STOR TANK LEVEL LOW - LOW.
11	Verify the Low CST Level Condition. (Cue: CST level is indicating 5 feet.)	P	Candidate verifies that CST Level is low by referencing LR-2217 on 20C007A or LI-2217 OR LI-8453 on 20C004. (The candidate may also send an EO to verify level on LI-2210.)
12	Recognize that HPCI failed to automatically swap suction paths on low CST level. (Cue: Acknowledge report.)	P	Candidate will recognize by reporting that the HPCI suction path failed to automatically swap. (A RCIC suction swap is not required due to RCIC being isolated.)
13	Obtain a copy of procedure SO 23.7.B-2 OR Implement auto actions of ARC 221 C-3.		A copy of procedure SO 23.7.B-2, "Transfer of HPCI Pump Suction from CST to Torus", is obtained. Steps 4.6 through 4.9, OR The auto actions of ARC 221 C-3 should be referenced for transient conditions.

STEP NO	STEP	ACT	STANDARD
*14	Open MO-2-23-057 HPCI Torus Suction valve. (Cue: Acknowledge control switch operation.)	P	MO-2-23-057 control switch is momentarily placed in the OPEN position then released at panel 20C004B.
*15	Open MO-2-23-058, HPCI Torus Suction valve. (Cue: Acknowledge control switch operation.)	P	MO-2-23-058 control switch is momentarily placed in the OPEN position then released at panel 20C004B.
16	Verify MO-2-23-057 and MO-2-23-058, HPCI Torus Suction valves are open. (Cue: MO-57 and MO-58 red lights are on, green lights are off.)	P	MO-2-23-057 and MO-2-23-058 red lights are verified ON, and green lights OFF at panel 20C004B.
17	Verify MO-2-23-017 Cond Tank Suction valve automatically closes when MO-2-23-057 and MO-2-23-058 are full open. (Cue: MO-17 green light is off, red light is on.)	P	Recognize that MO-2-23-017 failed to close as indicated by the green light verified OFF and red light verified ON at panel 20C004B.
*18	Close MO-2-23-017, Cond Tank Suction valve. (Cue: Acknowledge control switch operation.)	P	MO-2-23-017 control switch is momentarily placed in the CLOSE position then released at panel 20C004B.
19	Verify MO-2-23-017, Cond Tank Suction valve is closed. (Cue: MO-17 green light is on, red light is off.)	P	MO-2-23-017 green light is verified ON, and red light OFF at panel 20C004B.
20	Check Level Switches responsible for the automatic swap. (Cue: Acknowledge direction.)	P	Direct that LS-2-23-74 and LS-2-23-75 be checked for proper operation due to the failed auto transfer.

STEP NO	STEP	ACT	STANDARD
21	Inform Control Room Supervisor that HPCI was manually started and is injecting into the RPV. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
22	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 HPCI suction has been transferred to the Torus, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-034C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	013
AUTHOR:	M. J. Kelly	TYPIST:	jav
TITLE:	CAD SYSTEM NITROGEN ADDITION TO CONTAINMENT DURING NORMAL OPERATIONS		

APPROVALS:

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Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

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Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2240130101 / PLOR-034C K/A: 223001A4.10

URO: 3.2 SRO: 3.2

TASK DESCRIPTION: CAD System Nitrogen Addition To Containment During Normal Operations

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 7C.1.B-2, Rev. 18, "CAD System Nitrogen Addition to Containment During Normal Operations" (R)

2. SO 7J.7.C-2, Rev. 4, "Placing Drywell and Torus H2/O2 Sampling System in Standby Mode and Removing from Standby Mode"

D. TASK STANDARD

1. Satisfactory task completion is indicated when Nitrogen has been added to containment with an N_2 flow of 55-65 scfm.

2. Estimated time to complete: 14 minutes (A.5) Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to perform a normal nitrogen addition to the Drywell from the CAD system 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. All SO 7C.1.B-2, "CAD System Nitrogen Addition to Containment During Normal Operations" procedural prerequisites are met.

2. Primary Containment venting is NOT required.

3. CAD Tank level is 45 inches.

G. INITIATING CUE

The Control Room Supervisor directs you, the Plant Reactor Operator, to add nitrogen to the Drywell using "A" loop of the CAD system at 60 scfm in order to lower drywell Oxygen concentration in accordance with SO 7C.1.B-2 "CAD System Nitrogen Addition to Containment During Normal Operations," including placing the 'B' CAC/CAD Analyzer in service in accordance with SO 7J.7.C-2 "Placing Drywell and Torus H2/O2 Sampling System in Standby Mode and Removing from Standby Mode"

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure SO 7C.1.B-2.	P	A copy of procedure SO 7C.1.B-2 is obtained. The Examinee should identify step 4.5.1 as the step needing to be performed.
*2	Open SV-4948A Drywell Nitrogen Supply valve. (Cue: Acknowledge control switch operation.)	P	SV-4948A control switch is placed in the OPEN position at panel 20C484A.
3	Verify SV-4948A Drywell Nitrogen Supply valve is open. (Cue: SV-4948A red light is on and green light is off.)	P	SV-4948A red light is verified ON at panel 20C484A.
*4	Open SV-4949A Drywell Nitrogen Supply Valve. (Cue: Acknowledge control switch operation.)	P	SV-4949A control switch is placed in the OPEN position at panel 20C484A.
5	Verify SV-4949A Drywell Nitrogen Supply Valve is open. (Cue: SV-4949A red light is on and green light is off.)	P	SV-4949A red light is verified ON at panel 20C484A.
*6	Open CV-4947A using HCS-4947A to obtain a flow rate of 60 scfm on FI-4947A. (Cue: [CLOCKWISE HCS-4947A manual adjustment knob is rotated.] HCS-4947A indicates 55% controller output; FI-4947A indicates 60 scfm; FR-4947A indicates 62 scfm.	P	HCS-4947A manual adjustment knob is rotated clockwise until 50 to 70 scfm is obtained on FI-4947A at panel 20C484A.
7	Obtain copy of SO 7J.7.C-2	P	Procedure obtained
*8.	On XIC-80411(B), Press "6" Key to enter monitor mode (Cue: Appropriate Display)	P	6 key depressed
*9.	At XIC-80411(B), Enter Access Code 82 and press ENTER Key (Cue: Appropriate Display)	P	"82" entered on keypad, ENTER key depressed
*10.	At XIC-80411(B), Press "3" Key to select CHANGE array (Cue: Appropriate Display)	P	3 key depressed

STEP NO	STEP	ACT	STANDARD
*11.	At XIC-80411(B), Press "5" Key to select MISCELLANEOUS array (Cue: Appropriate Display)	P	5 key depressed
*12.	At XIC-80411(B), Press "4" Key to select USER SYS array (Cue: Appropriate Display)	P	4 key depressed
*13.	At XIC-80411(B), when ENTER ELEMENT prompt appears, press 0 key (Cue: ENTER ELEMENT appears – appropriate display follows key entry)	P	WHEN ENTER ELEMENT appears, THEN 0 key depressed
*14.	At XIC-80411(B), Press "ENTER" Key (Cue: Appropriate Display)	P	ENTER key depressed
*15.	At XIC-80411(B), Press "3" Key to change false to true (Cue: "3" key depressed, display changes from FALSE to TRUE)	P	3 key depressed
*16	At XIC-80411(B), Press "ENTER" Key 3 times (Cue: Appropriate Display)	P	ENTER key depressed 3 times
*17	At XIC-80411(B), Press "ESC" Key 2 times (Cue: Appropriate Display)	P	ESC key depressed 2 times
18	Verify proper operation of analyzer by performing SO 7J.8.A-2. (Cue: Inform candidate that Routine Inspection is not required for purposes of JPM)	D	Use of Routine Inspection SO is acknowledged
19	Inform the Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknow-ledges report.)	P	Task completion reported.
20	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 nitrogen is being added to the Drywell at a flow rate of 60 scfm, and the second H2/O2 monitor is in service, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-322CA
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	001
AUTHOR:	J. R. Felice	TYPIST:	jav
TITLE:	DIESEL GENERATOR LOAD TEST (ALTERNATE PATH - LOAD CONTROL DIFFICULTY)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE:

_____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____ Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2640020101 / PLOR-322CA K/A: 264000A4.04
URO: 3.7 SRO: 3.7

TASK DESCRIPTION: Diesel Generator Load Test (Alternate Path - Load Control Difficulty)

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

Synchronizing Switch Removable Handle

C. REFERENCES

Procedure SO 52A.1.B, Rev. 42, "Diesel Generator Operations" (R)

D. TASK STANDARD

1. Satisfactory task completion is indicated when the E-43 breaker has been opened OR the E-4 Diesel Generator tripped by the examinee (due to E-4 Diesel Generator load control difficulty).

2. Estimated time to complete: 23 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, synchronize the E-4 Diesel to the E-43 bus and pick up 2600 KW and 1000 KVAR for testing purposes 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. The E-4 Diesel Generator has been "SLOW" started and is running in accordance with Section 4.1 of SO 52A.1.B, "Diesel Generator Operations."

2. The E-4 Diesel Generator is running at rated frequency and voltage.

3. The E-43 Bus is being supplied by 2SUE.

4. The ESW system is supplying Diesel Generator cooling water.

G. INITIATING CUE

The Control Room Supervisor directs you, the Plant Reactor Operator, to synchronize the E-4 Diesel Generator to the E-43 Bus and pick up 2600 KW and 1000 KVAR in accordance with Section 4.2 of SO 52A.1.B, "Diesel Generator Operations."

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure SO 52A.1.B.	P	A copy of procedure SO 52A.1.B is obtained.
2	Verify E-4 D/G is running at rated frequency and voltage. (Cue: E-4 D/G frequency is 60 HZ and voltage is 4280 volts.)	P	E-4 D/G frequency is verified at 58.8 to 61.2 Hz on E-4 D/G Freq. meter. E-4 D/G voltage is verified at 4.16 to 4.4 KV on E-4 D/G Volt meter.
*3	Insert Sync scope key in E-43 Breaker Sync Switch and turn ON. (Cue: Both Sync Scopes rotating, incoming and running lights "ON" at Bottom Dead Center and "OFF" at Top Dead Center.)	P	E-43 Breaker Sync Switch (3-125-1807) is placed in the "ON" position at panel 00C026A.
4	Verify E-4 D/G speed control. (Cue: "GOVERNOR" control switch raises, lowers frequency 0.5 Hz above/below the initial value, then returns to initial value.)	P	E-4 D/G frequency is raised to 60.5 Hz then lowered to 59.5 Hz on E-4 D/G FREQ meter using the "GOVERNOR" control switch (165-DG12) then returned to the initial value at panel 00C026D.
5	Verify E-4 D/G voltage control. (Cue: "AUTO VOLT REG" raises then lowers voltage 50 volts above/below initial value, then returns to initial value.)	P	E-4 D/G voltage is raised and lowered 50 volts above/below initial value on E-4 D/G volts meter using the "AUTO VOLT REG" control switch (90-DG14) then returned to the initial value at panel 00C026D.
6	Check both synchronizing lights for proper operation. (Cue: Both lights "ON" when sync scope at "Bottom Dead Center" and both lights "OFF" when sync scope at "Top Dead Center".)	P	Both sync lights are verified "ON" at Bottom Dead Center and "OFF" at Top Dead Center at panels 00C026A or 00C026C.

STEP NO	STEP	ACT	STANDARD
*7	Adjust E-4 D/G engine speed using "GOVERNOR" control switch until sync scope is rotating 1 revolution / 5 to 10 seconds in "FAST" direction. (Cue: Acknowledge control switch operation. Synchroscope is rotating 1 revolution / 5 to 10 seconds in the fast direction.)	P	Sync scope is verified rotating 1 revolution / 5 to 1 seconds in "FAST" direction at panels 00C026A OR 00C026C.
8	Adjust E-4 diesel generator voltage until "INCOMING" voltmeter is slightly higher than "RUNNING" voltmeter. (Cue: Acknowledge control switch operation. Incoming is slightly higher (50 volts) than running.)	P	Incoming voltmeter about 50 volts but less than 100 volts above bus voltage at panel 00C026C.
9	Verify sync scope rotating 1 revolution / 5 to 10 seconds in "FAST" direction. (Cue: Sync scope rotating 1 revolution / 5 to 10 seconds in "FAST".)	P	Sync scope is verified rotating 1 revolution / 5 to 10 seconds in "FAST" direction at Panels 00C026A OR 00C026C.
*10	Close the E-43 breaker when the sync scope is within 13 degrees of "Top Dead Center". (Cue: Acknowledge [CLOCKWISE] breaker control switch operation.)	P	When the sync scope is within 13 degrees of "Top Dead Center", the E-43 breaker control switch is taken to the "CLOSED" position and released at panel 00C026D.
11	Verify the E-43 breaker is closed. (Cue: E-43 breaker red light on, both sync scopes stopped at 12 o'clock and sync lights "OFF".)	P	E-43 breaker red light lit, sync scope stopped at 12 o'clock, and sync lights "OFF" verified at panel 00C026C and 00C026D.
*12	Immediately load the E-4 diesel to 200-300 KW by placing "Governor" control switch to "RAISE" (Cue: [CLOCKWISE, "GOVERNOR" control switch is taken to "RAISE"].	P	E-4 D/G KW load is promptly raised by momentarily placing the "GOVERNOR" control switch (165-DG12) to "RAISE" at panel 00C026D. No reverse power trip of the E-43 breaker occurs.
13	Verify E-4 D/G load is 200-300 KW. (Cue: E-4 D/G load is 250 KW.)	P	E-4 D/G load is verified to be 150 - 350 KW on the E-4 D/G KW meter at panel 00C026D.

STEP NO	STEP	ACT	STANDARD
14	Immediately load the E-4 Diesel Generator to 100 KVAR raised by placing the AUTO VOLT REG control switch in "RAISE" (Cue: [CLOCKWISE, AUTO VOLT REG control switch is taken to "RAISE"].	P	E-4 D/G KVAR load is promptly raised by momentarily placing the AUTO VOLT REG control switch (90-DG14) in "RAISE" at panel OOC026D.
15	Verify E-4 D/G load is 100 KVAR. (Cue: E-4 D/G load is 100 KVAR.)	P	E-4 D/G load is verified to be 50-150 KVAR on the E-4 D/G KVAR meter at panel OOC026D.
16	Place the E-43 "BKR SYNC" switch to "OFF". (Cue: Acknowledge COUNTERCLOCKWISE control switch operation.)	P	E-43 "BKR SYNC" switch taken to "OFF" at Panel 00C026D.
17	Verify the E-43 "BKR SYNC" in "OFF". (Cue: INCOMING AND RUNNING voltmeters drop to zero.)	P	"BKR SYNC" verified in "OFF" via INCOMING and RUNNING voltmeters dropping to zero.
18	Check generator output voltage for all 3 phases. (Cue: Acknowledge VOLT SEL switch operation, reading is 4280 Volts on each phase)	P	Generator output voltage is checked by rotating the VOLT SEL switch through positions "1-2", "2-3", "3-1" on panel OOC026D.
19	Check generator amperage for all 3 phases. (Cue: Acknowledge AMP SEL switch operation, reading is >0 Amps on each phase)	P	Generator amperage is checked by rotating the AMP SEL switch through positions "1", "2", "3".
***** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**			
20	Pick up desired KW and KVAR loading on E-4 D/G. Cue: [CLOCKWISE, "GOVERNOR" and AUTO VOLT REG control switches are momentarily placed in "RAISE".].	P	E-4 D/G "Governor" control switch (165-DG12) and AUTO VOLT REG control switches are momentarily placed in "RAISE".

STEP NO	STEP	ACT	STANDARD
21	Verify E-4 D/G load. (Cue: E-4 D/G load is 1500 KW and rising fast.)	P	E-4 D/G load is verified to be 1500 KW and rising fast on the E-4 D/G KW meter at panel 00C026D.
22	Attempt to reduce E-4 D/G loading rate to below 300 KW / minute. Cue: [COUNTERCLOCKWISE, "GOVERNOR" control switch is taken to "LOWER"].	P	E-4 D/G "GOVERNOR" control switch (165-DG12) taken to lower at panel 00C026D.
23	Verify E-4 D/G load. (Cue: E-4 D/G load is 2500 KW and rising fast.)	P	E-4 D/G load is verified to be 2500 KW and rising fast on the E-4 D/G KW meter at panel 00C026D.
24	Attempt to reduce E-4 D/G loading rate to below 300 KW / minute. Cue: [COUNTERCLOCKWISE, "GOVERNOR" control switch is taken to "LOWER"].	P	E-4 D/G "GOVERNOR" control switch (165-DG12) taken to lower at panel 00C026D.
25	Verify E-4 D/G load. (Cue: E-4 D/G load is approximately 3500 KW and stable.)	P	E-4 D/G load is verified to be approximately 3500 KW and stable on the E-4 D/G KW meter at panel 00C026D.
Note **SO 52A.1.B contains the following CAUTION: "CAUTION - Any operation over 3250 KW will require an engine shutdown, declaration of inoperability AND performance of an internal inspection." Any one of the three actions in Step 26 will reduce the engine loading.**			
*26	Reduce E-4 D/G loading to below 3000 KW OR trip the E-43 breaker OR stop the E-4 D/G. Cue: ([COUNTERCLOCKWISE], "GOVERNOR" control switch is taken to "LOWER" OR E-43 breaker control switch placed in "TRIP" OR the E-4 D/G control switch placed in "STOP."	P	E-4 D/G "GOVERNOR" control switch (165-DG12) is promptly taken to lower until E-4 D/G load is below 3000 KW OR the E-43 breaker control switch is taken to the "TRIP" position and released OR the E-4 D/G control switch is taken to "STOP" and released at panel 00C026D.

STEP NO	STEP	ACT	STANDARD
27	Verify action taken in the previous step. (Cue: E-4 D/G load is below 3000 KW and stable OR E-43 breaker green light on, red light off, KW and KVAR load indicated zero.)	P	E-4 D/G load is verified below 3000 KW and stable on the E-4 D/G KW meter at panel 00C026D OR the E-43 breaker green light on, red light off, KW and KVAR load indicate zero at panel 00C026D.
	***** NOTE ***** **JPM Steps 28 through 35 do not apply if the E-43 breaker or E-4 D/G were tripped in the above step.**		
28	Reduce E-4 D/G loading to 1300 KW. Cue: [COUNTERCLOCKWISE, "GOVERNOR" control switch is taken to "LOWER"].	P	E-4 D/G "GOVERNOR" control switch (165-DG12) is taken to lower at panel 00C026D. E-4 D/G is run at 1300 KW for 5 minutes.
29	Verify E-4 D/G load. (Cue: E-4 D/G load is 1300 KW and stable – 5 minutes have elapsed)	P	E-4 D/G load is verified 1300 KW on the E-4 D/G KW meter at panel 00C026D.
30	Reduce E-4 D/G loading to 100 -150 KW. Cue: [COUNTERCLOCKWISE, "GOVERNOR" control switch is taken to "LOWER"].	P	E-4 D/G "GOVERNOR" control switch (165-DG12) is taken to lower at panel 00C026D.
31	Verify E-4 D/G load. (Cue: E-4 D/G load is 100 - 150 KW and stable.)	P	E-4 D/G load is verified 50 - 200 KW on the E-4 D/G KW meter at panel 00C026D.
32	Reduce E-4 D/G load to 50 KVAR. (Cue: [COUNTERCLOCKWISE, AUTO VOLT REG control switch is taken to "LOWER"].	P	E-4 D/G KVAR load is LOWERED by momentarily placing the AUTO VOLT REG control switch (90-DG14) in "LOWER" at panel OOC026D until E-4 D/G load is 25 - 75 KVAR.
33	Verify E-4 D/G load at 50 KVAR. (Cue: E-4 D/G load is 50 KVAR.)	P	E-4 D/G load is verified 25 - 75 KVAR on the E-4 D/G KVAR meter at panel 00C026D
*34	Trip the E-43 breaker. (CUE: Acknowledge COUNTERCLOCKWISE control switch operation.)	P	The E-43 breaker control switch is taken to the "TRIP" position and released at panel 00C026D.

STEP NO	STEP	ACT	STANDARD
35	Verify the E-43 breaker is open. (CUE: E-43 breaker green light on, red light off, KW and KVAR load indicate zero.)	P	Verify E-43 breaker green light on, red light off, KW and KVAR load indicate zero at panel 00C026D.
36	Shutdown the EDG by taking the Control Switch to STOP. (CUE: Control Switch placed in STOP)	P	Control Switch placed in STOP.
36	Notify the Control Room Supervisor that the E-43 breaker is open, the E-4 D/G is inoperable and that an internal inspection of the E-4 D/G is required. (CUE: Control Room Supervisor acknowledges report.)	P	Information provided to the Control Room Supervisor.
37	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-43 breaker is opened OR D/G tripped by the examinee, then the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-270C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	ECW System Makeup to Tower using ESW System		

APPROVALS:

_____
Signature / Title Date

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Signature / Title Date

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Signature / Title Date

_____
Signature / Title Date

APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____
Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2770140401 / PLOR-270C K/A: 400000 A4.01
URO: 3.1 SRO: 3.0

TASK DESCRIPTION: ECW System Makeup to Tower using ESW System

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 AO 48.1 Rev 5 "Emergency Cooling Water System Makeup to Tower Using the Emergency Service Water System"

D. TASK STANDARD

1. Satisfactory task completion is indicated when:

   Emergency Cooling Tower level is at or about 18 Ft 3 In, and Emergency Service Water is returned to a standby lineup.

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

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to makeup to the Emergency Cooling Tower with the Emergency Service Water system 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. Emergency Cooling Water tower level is 17 ft.

2. No Emergency Diesel Generators are in service.

3. The ESW System is lined up for normal operation in accordance with SO 33.1.A, "Emergency Service Water System Setup for Normal Standby Operation".

4. Att 1 of AO 48.1 "ECW System Makeup to Tower Using the ESW System" is complete.

G. INITIATING CUE

The Control Room Supervisor directs you to makeup to the Emergency Cooling Tower to a level of 18 ft 3 in, then restore to a normal lineup, using AO 48.1 "Emergency Cooling Water System Makeup to the Tower Using the Emergency Service Water System."

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure AO 48.1.	P	A copy of procedure AO 48.1 is obtained.
2	Verify open MO-0501A(B,C) "ESW Inlet". (Cue: Valve(s) Red lights On, Green lights Off.)	P	On Panel 00C123, at least ONE valve (MO-0501A, B, or C) verified Open.
*3	Start "A" OR "B" ESW Pump. (Cue: Acknowledge control switch operation.)	P	On Panels 00C026B/00C026C, A or B ESW pump control switch manipulated.
4	Verify "A" OR "B" ESW Pump operating as expected. (Cue: Red Light On, Pump amps initially peg high then settle at about 26 amps, discharge pressure is 50 psig.)	P	ESW pump parameters verified to be in expected range per SO 33.8.B.
*5	Depress M0-0498, "Permit to Close" pushbutton (Cue: Acknowledge pushbutton operation)	P	On Panel 00C123, MO-0498 "Permit to Close" pushbutton depressed.
*6	Close M0-0498, "ESW Disch to Pond". (Cue: Acknowledge control switch operation)	P	On Panel 00C123, M0-0498, "ESW Disch to Pond" is taken to Close
7	Verify MO-0498 is closed. (Cue: Red light ON, Green Light OFF.)	P	MO-0498 verified CLOSED.
8	Verify the "AUTO" ESW Booster Pump starts. (Cue: Red light lit, motor current 30 amps, discharge pressure 50 psig, Alarm ARC-212 A-1, ESW Booster Pump A or B Auto-Start in Alarm.)	P	WHEN M0-0498 is closed, THEN verify the following: - The "AUTO" ESW Booster Pump starts. - Motor current 30 amps (25 to 35 amps) as indicated on "A ESW Booster Pump" ammeter on Panel 00C123 - Discharge pressure 50 psig (40 to 65 psig) as indicated on PI-0550, "ESW Booster Pump Disch Header" on Panel 00C123.

STEP NO	STEP	ACT	STANDARD
	NOTE **In the following step, ECT level as indicated on LI-0503 WILL NOT CHANGE, so this information must be CUED to the Candidate.**		
9	Monitor ECT reservoir level. (Cue: ECT reservoir level is slowly rising.) (Cue: Inform candidate that ECT level is now 18 feet, 3 inches.)	P	Observe level indicator LI-0503, "Clg Twr" on Panel 00C123.
*10	Shutdown the ESW booster pump by taking the "A" and "B" pump control switches in OFF. (Cue: Acknowledge switch operation.)	P	"A" and "B" ESW Booster Pump control switches taken to OFF.
11	Verify "A" OR "B" ESW Booster Pump shutdown as expected. (Cue: Red light OFF, Green light ON, Pump amps 0, discharge pressure is 0 psig.)	P	ESW Booster pump parameters verified to be as expected for shutdown pump.
*12	Open MO-0498. (Cue: Acknowledge switch operation.)	P	Control switch taken to OPEN.
*13	Shutdown the running ESW pump. (Cue: Acknowledge switch operation.)	P	Running ESW Pump control switch taken to OFF.
14	Verify "A" OR "B" ESW Pump shutdown as expected. (Cue: Red light OFF, Green light ON, Pump amps 0, discharge pressure is 0 psig.)	P	ESW pump parameters verified to be as expected for shutdown pump.
15	Verify MO-0498 Open. (Cue: Red light ON, Green light OFF.)	P	MO-0498 verified OPEN.
*16	Place "A" ESW Booster Pump switch in AUTO position. (Cue: Acknowledge switch operation.)	P	"A" ESW Booster Pump placed in AUTO.
*17	Place "B" ESW Booster Pump switch in AUTO STDBY position. (Cue: Acknowledge switch operation)	P	"B" ESW Booster Pump placed in AUTO STDBY.

STEP NO	STEP	ACT	STANDARD
18	Direct Equipment Operator to return DG Heat Exchanger outlet valves to normal lineup by completing Att 2 of AO 48.1. (Cue: Acknowledge direction to perform Att 2 – Report Att 2 complete.)	P	EO directed to perform Att 2 of AO 48.1.
19	Direct Equipment Operator to drain ESW Piping IAW SO 48.4.A (Cue: Inform candidate that this is not required for this JPM)	P	EO directed to perform SO 48.4.A.
20	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
21	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 lineup for making up to the Emergency Cooling Tower is secured, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-018C
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	013
AUTHOR:	J. R. Felice	TYPIST:	mda
TITLE:	MANUALLY PLACE SBGT ON EQUIPMENT CELL EXHAUST		

APPROVALS:

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

_____
Signature / Title Date

APPROVED FOR USE:

_____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

_____
Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2610070101 / PLOR-018C K/A: 295017AA1.09
RO: 3.6 SRO: 3.8

TASK DESCRIPTION: Manually Place SBGT on Equipment Cell Exhaust

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. Procedure SO 9A.7.G Rev. 13, "SBGT Manual Startup on Equipment Cell Exhaust" (R)

2. ST-0-09A-500-2 Rev. 4, "SBGT Filter Train Operation Log" (A)

D. TASK STANDARD

1. Satisfactory task completion is indicated when SBGT operating on Equipment Cell Exhaust.

2. Estimated time to complete: 9 minutes (A.5) Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to place SBGT on Equipment Cell Exhaust 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. Standby Gas Treatment System lined up for automatic operation per SO 9A.1.A, "Standby Gas Treatment System Lineup for Automatic Operation"

2. Operator stationed at Reactor Building Vent Panel 20C132.

3. Standby Gas Treatment Filter Train "A" has the least amount of run-hours.

G. INITIATING CUE

The Control Room Supervisor directs you to place SBGT on Equipment Cell Exhaust using SSO 9A.7.G,"Standby Gas Treatment System Manual Startup on Equipment Cell Exhaust".

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure SO 9A.7.G.	P	A copy of procedure SO 9A.7.G is obtained.
2	Notify Health Physics that SBGT is to be started on Unit 2 Equipment Cell Exhaust. (Cue: Health Physics acknowledges notification.)	P	Health Physics notified that SBGT is to be started on Unit 2 Equipment Cell Exhaust.
*3	Open PO-20465, Exh To SBGT Equip Cell Damper. (Cue: Acknowledge control switch operation.)	P	PO-20465 control switch placed in the OPEN position at panel 20C012.
4	Verify PO-20465, Exh To SBGT Equip Cell Damper is open. (Cue: PO-20465 red light is on, green light is off.)	P	PO-20465 red light verified ON at panel 20C012.
*5	Open AO-20469-1, SBGT DW Rx Bldg Exh Damper. (Cue: Acknowledge control switch operation.) (Evaluator Note: This step is critical IF AO-20469-2 is NOT opened.)	P	AO-20469-1 control switch placed in the OPEN position at panel 20C012.
6	Verify AO-20469-1, SBGT DW Rx Bldg Exh Damper is open. (Cue: AO-20469-1 red light is on, green light is off.)	P	AO-20469-1 red light verified ON at panel 20C012.
*7	Open AO-20469-2, SBGT DW Rx Bldg Exh Damper. (Cue: Acknowledge control switch operation.) (Evaluator Note: This step is critical IF AO-20469-1 is NOT opened.)	P	AO-20469-2 control switch is placed in the OPEN position at panel 20C012.

STEP NO	STEP	ACT	STANDARD
8	Verify AO-20469-2, SBGT DW Rx Bldg Exh Damper is open. (Cue: AO-20469-2 red light is on, green light is off.)	P	AO-20469-2 red light verified ON at panel 20C012.
*9	Open AO-00475-1, SBGT "A" Filter Inlet Damper. (Cue: Acknowledge control switch operation.)	P	AO-00475-1 control switch is placed in the OPEN position at panel 20C012.
10	Verify AO-00475-1, SBGT "A" Filter Inlet Damper is open. (Cue: AO-0475-1 red light is on, green light is off.)	P	AO-00475-1 red light verified ON at panel 20C012. Acknowledges annunciator 216 A-5 "SBGT Filters Not in Auto".
*11	Open AO-00475-2, SBGT "A" Filter Outlet Damper. (Cue: Acknowledge control switch operation.)	P	AO-00475-2 control switch is placed in the OPEN position at panel 20C012.
12	Verify AO-00475-2, SBGT "A" Filter Outlet Damper is open. (Cue: AO-00475-2 red light is on, green light is off.)	P	AO-00475-2 red light verified ON at panel 20C012.
*13	Start "A" SBGT Fan. (Cue: Acknowledge control switch operation.)	P	"A" SBGT Fan control switch is placed in the RUN position at panel 20C012.
14	Verify the "A" SBGT Fan Start. (Cue: Flow rises to approx. 6000 SCFM on FR-20008 and "A" SBGT Filter ΔP rises to 1" H_2O on DPI-20001 "A" SBGT Fan red light is on, green light is off.)	P	SBGT Flow rises to approx. 6000 SCFM on FR-20008, "A" SBGT Filter ΔP rises to 1" H_2O on DPI-20001 and "A" SBGT Fan red light verified ON at panel 20C012.
15	Wait 3 to 5 seconds after "A" SBGT fan starts to close AO-20467.	P	AO-20467 is closed more than 3 seconds after "A" SBGT fan is started.
*16	Close AO-20467, Ventilation Exhaust Equip Cell Damper. (Cue: Acknowledge control switch operation.)	P	AO-20467 control switch is placed in the CLOSE position at panel 20C012.

STEP NO	STEP	ACT	STANDARD
17	Verify AO-20467, Ventilation Exhaust Equip Cell Damper is closed. (Cue: AO-20467 green light is on, red light is off.)	P	AO-20467 green light verified ON at panel 20C012.
*18	Close AO-20468, Ventilation Exhaust Equip Cell Damper. (Cue: Acknowledge control switch operation.)	P	AO-20468 control switch is placed in the CLOSE position at panel 20C012.
19	Verify AO-20468, Ventilation Exhaust Equip Cell Damper is closed. (Cue: AO-20468 green light is on, red light is off.)	P	AO-20468 green light verified ON at panel 20C012. Acknowledges annunciator 216 L-1.
20	Direct Equipment Operator to verify Equipment Cell Exhaust Fans 2AV18 and 2BV18 are not running and verify the control switches for both of the Equipment Cell Exhaust Fans are in "OFF". (Cue: Equipment Operator reports 2AV18 and 2BV18 are not running and both of the Equipment Cell Exhaust Fan control switches are in "OFF".)	P	Equipment Operator directed to verify the Equipment Cell Exhaust Fans not running and Fan control switches in "OFF".
21	Verify proper operation of the SBGT system. (Cue: SBGT Filter DP is in the Expected Performance Region of SO 9A.7.G, Figure 1.)	P	The "A" SBGT Filter DP is verified to be in Expected Performance Region of Figure 1 of SO 9A.7.G and SBGT System flow is verified to be between 2000 and 9000 SCFM on FR-20008.
22	Verify Unit 2 Reactor Building differential pressure between -.1 and -.4" H_2O as indicated on DPI-20003-01. (Cue: Reactor Building DP is between -0.1 and –0.4" H_2O.)	P	Reactor Building DPI-20003-01 indicates between -.1 and -.4" H_2O.
23	Verify Unit 2 Refuel Floor differential pressure between -.1 and -.4" H_2O as indicated on DPI-20003-02. (Cue: Refuel Floor DP is between -0.1 and –0.4" H_2O.)	P	Equipment Operator is directed to verify Refuel Floor DPI-20003-02 indicates between -.1 and -.4" H_2O.

STEP NO	STEP	ACT	STANDARD
24	Log start time in the SBGT Filter Train Run Log in accordance with ST-O-09A-500-2. (Cue: Start time is logged in ST-O-09A-500-2.)	P	Logs start time in ST-O-09A-500-2, Data Sheet 1.
25	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	P	Task completion reported.
26	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 Equipment Cell Exhaust is placed on Standby Gas Treatment, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-313PA
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #::	006
AUTHOR:	J.A. Verbillis	TYPIST:	jav
TITLE:	CLOSING A STUCK OPEN MSIV – ALTERNATE PATH (UNIT 3)		

APPROVALS:

_____ _____
Signature / Title Date

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Signature / Title Date

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Signature / Title Date

_____ _____
Signature / Title Date

APPROVED FOR USE: _____ _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)	ISSUE DATE: _____
EMPLOYEE ID NO. _____	COMPLETION DATE: _____
COMMENTS:	

Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2390110401 / PLOR-313PA K/A: 239001A2.12
URO: 4.2 SRO: 4.3

TASK DESCRIPTION: Closing a Stuck Open MSIV – Alternate Path (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

1. Insulated Fuse Pullers

2. Radio

3. AO 1A.2-3, Rev. 10 "Closing a Stuck Open Inboard or Outboard Main Steam Isolation Valve"

4. SO 16A.7.A-3 "Backup Instrument Nitrogen to ADS System Manual Actuation"

C. REFERENCES

1. AO 1A.2-3, Rev. 10 "Closing a Stuck Open Inboard or Outboard Main Steam Isolation Valve"

2. SO 16A.7.A-3 "Backup Instrument Nitrogen to ADS System Manual Actuation"

D. TASK STANDARD

1. Satisfactory task completion is indicated when the Unit 3 Reactor Building 135' Elevation Instrument Air headers have been vented.

2. Estimated time to complete: 22 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to close the stuck open outboard MSIVs using AO 1A.2-3, "Closing a Stuck Open Inboard or Outboard Main Steam Isolation Valve". 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 is "Shutdown").

2. RPV level is -175 inches (Group 1 isolation signal is present).

3. All outboard MSIVs failed to isolate.

4. Proper operation of SGIG system has been verified in accordance with SO 16B.8.A-3, "Backup Seismic Instrument Nitrogen System Routine Inspection".

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

G. INITIATING CUE

The Control Room Supervisor directs you to close the Unit 3 Outboard MSIVs in accordance with AO 1A.2-3, "Closing a Stuck Open Inboard or Outboard Main Steam Isolation Valve", beginning with step 4.1.3 and continuing with procedure till outboard MSIVs are closed.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure AO 1A.2-3 and a set of insulated fuse pullers.	P	A copy of procedure AO 1A.2-3 and a set of insulated fuse pullers are obtained.
	**** NOTE **** **Examinee should utilize sections 4.1 AND 4.4 of AO 1A.2-3.**		
2	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.
*3	Pull the outboard MSIV AC solenoid valve fuse F4 (16A-F12B, 4th fuse from top) of terminal strip BB. (Cue: Fuse is removed.)	S	Fuse puller is attached to outboard MSIV AC solenoid valve fuse F8 (16A-F12B) fuse is pulled outward until fuse is free of fuse holder.
4	Direct the Unit Reactor Operator to monitor outboard MSIV position indication. (Cue: Outboard MSIVs are open.)	S	Unit Reactor Operator is contacted to monitor outboard MSIV position indication.
	****** NOTE: ****** **The Alternate Path portion of this JPM begins with the next step.**		
*5	Pull the outboard MSIV DC solenoid valve fuse F8 (16A-F11B, 8th fuse from top) of terminal strip BB (Cue: Fuse is removed.)	S	Fuse puller is attached to outboard MSIV DC solenoid valve fuse F8 (16A-F11B). Fuse is pulled outward until fuse is free of fuse holder.
6	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 are NOT reading downscale. Position indication for all outboard MSIVs has been lost.)	S	Unit Reactor Operator is contacted to monitor Main Steam line flow on FI-3-06-088A, B, C, D at panel 30C008A.
*7	Install F8 (16A-F11B, 8th fuse from top) of terminal strip BB. (Cue: Fuse is installed.)	S	Fuse puller is attached to outboard MSIV DC solenoid valve fuse F8 (16A-F11B). Fuse is inserted until fuse is installed in fuse holder.
8	Direct Unit Reactor Operator to unlatch and release test pushbutton for the Outboard MSIV. (Cue: Pushbutton released)	S	Unit Reactor Operator directed to unlatch and release test pushbutton.
9	Close panel 30C042 front panel doors. (Cue: Panel 30C042 doors are closed.)	P	Door closed and re-latched using handle.

STEP NO	STEP	ACT	STANDARD
10	Direct the Unit Reactor Operator to verify RWCU isolation. (Cue: RWCU is isolated.)	S	Unit Reactor Operator is contacted to verify RWCU isolation.
11	Direct the Unit Reactor Operator to open Backup N_2 to ADS valves SV-9130A AND B in accordance with SO 16A.7.A-3. (Cue: SV-9130A AND B are open in accordance with SO 16A.7.A-3. If asked to verify proper operation of SGIG system, then report that the SGIG system is operating properly in accordance with SO 16B.8.A-3.)	S	Unit Reactor Operator is contacted to verify Backup N_2 to ADS valves SV-9130A AND B in accordance with SO 16A.7.A-3.
*12	Close Instrument Air A Header Isolation valves HV-3-36B-56981A (Cue: The valve handwheel has been turned clockwise until it will turn no further.)	S	HV-3-36B-56981A handwheel turned clockwise until the resistance of the valve seat is felt (3B Recirc MG Set area).
*13	Close Instrument Air B Header Isolation valves HV-3-36B-56981B (Cue: The valve handwheel has been turned clockwise until it will turn no further.)	S	HV-3-36B-56981B handwheel turned clockwise until the resistance of the valve seat is felt (3B Recirc MG Set area).
14	Verify open Instrument Air Supply to DT-5695 Inlet Block valve HV-3-36B-54642. (Cue: The valve handwheel is turned slightly in the clockwise direction and then turned counterclockwise to the original position.	S	An attempt is made to turn HV-3-36B-54642 handwheel is turned slightly in the clockwise direction and then turned counterclockwise to the original position (3B Recirc MG Set area).
15	Verify open Instrument Air Supply to DT-5696 inlet block valve HV-3-36B-54643. (Cue: The valve handwheel is turned slightly in the clockwise direction and then turned counterclockwise to the original position.	S	An attempt is made to turn HV-3-363-54643 handwheel is turned slightly in the clockwise direction and then turned counterclockwise to the original position (3B Recirc MG Set area).
16	Notify the Control Room that venting is commencing and to perform more frequent monitoring of MSIV position. (Cue: Control Room acknowledges notification.)	S	Unit Reactor Operator is contacted and notified of venting and Outboard MSIV position monitoring.

STEP NO	STEP	ACT	STANDARD
*17	Simultaneously press and hold Drain Trap Bypass switches HS-3-36B-5695 AND HS-3-36B-5696. (Cue: HS-3-36B-5695 AND HS-3-36B-5696 are simultaneously depressed and held. You hear air flowing from both Drain Traps. The sound of the air flowing through the drain traps is diminishing.)	S	Drain Trap Bypass pushbuttons HS-3-36B-5695 AND HS-3-36B-5696 are simultaneously depressed and held (3B Recirc MG Set area).
18	When it is reported that all Unit 3 Outboard MSIVs are closed, then release both Drain Trap Pushbuttons HS-3-36B-5695 and HS-3-36B-5696. (Cue: You hear a report through your radio that all of the Unit 3 Outboard MSIVs are closed and both Drain Trap Pushbuttons HS-3-36B-5695(6) may be released.)	S	Drain Trap Bypass pushbuttons HS-3-36B-5695 AND HS-3-36B-5696 are released (3B Recirc MG Set area).
19	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report. Outboard MSIVs are closed.)	S	Task completion reported using telephone, hand held radio or GAI-TRONICS page system.
20	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 Unit 3 outboard MSIVs are closed, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	X JPM ☐ QUALIFICATION MANUAL ☐ OJT MODULE		
PROGRAM:	Licensed Operator Training	CODE #:	PLOR-075P
COURSE:	Licensed Operator Requalification	REV #:	015
AUTHOR:	J. R. Felice	TYPIST:	jav
TITLE:	SCRAM SOLENOID DE-ENERGIZATION - UNIT 2 (T-213-2)		

APPROVALS:

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

_____ Signature / Title _____ Date

APPROVED FOR USE: _____ Signature / Title _____ Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____ (Last First M.I.)	ISSUE DATE: _____
EMPLOYEE ID NO. _____	COMPLETION DATE: _____
COMMENTS:	

Training Review for Completeness: _____ Signature/Date	LMS CODE:	
	LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2003730599 / PLOR-075P K/A: 295037EA1.01
RO: 4.6 SRO: 4.6

TASK DESCRIPTION: Scram Solenoid De-energization - Unit 2 (T-213-2)

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

1. T-213-2 Tool Package from the Main Control Room Emergency Operating Procedure Tool Box

2. EOP Tool Box Key

3. Screwdriver

C. REFERENCES

Procedure T-213-2, Rev. 10, "Scram Solenoid De-energization" (R)

D. TASK STANDARD

1. Satisfactory task completion is indicated when Unit 2 Control Rod 06-15 scram solenoid fuses are removed.

2. Estimated time to complete: 5 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to de-energize Unit 2 Control Rod 06-15 scram solenoids 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 was initially at 100% power.

2. RPV level then drops to the scram setpoint due to partial loss of Feedwater flow.

3. Control Rod 06-15 and Control Rod 22-43 are stuck at position 48 with their blue scram lights NOT lit on the Full Core Display.

4. All "Control Rod Drive Scram Solenoid Group 1, 2, 3, 4" white lights are lit.

5. Use of procedure T-213-2, "Scram Solenoid De-energization" has been directed by the TRIP procedures.

6. Procedure steps up to and including step 4.3 of procedure T-213-2 have been completed.

7. The Scram Discharge Volume (SDV) is not isolated.

G. INITIATING CUE

The Control Room Supervisor directs you, the Equipment Operator, to de-energize Unit 2 Control Rod 06-15 scram solenoids in accordance with Step 4.4 of procedure T-213-2, "Scram Solenoid De-energization".

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
*1	Obtain the key for the Emergency Operating Procedure Tool Locker. (Cue: When examinee requests EOP Tool Locker key from WECS OR examinee identifies the location of the WECS key box and its associated key then evaluator should provide the EOP Tool Locker key. Examinee may produce their copy of Tool Locker Key.)	S	Emergency Operating Procedure Tool Locker Key requested from WECS OR examinee identifies the location of the WECS key box and its associated key. Produces own copy of Tool Locker Key.
*2	Open Emergency Operation Procedure Tool Locker and obtain T-213 Tool Kit equipment. (Cue: Equipment obtained.)	P	Tool Locker (located on Radwaste Building El. 165') is unlocked, opened and T-213 Tool Kit is located.
	****NOTE***** **When examinee locates tool kit, inform him that he now has the tools to perform the procedure. Provide the examinee with a screwdriver and a copy of the T-200 procedure which corresponds to the tool kit that has been chosen. DO NOT allow equipment to be removed from the locker. Relock the locker before leaving the area.**		
*3	Open panel 2AC068 door. (Cue: Panel 2AC068 door is open.)	P	Panel fasteners unfastened, door pulled outward to gain access to Control Rod 06-15 fuses.
*4	Pull the Channel A fuse for Control Rod 06-15. (Cue: Fuse is removed.)	S	Control Rod 06-15 Channel A fuse is removed from the top left side of panel 2AC068 using fuse puller from T-213-2 Tool Kit.
*5	Pull the Channel B fuse for Control Rod 06-15. (Cue: Fuse is removed. Control Room reports Control Rod 06-15 is inserting.)	S	Control Rod 06-15 Channel B fuse is removed from the top right side of panel 2AC068 using fuse puller from T-213-2 Tool Kit.
6	Initial on Table 1 by Control Rod 06-15. (Cue: Acknowledge initialing Table 1.)	P	T-213-2, Table 1 is initialed under "FUSES REMOVED" column by Control Rod 06-15.

STEP NO	STEP	ACT	STANDARD
7	Inform Control Room of task completion. (Cue: Control Room acknowledges report. Control Rod 06-15 blue scram lights are lit.)	S	Task completion reported using telephone, hand held radio or GAI-TRONICS page system.
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 Control Rod 06-15 scram solenoid fuses have been pulled, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

EXELON NUCLEAR
Nuclear Generation Group

OJT/TPE MATERIAL COVERSHEET

X	Peach Bottom		Limerick		Common

TYPE:	[X] JPM [ ] QUALIFICATION MANUAL [ ] OJT MODULE		
PROGRAM:	LICENSED OPERATOR TRAINING	CODE #:	PLOR-271P
COURSE:	LICENSED OPERATOR REQUALIFICATION	REV #:	000
AUTHOR:	J. A. Verbillis	TYPIST:	jav
TITLE:	BACKUP INSTRUMENT NITROGEN TO ADS SYSTEM STARTUP AND OPERATION (Unit 3)		

APPROVALS:

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Signature / Title Date

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Signature / Title Date

APPROVED FOR USE: _____
Signature / Title Date

EFFECTIVE DATE: _____/_____/_____

NAME: _____
Last First M.I.

EMPLOYEE ID NO. _____

ISSUE DATE: _____

COMPLETION DATE: _____

COMMENTS:

Training Review for Completeness:

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Signature/Date

LMS CODE:	
LMS ENTRY:	

EXELON NUCLEAR
PEACH BOTTOM ATOMIC POWER STATION
JOB PERFORMANCE MEASURE

POSITION TITLE: Unit Reactor Operator/Senior Reactor Operator

TASK-JPM DESIGNATOR: 2180060101/ PLOR-271P K/A: 218000A2.03

URO: 3.4 SRO: 3.6

TASK DESCRIPTION: Backup Instrument Nitrogen to ADS System Startup and Operation (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

None

C. REFERENCES

Procedure SO 16A.1.A-3 Rev. 5, "Backup Instrument Nitrogen to ADS Startup and Operation"

D. TASK STANDARD

1. Satisfactory task completion is indicated when backup Instrument Nitrogen to ADS has been lined up locally.

2. Estimated time to complete: 23 minutes Non-Time Critical

E. DIRECTIONS TO EXAMINEE

When given the initiating cue, perform necessary steps to line up Backup Instrument Nitrogen to the ADS relief valves using SO 16A.1.A-3, "Backup Instrument Nitrogen to ADS Startup and Operation". I will describe initial plant conditions and provide you access to the materials required to complete this task.

F. TASK CONDITIONS/PREREQUISITES

1. The Prerequisites listed in SO 16A.1.A-3 "Backup Instrument Nitrogen to ADS Startup and Operation" are met.

2. COL 16A.1.A-3 "Backup Instrument Nitrogen to ADS System" has been performed.

G. INITIATING CUE

The Control Room Supervisor directs you to perform steps 4.2 through 4.5 of SO 16A.1.A-3 "Backup Instrument Nitrogen to ADS Startup and Operation" in order to lineup Backup Instrument Nitrogen to the Unit 3 ADS relief valves using all three bottles.

H. PERFORMANCE CHECKLIST

STEP NO	STEP	ACT	STANDARD
1	Obtain a copy of procedure SO 16A.1.A-3.	P	A copy of procedure SO 16A.1.A-3 is obtained.
	******NOTE****** **Inform the examinee the individual bottle PCV outlet pressure indicators and header pressure indicator (PI-9130) read zero psig. Individual bottle pressures indicate 2200 psig.**		
*2	Open or verify open nitrogen bottle 3AS377 Block Valve. (Cue: Acknowledge block valve operation.)	S	HV-3-16A-33153A is turned slowly in the counterclockwise direction.
*3	Open or verify open nitrogen bottle 3BS377 Block Valve. (Cue: Acknowledge block valve operation.)	S	HV-3-16A-33153B is turned slowly in the counterclockwise direction.
*4	Open or verify open nitrogen bottle 3CS377 Block Valve. (Cue: Acknowledge block valve operation.)	S	HV-3-16A-33153C is turned slowly in the counterclockwise direction.
*5	Slowly open the nitrogen bottle isolation valves for 3AS377, 3BS377 and 3CS377. (Cue: Acknowledge isolation valve operation.)	S	Nitrogen bottle isolation valves 3A(B, C) 377 are slowly turned in the counterclockwise direction.
*6	Adjust nitrogen bottle 3AS377 pressure control valve to obtain ≥ 95 psig. (Cue: Acknowledge PCV operation, pressure indicator for bottle 3AS377 indicates 95 psig.)	S	PCV-3-16A-9917A handle is turned clockwise until ≥ 95 psig is obtained on bottle 3AS377 pressure indicator.
*7	Adjust nitrogen bottle 3BS377 pressure control valve to obtain ≥ 95 psig. (Cue: Acknowledge PCV operation, pressure indicator for bottle 3BS377 indicates 95 psig.)	S	PCV-3-16A-9917B handle is turned clockwise until ≥ 95 psig is obtained on bottle 3BS377 pressure indicator.

STEP NO	STEP	ACT	STANDARD
*8	Adjust nitrogen bottle 3CS377 pressure control valve to obtain ≥ 95 psig. (Cue: Acknowledge PCV operation, pressure indicator for bottle 3CS377 indicates 95 psig.)	S	PCV-3-16A-9917C handle is turned clockwise until ≥ 95 psig is obtained on bottle 3CS377 pressure indicator.
9	Request URO to verify Backup Nitrogen is ≥ 95 psig on PI-9142 located on 30C003 panel. (Cue: Unit Reactor Operator acknowledges request and reports that PI-9142 indicates 95 psig.)	S	Control Room is requested via telephone, radio, or GAI-TRONICS page system to verify that backup nitrogen pressure is ≥ 95 psig on PI-9142.
10	Inform Control Room Supervisor of task completion. (Cue: Control Room Supervisor acknowledges report.)	S	Task completion reported using telephone, hand held radio, or GAI-TRONICS page system.
11	As an evaluator ensure that you have positive control of all 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 Instrument Nitrogen to ADS System has been lined up locally and the URO verifies ≥ 95 psig Backup Instrument Nitrogen pressure indication, the Control Room Supervisor should be informed. The evaluator will then terminate the exercise.

Simulation Facility Peach Bottom **Scenario No.** #1 (new) **Op Test No.** 2009 NRC

Examiners _____ **Operators** _____ CRS (SRO)

_____ _____ URO (ATC)

_____ _____ PRO (BOP)

Scenario Summary The scenario begins with the reactor at approximately 5% power during a reactor startup. Following shift turnover, the crew is directed to secure drywell purge in preparation for inerting the drywell. Once drywell purge is secured, the crew should continue with the reactor startup by pulling control rods in accordance with the approved startup sequence. During this evolution a control rod will drift out, requiring the crew to execute ON-121 "Drifting Control Rod" and declare the affected control rod inoperable in accordance with Tech Specs.

After the actions for the drifting control rod are complete, the 'B' drywell chiller will trip. The crew should place a standby drywell chiller in service in accordance with the system operating procedure. Next, a blown fuse will cause an ARI power supply failure, requiring the crew to initiate repairs and evaluate ARI-RPT operability per Tech Specs. This will be followed by an APRM trip with an auto scram failure, requiring the crew to initiate a manual scram. A SULCV failure will complicate RPV level control post-scram.

Following the scram, a leak will develop in the torus, requiring the crew to enter T-103 "Secondary Containment Control" and T-102 "Primary Containment Control". A failure of the turbine bypass jack will require the crew to use alternate methods to depressurize the reactor in accordance with T-101 "RPV Control". Torus level will continue to lower to the point where the crew will be required to perform T-112 "Emergency Blowdown".

Initial Conditions IC-91, 5% power

Turnover See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*		Event Description
1		N	PRO CRS	Secure drywell purge
2		R	URO CRS	Power ascension with control rods
3		C TS	URO PRO CRS	Drifting control rod (Tech Spec)
4		C	PRO CRS	Drywell chiller trip / place standby chiller in service
5		TS	CRS	ARI power supply failure (Tech Spec)
6		I	URO CRS	APRM trip with auto scram failure / manual reactor scram
7		M	ALL	Torus leak into secondary containment / emergency blowdown
8		I	URO CRS	Startup level control valve (LCV-8091) failure
9		C	PRO CRS	Turbine bypass jack fails (prevents rapid depressurization to the main condenser)

* **(N)**ormal, **(R)**eactivity, **(I)**nstrument, **(C)**omponent, **(M)**ajor, **(TS)** Tech Spec

SIMULATOR OPERATOR INSTRUCTIONS FOR 2009 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.

SCENARIO SOURCE HISTORY

- This is a new scenario developed for the 2009 NRC ILT Exam.

INITIAL SETUP

Initial Conditions

- IC-91, ~5% power (created from IC-9, with rods driven back to Group 12, rod 14-55)
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active

Blocking Tags

- None

Activate APP "2009_NRC_SCN1" or insert the following:

Event Triggers

TRG E2 ROD_1455_TOGGLE_SCRAM
TRG E2 = DMF CRM011455
TRG E6 REACTOR_MODE_SWITCH_IN_SHUTDOWN

Malfunctions

IMF RPS05 (none 0 0) (RPS automatic scram failure)
IMF CRM011455 (E1 0 0) (Control rod 14-55 drifts out)
IMF DCW02B (E3 0 0) ('B' drywell chiller trips)
IMF ARIF2B (E4 0 0) ('B' ARI power supply failure – blown fuse)
IMF APR01A (E5 0 15) 130 (APRM 1 upscale failure – deactivates after 10 seconds)
IMF APR01B (E5 0 15) 130 (APRM 2 upscale failure – deactivates after 10 seconds)
IMF FWC01D (E6 0 0) 0 (startup LCV AO-8091 fails closed)
IMF PCS07 (E7 0 0) 100 20:00 0 (torus leak)

Overrides

IOR ZYP01A6A1S17 (none 0 0) "NO INCR" (fails the Bypass Jack RAISE pushbutton)

Trip Overrides

None

Turnover Procedures

- GP-2 "Normal Plant Start-Up" complete up to step 6.2.51
    - Step 6.2.44 – in process
- Rod Sequence Sheet is complete up to Group 12, Rod 14-55
- SO 6C.1.A-2 "'C' Reactor Feedwater Pump Startup With Vessel Level Control Established Through AO-8091" up to step 4.4
- SO 6C.1.C-2 "Startup of Second or Third Reactor Feedwater Pump" up to step 4.5.
- SO 7B.4.A-2 "Containment Atmosphere De-Inerting And Purging Via SBGT System" at step 4.19
- SO 1B.1.A-2 "Main Turbine Startup And Normal Operations" at step 4.10
- OP-AB-300-1003 Attachment 1 "Reactivity Maneuver Approval Form" at step 1 of 4 covering startup from all rods in to generator synchronization

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 Support the crew as necessary while securing drywell purge.

EVENT 2 Support the crew as necessary during control rod withdrawal.

EVENT 3 **NOTE: this malfunction must be inserted BEFORE notch position 20 (e.g., at approximately notch position 16).**

When control rod 14-55 is notched out, and at the Lead Examiners direction, initiate **ET1 (IMF CRM011455)** to insert a control rod drift malfunction on control rod 14-55.

When sent as the Equipment Operator to inspect HCU 14-55, report back by phone or radio that nothing looks abnormal on the HCU.

When the scram toggle switch for control rod 14-55 is placed in the DOWN position at Panel 20C016, verify **ET2 initiates** to delete the control rod drift malfunction **(DMF CRM011455)**.

EVENT 4 Initiate a trip of the 'B' Drywell Chiller using **ET3 (IMF DCW02B)**.

If an Equipment Operator is dispatched to inspect the 2B Drywell Chiller, report the chiller is shutdown and screen diagnostics indicate a severe power phase unbalance.

If an Equipment Operator is dispatched to inspect the 2B Drywell Chiller circuit breaker, report the breaker is tripped on overcurrent.

Support placing the 2C chiller in service using SO 44A.6.A-2 "Placing An Additional Drywell Chiller In Service". The Equipment Operator will be directed to perform steps 4.4 through 4.9 prior to starting the chiller.

EVENT 5 Initiate an ARI power supply failure using **ET4 (IMF ARIF2B)**.

If/when directed to check the power supplies and fuses for the 'B' ARI logic channel in the Cable Spreading Room, report fuse BB-F12 in Panel 20C019 is blown.

EVENT 6 After the crew has made a Tech Spec declaration for the failed ARI power supply, and at the Lead Examiners direction, initiate **ET5 (IMF APR01A/B)** to cause a momentary (15 second) upscale failure of APRM #1 and #2.

When the Mode Switch is placed in SHUTDOWN, verify **ET6** initiates **(IMF FWC01D)** to fail the startup level control valve (AO-8091) closed (see Event #8).

SIMULATOR OPERATOR DIRECTIONS

EVENT 7

NOTE: TORUS WATER LEVEL OUT OF NORMAL RANGE (226 A-4) will annunciate approximately 1-2 minutes after the leak malfunction is inserted.

After the crew has stabilized the plant following the reactor scram (i.e., following scram reports), initiate a leak in the torus using **ET7 (IMF PCS07 100 20:00 0)**.

If an Equipment Operator is dispatched to determine the source of the torus leak, wait 5 minutes, then report hearing a loud rush of water in the Torus Room and there are several inches of water on the Torus Room floor.

EVENT 8

Support the crew as necessary for the startup level control valve (AO-8091) failure.

EVENT 9

Role-play as plant staff if asked to investigate why the bypass valves will not open on the manual jack.

TERMINATION

The scenario may be terminated when the RPV is depressurized and HPSW is injecting into the torus.

SHIFT TURNOVER

PLANT CONDITIONS:

- Unit 2 startup IAW GP-2 "Normal Plant Startup" in progress. Procedure complete up to step 6.2.51.
    - 6.2.44 is open (Drywell purge) to support Drywell inspections, which are now complete.
- Rod Sequence Sheet is complete up to Group 12, rod 14-55.
- Currently in Step 1 of ReMA PB2C16-1.0.

INOPERABLE EQUIPMENT/LCOs:

- None

SCHEDULED EVOLUTIONS:

- Continue the Reactor startup in accordance with GP-2
- Secure Drywell purge per step 6.2.44 of GP-2, using SO 7B.4.A-2
- Commence inerting the containment IAW SO 7B.1.A-2 "Containment Atmosphere Inerting"

SURVEILLANCES DUE THIS SHIFT:

- None

ACTIVE CLEARANCES:

- None

GENERAL INFORMATION:

After turnover the crew will resume power ascension. GP-2 is complete through step 6.2.51. A Reactivity Briefing was already completed and you are ready to begin withdrawing rods at the beginning of Rod Group 12, control rod 14-55.

- Reactor level control is through AO-8091 using SO 6C.1.A-2 (at step 4.4).
- 2B Reactor Feed Pump is in standby per SO 6C.1.C-2 (at step 4.5).
- Containment purge is in progress using SO 7B.4.A-2 (at step 4.19).
- Chest warming is in progress using SO 1B.1.A-2 (at step 4.10).

NOTE: for the purposes of the 2009 NRC Exam, the PRO will secure drywell purge while the URO continues the power ascension (control rod withdrawal). A qualified individual will provide a peer-check during the control rod withdrawal evolution.

CRITICAL TASK LIST

1. **Shutdown the reactor by placing the Mode Switch in "SHUTDOWN" OR by depressing the manual scram pushbuttons when indications of a failure to scram are received.**

2. **Perform an emergency blowdown in accordance with T-112 "Emergency Blowdown" when Torus level cannot be maintained above 10.5 feet.**

3. **Secure HPCI in accordance with RRC 23.1-2 "HPCI System Operation During A Plant Event" OR SO 23.2.A-2 "HPCI System Shutdown" when Torus level cannot be maintained above 9.5 feet.**

   (NOTE: this CT only applies IF HPCI is in service for injection or pressure control, and IF Torus level lowers below 9.5 feet, which is dependent on when HPSW is placed in service to fill the Torus per T-231.)

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 1 **Page:** 1 of 12

Event Description: Secure drywell purge

Cause: N/A

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	Direct drywell purge secured per step 6.2.44 of GP-2, using SO 7B.4.A-2.

	PRO	Secure drywell purge starting at step 4.19 of SO 7B.4.A-2 "Containment Atmosphere De-inerting and Purging Via SBGT System".
		• Place the standby Drywell Purge Fan to OFF
		• Stop the running Drywell Purge Fan
		• Shutdown SBGT using SO 9A.2.B "SBGT System Shutdown Following Manual Start"
		• Close AO-20459 and AO-20460 on panel 20C012
		• Direct EO to verify HCS-00522-1 is OPEN on panel 0BC452
		• Close the following valves using SO 7B.7.A-2:
		  ○ AO-2505
		  ○ AO-2520
		  ○ AO-2506
		  ○ AO-2507
		• Close SBGT valves AO-20469-1 and AO-20469-2 on the 20C012 panel
		NOTE: at the Lead Examiner's direction, step 4.4 of SO 9A.2.B (SBGT lineup for Automatic Operation) may be performed by an "extra" operator.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 2 **Page:** 2 of 12

Event Description: Power ascension with control rods

Cause: N/A

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	Direct the URO to commence rod withdrawal in accordance with the Startup REMA and the Startup Sequence beginning with Rod Group 12, control rod 14-55.
	URO	Commence rod withdrawal beginning with Rod group 12, Rod 14-55. Withdraw control rods by selecting the rod on the matrix and then using the Single Notch Withdrawal switch to withdraw control rods. Monitor nuclear instrumentation and reactor power during control rod withdrawal.
	PRO	Monitor balance of plant conditions during rod withdrawal.
		NOTE: the scenario will continue when the Lead Examiner is satisfied with the reactivity manipulation. **The rod drift malfunction must be inserted before position 20 (e.g., at position 16)**.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 3 **Page:** 3 of 12

Event Description: Control rod drifts out

Cause: Leaking directional control valve on HCU

Effects: Uncontrolled reactivity change

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Acknowledge annunciator 211 (D-4) ROD DRIFT and inform CRS of alarm condition and that control rod 14-55 is drifting out.
	CRS	Enter ON-121 "Drifting Control Rod". Direct an Equipment Operator to inspect HCU 14-55. Request Shift Manager to notify Reactor Engineering.
	URO	Per ON-121 "Drifting Control Rod": • Select control rod 14-55 on the select matrix. • Monitor changes in reactor power, level, pressure. • Insert control rod 14-55 to full in position using the Emergency-In control switch and HOLD at the full in position for 30 seconds (perform this step for a total of 5 times since the control rod will continue to drift). NOTE: at the Lead Examiner's direction, the crew can continue with ON-121, step 2.9 (individual rod scram) after 2 attempts at step 2.8. • Insert control rod 14-55 to full in position using the Emergency-In control switch and HOLD at the full in position prior to the individual rod scram. • After the individual rod scram for control rod 14-55 has been performed, release the Emergency-In control switch. • Reset the ROD DRIFT alarm when control rod 14-55 is no longer drifting.
	PRO	Direct an Equipment Operator to inspect HCU 14-55. Perform an individual scram of control rod 14-55 by placing its associated scram toggle switch in the DOWN position on panel 20C016. After 15 seconds, return the toggle switch to the UP position.
	CRS	Refer to Tech Spec 3.1.3 for one inoperable control rod. • Determine Condition C applies: fully insert the control rod within 3 hours and disarm the rod drive mechanism within 4 hours.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 4 **Page:** 4 of 12

Event Description: 'B' drywell chiller trip / place standby chiller in service

Cause: Spurious chiller motor high temperature

Effects:

1. Alarms:
   - 217 D-1 "Drywell Chiller Trouble"
   - 217 J-1 "Drywell Chilled Water Hi-Lo Temp" (approximately 15 minutes after chiller trip, depending on restoration time)
   - 217 J-2 "A Drywell Chiller Discharge Hi Temp" (approximately 5 minutes after chilled trip)
2. 'B' chiller outlet temperature increases; chilled water supply and return, drywell cooler fan outlet and return, drywell equipment drain sump outlet, and recirc pump motor temperatures all increase. Drywell temperature and pressure rise accordingly.

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Recognize and report alarm 217 D-1 "Drywell Chiller Trouble" and enter the corresponding Alarm Response Card. Recognize and report alarm 217 J-1 "Drywell Chilled Water Hi-Lo Temp" and enter the corresponding Alarm Response Card, if it alarms. Recognize and report alarm 217 J-2 "A Drywell Chiller Discharge Hi Temp" and enter the corresponding Alarm Response Card.
	CRS	Enter and execute ARC 217 D-1" Drywell Chiller Trouble": • Direct placing additional drywell chillers in service IAW SO 44A.6.A-2 "Placing an Additional Drywell Chiller in Service." NOTE: Drywell chillers are NOT in outage operation. • Direct performing SO 44A.7.F-2 "Response to a Drywell Chiller Trouble Alarm."
	PRO	Place the control switch for the 'B' drywell chiller in "STOP". Start the standby drywell chiller IAW SO 44A.6.A-2 "Placing an Additional Drywell Chiller in Service." • Direct an Equipment Operator to verify 2C Drywell Chiller is ready for start by performing steps 4.4 through 4.9 of SO 44A.6.A-2. • Place the 'C' chilled water pump in service by placing the pump control switch in "RUN". • Place the 'C' drywell chiller in service by placing the chiller control switch in "START". Dispatch an Equipment Operator to perform SO 44.A.7.F-2 "Response to a Drywell Chiller Trouble Alarm."

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 5 **Page:** 5 of 12

Event Description: ARI power supply failure

Cause: Blown fuse for the 'B' ARI logic power supply

Effects:
1. Alarm: 207 E-3 "ARI-RPT System INOP/Loss of Power"
2. Automatic and manual initiation of the 'B' logic channel is disabled.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report alarm 207 E-3 "ARI-RPT System INOP/Loss of Power" and enter the corresponding Alarm Response Card. Determine the 'B' logic channel is affected by observing the ARI solenoid valve position (green) indicating lights on Panel 20C005A. Dispatch an Equipment Operator to the Cable Spreading Room to check the 'B' ARI logic power supply and fuses.
	CRS	Refer to Tech Spec 3.3.4.1 for ARI-RPT Instrumentation. • Determine Condition C applies: within 1 hour, restore the inoperable channel to OPERABLE status. Refer to TRM 3.1 for ARI Instrumentation. • Determine Condition C applies: within 1 hour, restore ARI trip capability. NOTE: the above application of Tech Specs and TRM is based on losing 125 VDC power to the 'B' ARI logic channel, which prevents the ARI function from occurring (both channels must trip for ARI to occur) and prevents the ATWS-RPT function from occurring since both channels must trip for the Recirc MG field breakers to trip (ARI-RPT contacts are in series in the drive motor breaker trip circuit).

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 6 **Page:** 6 of 12

Event Description: APRM channels 1 and 2 trip with auto scram failure / manual reactor scram

Cause: Spurious upscale failure of APRM channels 1 and 2 coincident with RPS failure

Effects:

1. Alarms:
   - 211 A-3 "APRM / OPRM HI-HI / INOP"
   - 211 B-5 "APRM HI"
2. Momentary (15 second) APRM upscale condition with scram failure, requiring crew to manually scram the reactor.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report alarms 211 A-3 "APRM / OPRM HI-HI / INOP" and 211 B-5 "APRM HI", and enter the corresponding Alarm Response Card (as time permits). Recognize APRM channels 1 and 2 are upscale high. Recognize and report failure to scram (ATWS):
	CT	• Place the mode switch to "SHUTDOWN". • Verify / report control rods are inserting. • Verify / report APRMs are downscale. • Verify all control rods are inserted. • When RPV level begins to recover "Emergency Stop" RFPTs. • Depress "SLOW RAISE" or "FAST RAISE" on the RFPT to remain in service. • Close all RFP discharge valves and open 'C' RFP discharge bypass valve. • Establish and maintain RPV level control with feedwater **(see Event #8)**. • Verify all control rods are inserted. • Verify RPV pressure, trend, and status of EHC. • Notify health physics of changing plant conditions.
	CRS	Enter T-101 "RPV Control" (scram condition with power > 4%).
	CT	• Direct placing the mode switch to "SHUTDOWN", as necessary. • Direct RPV level restored and maintained between +5 and +35 inches. • Direct RPV pressure stabilized below 1050 psig. • Direct restoration of drywell instrument nitrogen IAW GP-8.E "Primary Containment Isolation Bypass".

Event Description: APRM trip with auto scram failure / manual reactor scram (continued)

Time	Position	Applicant's Actions or Behavior
	PRO	Perform applicable scram actions: • (Should) trip the main turbine; verify main generator lockout. • Verify Group II and III isolations and SBGT system initiation. • Verify scram discharge volume vents and drains are closed. • Verify Hydrogen Water Chemistry is isolated (already is). • Verify recirc pumps are at (or below) 30% speed (already are). • Monitor instrument air header pressure and drywell pressure. • Report to the CRS instrument air header pressure is greater than drywell pressure.
	PRO	Bypass and restore drywell instrument nitrogen IAW GP-8E. • Place AO-2969A control switch to "CLOSE". • Place AO-2969B control switch to "CLOSE". • Place Drywell Instrument Nitrogen Bypass Switch 16A-S100 in the "BYPASS" position. • Place Drywell Instrument Nitrogen Bypass Switch 16A-S99 in the "BYPASS" position.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 7 **Page:** 8 of 12

Event Description: Torus leak into secondary containment / emergency blowdown

Cause: Rupture in the torus shell

Effects:

1. Alarms:
   - 224 E-5 "Torus Room Flood"
   - 226 A-4 "Torus Level Out Of Normal Range"
2. Torus level lowers and will eventually equalize with the torus room at approximately 7 feet.

Time	Position	Applicant's Actions or Behavior
	PRO	Recognize and report alarm 226 A-4 "Torus Level Out Of Normal Range" and enter the corresponding Alarm Response Card. Direct an Equipment Operator to determine the source of the leak.
	CRS	Enter and execute T-102 "Primary Containment Control". • Direct torus level restored using T-233 "CST Makeup to the Torus Via HPCI Minimum Flow Line". • Direct torus level restored using T-231 "HPSW Injection Into the Torus". (May) enter and execute ON-110 "Loss of Primary Containment".
	PRO	Perform T-233 "CST Makeup to the Torus Via HPCI Minimum Flow Line" as directed. • Verify HPCI suction MO-23-017 OPEN. • Open HPCI minimum flow MO-23-025.

Event Description: Torus leak into secondary containment / emergency blowdown (continued)

Time	Position	Applicant's Actions or Behavior
	PRO	Perform T-231 "HPSW Injection Into the Torus" as directed. • Verify 2B and 2D RHR pumps are shutdown. • Verify closed MO-10-154B "Outboard Discharge". • Verify 2B and 2D HPSW pumps are shutdown. • Verify MO-10-089B and MO-10-089D RHR Hx HPSW outlet valves CLOSED. • Verify MO-32-2344 (10-186) HPSW loop cross-tie CLOSED. • OPEN MO-10-174 and MO-10-176 HPSW/RHR cross-tie valves. • OPEN MO-10-039B "Torus Header". • Start a HPSW pump. • Throttle MO-10-034B to maintain 5,300 gpm flow rate. • Start a second HPSW pump if needed. • Throttle MO-10-034B to maintain 10,600 gpm flow rate for 2 pump operation.
	PRO	Recognize and report alarm 224 E-5 "Torus Room Flood" and enter the corresponding Alarm Response Card.
	CRS	Enter and execute T-103 "Secondary Containment Control". Direct an evacuation of the torus room in accordance with GP-15 "Local Evacuation" (make request to Shift Manager).
	CRS	Direct RPV depressurization using bypass valves IAW T-101 "RPV Control", as required by T-102, step T/L-6 **(see Event #9)**.
	URO/PRO	Recognize and report that torus level is approaching 12.5 feet. Recognize and report that torus level is approaching 10.5 feet.

Event Description: Torus leak into secondary containment / emergency blowdown (continued)

Time		Position	Applicant's Actions or Behavior
	CT	CRS	When torus level cannot be maintained above 10.5 feet, direct an emergency blowdown. Enter and execute T-112 "Emergency Blowdown". • Verify torus level is above 7 feet. • Verify reactor pressure is 50 psig above torus pressure. • Direct 5 ADS SRVs opened.
	CT	PRO	Perform an emergency blowdown by opening 5 ADS SRVs. Report 5 ADS SRVs are open.
		CRS	Direct RPV level maintained between +5 and +35 inches using Condensate.
		URO	Maintain RPV level between +5 and +35 inches using Condensate.
		CRS	When torus level drops below 10.5 feet, if any RHR pumps are running, direct all operating RHR pumps secured.
		URO/PRO	As directed, secure all operating RHR pumps by placing their control switches in "STOP". Recognize and report that torus level is approaching 9.5 feet.
	CT	CRS	When Torus level cannot be maintained above 9.5 feet, direct HPCI secured (if running).
	CT	URO/PRO	Secure HPCI when Torus level cannot be maintained above 9.5 feet, as directed, using RRC 23.1-2: • Verify Aux Oil Pump control switch in "START". • Place Vac Pump control switch in "START". • Depress <u>and</u> hold "Remote Trip" pushbutton. • When turbine speed reaches approximately 0 RPM, place Aux Oil Pump control switch in "PULL-TO-LOCK". • Release the "Remote Trip" pushbutton.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 8 **Page:** 11 of 12

Event Description: Startup level control valve (LCV-8091) failure

Cause: Control signal failure

Effects:
1. Alarm: 210 H-2 "Reactor Hi-Lo Water Level" (depending on when valve failure is discovered)
2. LCV-8091 fails closed, causing RPV water level to lower.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report alarm 210 H-2 "Reactor Hi-Lo Water Level" and enter the corresponding Alarm Response Card (as applicable). Recognize and report LCV-8091 has failed closed. • Attempt to take manual control of LCV-8091; determine valve does not respond to manual control. • Perform the following actions to control RPV level: o Close MO-8090 "C RFP Bypass". o Take manual control of 'C' reactor feed pump M/A station; adjust RFP speed/discharge pressure to ~ 100 psig above reactor pressure. o Batch feed the RPV by throttling MO-2149C "C RFP Discharge". OR o Maintain MO-2149C "C RFP Discharge" at a set throttled position. o Control RFP speed/discharge pressure (relative to reactor pressure) to control feed flow.

Op Test No.: 1 **Scenario No.:** 1 **Event No.:** 9 **Page:** 12 of 12

Event Description: Turbine bypass valve jack fails to open bypass valves

Cause: Instrument malfunction in the EHC logic card

Effects: Reactor depressurization cannot be performed using the bypass jack.

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Determine and report the bypass jack has no effect on opening the main turbine bypass valves.
	CRS	Direct the URO to lower the pressure regulator setpoint in an effort to depressurize the reactor.
	URO/PRO	Lower the pressure regulator setpoint as directed by the CRS.
	CRS	(May) direct RPV depressurization using HPCI in CST-to-CST mode, SRVs, or other methods per T-101.
	URO/PRO	Depressurize the RPV using SRVs, HPCI in CST-to-CST mode, or other methods, as directed.

TERMINATION CRITERIA:

The scenario may be terminated when the RPV is depressurized and HPSW is injecting into the torus.

Simulation Facility Peach Bottom **Scenario No.** #2 (new) **Op Test No.** 2009 NRC

Examiners _____ **Operators** _____ CRS (SRO)

_____ _____ URO (ATC)

_____ _____ PRO (BOP)

Scenario Summary The scenario begins with the reactor at 100% power. After taking the shift the crew is required to verify operability of the Startup Source load tap changer due to an earlier thunderstorm. Shortly after this, the running CRD pump will trip, requiring the crew to execute ON-107 "Loss of CRD Regulating Function" and place the standby CRD pump in service. Additional thunderstorms in the area will result in a loss of the SBO line, which will require the CRS to enter and evaluate the TRM.

Following this, the 'D' SRV will inadvertently open, requiring the crew to take actions to close the valve in accordance with OT-114 "Inadvertent Opening of a Relief Valve". Power will be reduced in accordance with GP-9-2 "Fast Power Reduction", and the crew will be successful in closing the SRV by lowering reactor pressure in accordance with OT-114.

Next, a sustained loss of Stator Cooling will occur, requiring the crew to scram the reactor. An ATWS (electrical) will require the crew to execute T-101 "RPV Control" and T-117 "Level/Power Control". The main turbine will trip several minutes into this event as a result of the loss of Stator Cooling, complicating the crew's efforts to respond to the ATWS and challenging Primary Containment due to SRV actuation. When SBLC is initiated, RWCU will fail to automatically isolate, requiring the crew to manually isolate RWCU. In addition, the crew will not be able to restore normal instrument nitrogen, which will require aligning a backup source of nitrogen to the SRVs to ensure they are available for reactor pressure control. After RPV level has been lowered to control power, the ATWS will be terminated using T-214 "Venting the Scram Air Header".

Initial Conditions IC-92, 100% power

Turnover See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*		Event Description
1		N	PRO CRS	Verify operability of Startup Source load tap changer
2		C	URO CRS	CRD pump trip / place standby CRD pump in service
3		TS	CRS	SBO line failure (TRM)
4		C TS	PRO CRS	SRV inadvertently opens (Tech Spec) / maximize torus cooling
5		R	URO CRS	Fast power reduction / pressure reduction due to SRV failure
6		M	ALL	Loss of stator cooling water / scram (electric ATWS)
7		I	URO CRS	RWCU fails to isolate on SBLC initiation / manually isolate RWCU
8		C	PRO CRS	Unable to restore drywell instrument nitrogen / place alternate instrument nitrogen system(s) in service

* **(N)**ormal, **(R)**eactivity, **(I)**nstrument, **(C)**omponent, **(M)**ajor, **(TS)** Tech Spec

SIMULATOR OPERATOR INSTRUCTIONS FOR 2009 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.

SCENARIO SOURCE HISTORY

- This is a new scenario developed for the 2009 NRC ILT Exam.

INITIAL SETUP

Initial Conditions

- IC-92, 100 % power
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active

Blocking Tags

- 'B' EHC pump

Activate APP "2009_NRC_SCN2" or insert the following:

Event Triggers

TRG E4 = DMF MSS08A (closes the 'A' SRV)

Malfunctions

IMF PCI01V (none 0 0) (RWCU MO-15 fails to automatically isolate)
IMF PCI01W (none 0 0) (RWCU MO-18 fails to automatically isolate)
IMF PCI01X (none 0 0) (RWCU MO-68 fails to automatically isolate)
IMF CRH03A (E1 0 0) ('A' CRD pump trip)
IMF MAP02F (E2 0 0) (trip of SBO-1005)
IMF MSS08A (E3 0 0) 50 ('A' SRV fails open)
IMF SWC01 (E5 3:00 0) (loss of Stator Water Cooling with a three-minute time delay)

Overrides

IOR ANO209RA5 (E5 0 0) ALARM_ON (Stator coolant/H2 seal oil trouble alarm 220 A-5)
IOR ANO208RG5 (E5 1:30 0) ALARM_ON (Stator coolant standby pump run alarm 206 G-5)
IOR ZYP12A2S25 (none 0 0) AUTOOPEN (Instrument Air to drywell valve in AUTO)
IOR ZYP12A2S31 (none 0 0) AUTOOPEN (Instrument Air to drywell valve in AUTO)

Remote Functions

None

Trip Overrides

Insert the following to provide an electrical ATWS:
MRF ARI01TO OVERRIDE
MRF RPS01TO OVERRIDE
MRF RPS02TO OVERRIDE
MRF RPS05TO OVERRIDE

Batch Files

None

Turnover Procedures

- AO 53.2-0 "Equipment Checks After a Thunderstorm"

NOTE: PMS point J610 is not available in the simulator (Unit 3 point); point data will be simulated.

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 Support the crew as necessary to perform AO 53.2-0 "Equipment Checks After a Thunderstorm".

EVENT 2 After AO 53.2-0 is completed, or when directed by the Lead Examiner, initiate **ET1 (IMF CRH03A)** to trip the 'A' CRD hydraulic pump.

If requested to check the breaker for the 2A CRD pump (in the E-12 bus room), report that the breaker has tripped on instantaneous ground overcurrent and relay flag 150G is showing.

If an Equipment Operator is dispatched to inspect the 2A CRD pump, report there are no indications of abnormalities at the pump.

When asked to perform pre-startup checks for the 2B CRD pump, wait until charging header pressure drops below 940#, or when the Lead Examiner is ready to continue and then report steps 4.1.1 through 4.1.5 are complete IAW SO 3.1.B-2 "CRDH System Startup With The System Filled and Vented".

When asked to slowly open HV-2-3-36B, **MRF CRH02 OPEN** and then report HV-2-3-36B is open.

If directed to perform SO 2A.1.C-2 "Operation of the Recirculation Pump Seal Purge System", steps 4.1.1 through 4.1.6 and steps 4.2.1 through 4.2.6, report back that the steps are complete.

If directed to perform the subsequent steps of SO 2A.1.C-2 (adjust/verify seal purge flowrate), report back that the steps are complete.

EVENT 3 After the 'B' CRD pump is in service, or when directed by the Lead Examiner, initiate **ET2 (IMF MAP02F)** to initiate a trip of the SBO line.

Obtain a copy of ARC 00C893 C-2 "1005/30601 BKRS TRIP" and report "the 1005 breaker is tripped" and "there is a differential overcurrent lockout on transformer 00X019...investigating the cause".

If contacted as PSD, report there are no known 341 or 351 line faults.

If asked, report 191-00 line is energized and available.

SIMULATOR OPERATOR DIRECTIONS

EVENT 4

After the TRM requirements have been determined for the SBO Line failure, or when directed by the Lead Examiner, initiate **ET3 (IMF MSS08A 50)** to cause the 'A' SRV to fail open (50%).

When directed, isolate A and B loop RHR stayfull by entering **MRF RHR02A CLOSE** and **MRF RHR02B CLOSE**.

After EHC pressure setpoint has been lowered, initiate **ET4 (DMF MSS08A)** to close the 'A' SRV.

If directed to remove 'A' SRV control power fuses, delay fuse removal until after reactor pressure has been lowered and the SRV has closed. Then, if necessary, contact the control room via telephone and inform them you are ready to remove the fuses.

If "Torus Level Out Of Normal Range (226 A-4) becomes a nuisance alarm, **MRF ANO203DA4 ALARM_ON** to override the alarm on.

EVENT 5

Support the crew as necessary for GP-9 "Fast Power Reduction". Role-play as the Power System Director when called.

EVENT 6

After the 'A' SRV is closed, or when directed by the Lead Examiner, initiate **ET5** to initiate the following sequence of events (times are in minutes):

- T = 0 – Stator coolant/H2 seal oil trouble 220 A-5 **(IOR ANO209RA5)**
- T = 1.5 – Stator coolant standby pump run 206 G-5 **(IOR ANO208RG5)**
- T = 3.0 – Loss of stator cooling **(IMF SWC01)**

When directed to investigate the Stator Coolant trouble alarm, wait 2 minutes then report "INLET FLOW LOW and INLET PRESSURE LOW are alarming on Panel 20C084; investigating the cause."

If asked to report the status of the standby stator cooling pump, report both pumps are running.

SIMULATOR OPERATOR DIRECTIONS

EVENT 6 (continued) Pre-inserted malfunctions **(Trip Overrides)** will result in an electrical ATWS.

NOTE: **Do not permit the operators to utilize the individual scram test switches on the RPS panels when performing T-213 "Scram Solenoid Deenergization." When the applicant opens the panel, inform him/her that the individual scram switches are all in the down position.**

When directed, provide support for T-220 as an Equipment Operator. After a suitable delay time, **MRF T220_2 CLOSE** and report to the control room that HV-2-3-56 is closed.

When directed to perform T-221 on Unit 2, wait 10 minutes then **MRF T221_1 DEFEAT**.

After level has been lowered to control power IAW T-240 (-172 to -195 inches) and the APRM downscale lights are lit, then on the Lead Examiner's cue insert control rods using T-214 "Venting the Scram Air Header" **(MRF T214 VENT)**.

Report that you have commenced venting the scram air header IAW T-214.

EVENT 7 Pre-inserted malfunctions **(PCI01V, W, X)** will prevent RWCU from automatically isolating when SBLC is initiated.

EVENT 8 Pre-inserted failures **(overrides)** will prevent restoring normal drywell instrument nitrogen. This will prevent all non-ADS SRVs from being used for pressure control and/or depressurization. The crew should align Backup Instrument Nitrogen (bottles) to the ADS SRVs and/or request aligning CAD in accordance with T-261.

If directed to perform T-261, wait 20 minutes then enter **MRF T261_1 OPEN**.

TERMINATION The scenario may be terminated when all control rods have been inserted and reactor level is being controlled above the top of active fuel.

SHIFT TURNOVER

PLANT CONDITIONS:

- Unit 2 is at 100% power.

INOPERABLE EQUIPMENT/LCOs:

- 'B' EHC pump out of service for micron filter replacement.

SCHEDULED EVOLUTIONS:

- Verify 3 SU LTC operability IAW AO 53.2-0 "Equipment Checks After a Thunderstorm".

SURVEILLANCES DUE THIS SHIFT:

- None

ACTIVE CLEARANCES:

- 'B' EHC pump

GENERAL INFORMATION:

- Maintain current power.

CRITICAL TASK LIST

1. **Before torus temperature exceeds the limits of the Heat Capacity Temperature Limit (HCTL) curve, lower reactor power by performing T-240 "Terminating and Preventing Injection" to lower RPV level until:**

   a. **Reactor power is below 4%, OR**

   b. **RPV level reaches -172 inches, OR**

   c. **All SRVs remain closed and drywell pressure is below 2 psig.**

2. **Initiate a reactor shutdown by performing one or more of the following:**

   a. **T-214 "Isolating and Venting the Scram Air Header"**

   b. **T-220 "Driving Control Rods During a Failure to Scram"**

   c. **Injecting Standby Liquid Control before torus temperature exceeds 110 degrees F**

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 1 **Page:** 1 of 14

Event Description: Verify 3SU load tap changer operability IAW AO 53.2-0 "Equipment Checks After a Thunderstorm"

Cause: Required due to a thunderstorm passing near PBAPS

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	Direct the PRO to verify 3SU load tap changer operability IAW AO 53.2-0 "Equipment Checks After a Thunderstorm". Verify compliance with Tech Spec 3.8.1 AND 3.8.2.
	PRO	Verify 3SU load tap changer operability IAW AO 53.2-0 "Equipment Checks After a Thunderstorm": • Verify LTC Mode Switch for 00X005 transformer in "AUTO" and amber light is illuminated. • Place LTC Mode Switch for 00X005 transformer to "MAN." NOTE: PMS point J610 is not available (since it is a U3 point). Direct applicant to raise LTC and **when at Tap 8**, inform applicant that PMS **point J610 is reading 14.2 KV**. • Place 3SU LTC Control Switch to "RAISE" to raise 00X005 transformer voltage in 1 tap increments until transformer voltage is approximately 14.2 KV. • Verify transformer voltage taps up from the original tap position. • Place 3SU LTC Mode Switch to "AUTO" and verify 00X005 transformer voltage taps down. • Verify 3SU bus voltage is between 13.68 KV and 14.35 KV. NOTE: inform applicant that PMS **point J610 is reading 13.8 KV**. • Verify LTC Mode Switch for 00X005 transformer in "AUTO" and amber light is illuminated.
	URO	Monitor plant parameters/assist as directed.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 2 **Page:** 2 of 14

Event Description: Trip of the 'A' CRD pump

Cause: Circuit breaker trips due to a phase-to-phase short

Effects:

1. Alarms:
   - 211 F-1 "A CRD Water Pump Trip"
   - 211 F-2 "A CRD Water Pump OVLD"
   - 211 G-5 "CRD Hydraulic Hi Temp" (depending on CRD restoration time)
2. Cooling water, drive water, and motor amps decrease. CRD temperatures rise due to loss of cooling water flow. As accumulator pressure lowers, accumulator trouble lights on the full core display will randomly illuminate.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report alarms 211 F-1 "A CRD Water Pump Trip" and 211 F-2 "A CRD Water Pump OVLD" and enter corresponding Alarm Response Cards.
	CRS	Enter and execute ON-107 "Loss of CRD Regulating Function". Direct the 'B' CRD pump placed in service per SO 3.1.B-2 "Control Rod Drive Hydraulic System Startup With the System Filled and Vented". Ensure compliance with Tech Spec 3.1.5. Brief/update that when charging header pressure is less than 940 psig, and 2 or more CRD accumulator trouble indicators are lit on withdrawn control rods, then charging header pressure must be restored to $\geq$ 940 psig within 20 minutes, or enter GP-4 "Manual Reactor Scram".
	URO	Place 2A CRD pump control switch to "STOP". Dispatch an equipment operator to check the status of the 2A CRD pump circuit breaker. Dispatch another equipment operator to check the 2A CRD pump, and to perform pre-startup checks of the 2B CRD pump IAW SO 3.1.B-2, step 4.1. Verify CRD flow control valve controller is in "MANUAL" and the valve is closed.
	URO	Recognize and report alarm 211 G-5 "CRD Hydraulic Hi Temp" and enter corresponding Alarm Response Card (depending on CRD restoration time).

Event Description: Trip of the 'A' CRD pump (continued)

Time	Position	Applicant's Actions or Behavior
	URO	Place the 'B' CRD pump in service per SO 3.1.B-2: • Open MO-2-3-20 "Drive Water Pressure" valve. • Isolate recirc pump seal purge by closing MO-2-2A-8029 A and B. • Start the 2B CRD pump. • After CRD flow stabilizes, direct the equipment operator to slowly open HV-2-3-36B. • Return the CRD flow controller to auto IAW step 4.5. • Throttle MO-2-3-20 to adjust CRD drive water pressure. Restore recirc pump seal purge IAW SO 2A.1.C-2 "Operation of the Recirculation Pump Seal Purge System". • Direct the Equipment Operator to perform steps 4.1.1 through 4.1.6 (for the 2A pump) and steps 4.2.1 through 4.2.6 (for the 2B pump). • Open MO-8029A "Seal Purge Supply" for 2A Recirc pump. • Open MO-8029B "Seal Purge Supply" for 2B Recirc pump. • Direct Equipment Operator to adjust/verify seal purge flowrate in accordance with SO 2A.1.C-2.
	CRS	Direct monitoring recirc pump seal temperatures IAW ON-107.
	PRO	Monitor recirc pump seal temperatures and CRD temperatures, as directed.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 3 **Page:** 4 of 14

Event Description: SBO line failure

Cause: Differential overcurrent trip of transformer 00X019

Effects:
1. Alarm: 006 G-2 "SBO Circuit Trouble"
2. Trip of the SBO-1005 breaker

Time	Position	Applicant's Actions or Behavior
	PRO	Recognize and report alarm 006 G-2 "SBO Circuit Trouble" and enter the corresponding Alarm Response Card. Recognize and report SBO-1005 breaker is tripped. Dispatch Equipment Operator to the SBO switchgear.
	CRS	Review Tech Spec 3.8.1, TRM 3.18 and GP-23 "Diesel Generator Inoperable". • Per TRM 3.18, determine the SBO (Conowingo) line must be returned to service within 15 days.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 4 **Page:** 5 of 14

Event Description: SRV 'A' inadvertently opens

Cause: SRV mechanical failure

Effects:

1. Alarms:
   - 210 D-2 "Safety Relief Valve Open"
   - 227 B-4 "Blowdown Relief Valves Hi Temp"
2. Loss of generator load, steam flow/feed flow mismatch, heat input to the primary containment.

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Recognize and report 210 D-2 "Safety Relief Valve Open" and 227 B-4 "Blowdown Relief Valves Hi Temp" and enter the corresponding Alarm Response Cards.
	CRS	Enter/direct actions IAW OT-114 "Inadvertent Opening of a Relief Valve": • Lead crew in confirming an SRV is open. • Direct torus cooling maximized. • Direct attempts to close the 'A' SRV. • Direct monitoring torus temperature.
	URO/PRO	Confirm the 'A' SRV is open IAW OT-114: • SRV position indication on Panel 20C003. • Generator load reduction. • Steam flow – feed flow mismatch (on 'A' MSL). • "Blowdown Relief Valves Hi Temp" alarm (227 B-4). • Rising torus temperature.
	PRO	Cycle the 'A' SRV control switch when directed. Monitor torus temperature.
	CRS	(May) direct pumping down torus (due to high level) in accordance with SO 14A.1.A-2 "Torus Water Cleanup and Level Control System".

Event Description: SRV 'A' inadvertently opens (continued)

Time	Position	Applicant's Actions or Behavior
	PRO	Place the 'A' and 'B' loops of RHR in torus cooling IAW RRC 10.1-2 "RHR System Torus Cooling During a Plant Event" when directed: • Open MO-2-10-039A (B) • Open MO-2-32-89A (B, C, D) • Start A (B, C, D) HPSW pump • Start A (B, C, D) RHR pump • Open MO-2-10-034A (B) • Verify 11,500 to 12,200 gpm RHR flow • Start remaining HPSW pump in A (B) RHR loop • Open MO-2-32-89C (B, D) • Start remaining RHR pump in A (B) RHR loop • Verify >20,000 gpm RHR loop flow • Direct Equipment Operator to close stayfull injection valves HV-2-10-70A and HV-2-10-70B.
	URO	Perform a Fast Power Reduction IAW GP-9-2 when directed **(see Event #5)**.
	URO/PRO	Coordinate removal of fuses by Equipment Operator and monitor valve status during attempts to close the 'A' SRV.
	CRS	Enter T-102 "Primary Containment Control" on high torus temperature (if 95 degrees F is reached). Declare the 'A' SRV inoperable and verify compliance with Tech Spec 3.5.1.F. • Determine 'A' SRV must be restored within 72 hours. • Review Tech Spec 3.4.3.A and determine no action is required (other than a PTSA). Depending on torus level and temperature: • For high temperature, enter Tech Spec 3.6.2.1 (restore average torus temperature to below 95 degrees F within 24 hours). • For high level, enter Tech Spec 3.6.2.2 (restore torus level to less than or equal to 14.9 feet within 2 hours).

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 5 **Page:** 7 of 14

Event Description: Fast power reduction / pressure reduction due to SRV failure

Cause: Directed from OT-114 "Inadvertent Opening of a Relief Valve"

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	Direct a Fast Power Reduction IAW GP-9-2.
	URO	Reduce recirculation flow to 61.5 Mlbs/hr IAW GP-9-2 "Fast Power Reduction."
	CRS	When recirculation flow has been lowered IAW GP-9-2, direct EHC pressure setpoint lowered until PAM pressure is 900 psig.
	URO	Lower EHC pressure setpoint until PAM pressure is 900 psig.
	PRO	Report to the CRS when the 'A' SRV has closed. Maintain the main generator auto-manual voltage regulator balanced (when it alarms). Notify the Power System Director of the required power change.
	CRS	Enter OT-110 "Reactor High Level" if alarm 210 H-2 (Reactor Hi-Lo Water Level) is received during power reduction. When 'A' SRV closes, direct crew to suspend pulling SRV fuses.
	URO/PRO	Direct Equipment Operator to suspend pulling SRV fuses.

Event Description: Loss of Stator Water Cooling / reactor scram / ATWS (electric)

Cause: Clogged SWC filter / scram condition with power above 4% due to RPS failure

Effects:

1. Alarms:
   - 220 A-5 "2 Gen Stator Coolant or H2 Seal Oil Trouble"
   - 206 G-5 "Stator Coolant Standby Pump Run"
   - 206 L-1 "Generator Protection Circuit Energized"
2. The crew will attempt to initiate a manual scram, and then take actions to terminate the ATWS, as well as control RPV level/power.
3. The turbine will trip in 3.5 minutes since stator amps will be greater than 7760.

Time	Position	Applicant's Actions or Behavior
	PRO	Recognize and report 220 A-5 "2 Gen Stator Coolant or H2 Seal Oil Trouble" and enter the corresponding Alarm Response Card. Dispatch an Equipment Operator to investigate the alarm.
	URO	Recognize and report 206 G-5 "Stator Coolant Standby Pump Run" and 206 L-1 "Generator Protection Circuit Energized" and enter the corresponding Alarm Response Cards.
	CRS	Enter/direct actions IAW OT-113 "Loss of Stator Cooling": • Lead crew in verifying a valid loss of Stator Cooling condition exists (per OT-113, 206 L-1 in conjunction with 206 G-5 is a valid loss of Stator Cooling). • Direct a reactor scram per GP-4 "Manual Reactor Scram".
	URO	Perform GP-4 "Manual Reactor Scram": • Reduce recirc flow controllers to minimum (20% demand) • Place the mode switch to "SHUTDOWN". • Report control rods are NOT inserting. • Report APRMs are NOT downscale. • Depress both manual scram pushbuttons. • Report T-101 entry due to an ATWS with reactor power > 4%.

Event Description: Reactor scram / ATWS (continued)

Time	Position	Applicant's Actions or Behavior
	PRO	Perform GP-4 "Manual Reactor Scram" / scram actions: • Transfer 13 KV house loads using RRC 53.1-2. • Verify Group II & III isolations and SGTS initiation. • Verify scram discharge volume vents and drains are closed (only the outboard vents and drains will close due to the RPS failure). • Isolate Hydrogen Water Chemistry. • Verify recirc pumps are at (or below) 30% speed. • Monitor instrument air header pressure and drywell pressure. • Report to the CRS instrument air header pressure is greater than drywell pressure. • WHEN the turbine trips (due to the loss of Stator Cooling), verify generator lockout.
	CRS	Enter/direct actions for T-101 "RPV Control": • Verify URO/PRO scram actions. • Direct RPV pressure stabilized below 1050 psig using EHC (using SRVs and/or HPCI after the turbine trips). • Direct drywell instrument nitrogen restored. • Direct actions for the ATWS **(see next page)**.
	PRO	Attempt to restore drywell instrument nitrogen IAW GP-8.E "Primary Containment Isolation Bypass". • Place AO-2969A control switch to "CLOSE". • Place AO-2969B control switch to "CLOSE". • Place Drywell Instrument Nitrogen Bypass Switch 16A-S100 in the "BYPASS" position. • Place Drywell Instrument Nitrogen Bypass Switch 16A-S99 in the "BYPASS" position. Recognize and report that while attempting to restore drywell instrument nitrogen, the valves did not reopen **(see Event #8)**.
	CRS	Enter T-103 "Secondary Containment Control" as necessary for Torus Compartment High Radiation (per ARC 003 B-1 "2 Unit Reac Bldg Hi Radiation), due to SRV lift following turbine trip.

Event Description: Reactor scram / ATWS (continued)

PRO — Stabilize RPV pressure below 1050 psig using SRVs and/or HPCI in CST to CST mode for pressure control IAW RRC 23.1-2 Section D:

- Open MO-2-23-24 "Cond Tank Return".
- Verify closed MO-2-23-19 "To Feed Line".
- Start the Vacuum Pump.
- Throttle OPEN MO-2-23-21 "Full Flow Test" for 3 to 4 seconds.
- Simultaneously START Aux Oil Pump AND OPEN MO-2-23-14 "Steam Supply".
- Verify HPCI system flow rate is 5000 gpm.

CRS — Direct T-101 RC/Q actions:

- Initiation of ARI.
- Trip recirc pumps at least 10 seconds apart.
- T-213 "Deenergize Scram Solenoids".

CT
- T-214 "Vent Scram Air Header" (this direction is critical because it is the only success path to insert control rods during the ATWS).

CT
- T-220 "Driving Control Rods During Failure To Scram".
- Enter T-117 "Level/Power Control".

CT
- Initiation of SBCL.

URO — Perform T-101 RC/Q actions when directed:

- Initiate ARI; report to the CRS that ARI was NOT successful.
- Trip recirc pumps at least 10 seconds apart.
- Direct an Equipment Operator to perform T-213. Attempt URO portion of T-213; report to the CRS that T-213 was NOT successful.

NOTE to Examiner: do NOT allow T-213 to be performed.

CT
- Direct an Equipment Operator to perform T-214.

CT
- Perform T-220.
- Initiate SBLC in accordance with RRC 11.1-2 "Standby Liquid System Initiation During A Plant Event" **(see Event #7)**.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 6 **Page:** 11 of 14

Event Description: Reactor scram / ATWS (continued)

Time	Position	Applicant's Actions or Behavior
	CRS	Direct T-117 actions: • Inhibit ADS. • T-221 "Main Steam Isolation Valve Bypass". • Lowering RPV level to below -60 inches by terminating and preventing RPV injection using T-240, Attachment 1, Figure 1.
CT		
	PRO	Perform T-117 actions when directed: • Inhibit ADS. • Direct an Equipment Operator to perform T-221 to bypass the low level MSIV isolation (-160 inches).
CT		Perform T-240 when directed: • Terminate and prevent injection using T-240, Attachment 1, Figure 1. • Control RPV level below -60 inches and within the RPV level band directed by the CRS.
	URO/PRO	Recognize and report entry into T-102 "Primary Containment Control" due to high Torus temperature of 95 degrees F.
	CRS	Enter and execute T-102: • Ensure Torus cooling has been maximized.
	CRS	Direct T-117 actions: • When Torus temperature reaches 110 degrees F, direct the crew to perform T-240 using Attachment 1, Figure 1, if no SRVs are open; OR Attachment 1, Figure 2, if any SRV is open. • If not already done, direct initiation of SBLC at or before Torus temperature reaches 110 degrees F **(see Event #7)**.

Event Description: Reactor scram / ATWS (continued)

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Perform T-240 again to meet Attachment 1, Figure 2, requirements. Terminate and prevent injection to lower RPV level; restore injection when any of the following are reached: • RPV level reaches -172 inches, or • Reactor power drops below 4%, or • All SRVs remain closed. The crew controls level manually as directed by the CRS to prevent dropping level below -226 inches (2/3 core coverage).
CT	URO	Recognize "Scram Valve Pilot Air Header Press Lo" (211 D-2) alarm and/or control rods inserting due to T-214 and inform the CRS. Verify all control rods are inserted and inform the CRS.
	CRS	Determine the ATWS is terminated, exit T-117 "Level /Power Control" and enter T-101 RC/L: • Direct crew to restore level to +5 to +35 inches. • Direct restoration actions.
	URO/PRO	Restore RPV level to +5 to +35 inches as directed by CRS.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 7 **Page:** 13 of 14

Event Description: RWCU fails to automatically isolate on Group II isolation signal

Cause: Isolation logic failure

Effects: When SBLC is initiated, RWCU will not automatically isolate, resulting in dilution and removal of boron solution. Operator action will be required in order to isolate RWCU.

Time	Position	Applicant's Actions or Behavior
	URO	Initiate SBLC, when directed, per RRC 11.1-2: • Close Recirc sample valves AO-039 and AO-040. • Start 'A' or 'B' SBLC pump. • Recognize RWCU did not isolate.
	CT	• Manually close RWCU valves MO-15, MO-18, and MO-68. • Verify SBLC is injecting based on SBLC pump discharge pressure greater than reactor pressure and lowering tank level.

Op Test No.: 1 **Scenario No.:** 2 **Event No.:** 8 **Page:** 14 of 14

Event Description: Unable to restore drywell instrument nitrogen / loss of non-ADS SRVs

Cause: Failure of isolation bypass logic

Effects: Non-ADS SRVs are not available for reactor pressure control and/or depressurization

Time	Position	Applicant's Actions or Behavior
	CRS	Direct alternate methods of supplying nitrogen to the SRVs: • Backup Instrument Nitrogen to ADS using SO 16A.7.A-2 o Place SV-8130A and SV-8130B control switches on panel 20C003-03 to RESET and then in AUTO/OPEN. o Verify open SV-8130A & B. o Verify PI-8142 "Backup N2" on the 20C003-03 panel is $\geq$ 85 psig. • T-261 "Placing the Backup Instrument Nitrogen Supply From the CAD Tank in Service".
	PRO	Restore drywell instrument nitrogen as directed. • If directed to use Backup Instrument Nitrogen to ADS using SO 16A.7.A-2: o Place SV-8130A and SV-8130B control switches on panel 20C003-03 to RESET and then in AUTO/OPEN. o Verify open SV-8130A & B. o Verify PI-8142 "Backup N2" on the 20C003-03 panel is $\geq$ 85 psig. • If directed to perform T-261 "Placing the Backup Instrument Nitrogen Supply From the CAD Tank in Service": o Verify closed AO-2969B on panel 20C003-03. o Dispatch an Equipment Operator to the CAD Building perform step 4.2 (manual valving).

TERMINATION CRITERIA:

The scenario may be terminated when all control rods have been inserted and reactor water level is being controlled above the top of active fuel.

Simulation Facility Peach Bottom **Scenario No.** #3 (modified) **Op Test No.** 2009 NRC

Examiners _____ **Operators** _____ CRS (SRO)

_____ _____ URO (ATC)

_____ _____ PRO (BOP)

Scenario Summary The scenario begins with the reactor at approximately 88% power and HPCI out of service due to emergent maintenance. Following shift turnover, the crew will perform ST-O-001-200-2 "Turbine Stop Valve Closure and EOC-RPT Functional Test". An RPS failure during the test will require the crew to make a Tech Spec declaration. Next, the running Service Water pump will trip on overcurrent, requiring the crew to place the standby pump in service using the system operating procedure. Following this, a drywell pressure instrument will fail upscale without causing the expected half scram. The crew will apply Tech Specs and (with time-compression) insert a half scram IAW GP-25 "Installation of Trips/Isolations to Satisfy Tech Spec/TRM Requirements". When this is complete, the 'A' Condensate pump will trip without the expected Recirc System runback. Power must be manually reduced using recirc flow to prevent a low-level scram.

When conditions have stabilized, #2 Auxiliary Bus will trip on overcurrent, causing a loss of the remaining Condensate pumps. An RPS failure will prevent the automatic and manual scrams, requiring entry into T-101 "RPV Control" and the use of Alternate Rod Insertion (ARI) to shutdown the reactor. A small reactor coolant leak inside the drywell will be greater than the capacity of RCIC (the only available high-pressure feed source) and require the use of containment sprays. The crew should enter T-111 "Level Restoration" and T-102 "Primary Containment Control". A failure of the RCIC flow controller will complicate efforts to feed with RCIC and require the operator to transfer RCIC control to manual. A containment spray logic failure will complicate the crew's efforts to spray containment; the other loop of RHR will be available and should be used to spray containment. As level deteriorates, the crew should start available low pressure ECCS pumps and when it is determined that level cannot be restored and maintained above -172 inches, the reactor should be depressurized in accordance with T-112 "Emergency Blowdown". Low pressure ECCS will be available to recover reactor level.

Initial Conditions IC-93, 88% power

Turnover See Attached "Shift Turnover" Sheet

Event No.	Malfunction No.	Event Type*		Event Description
1		N TS	PRO CRS	Main Turbine stop valve functional test / RPS failure (Tech Spec)
2		C	URO CRS	Service Water pump trip / manual start of the standby pump
3		I TS	PRO CRS	Drywell pressure instrument fails upscale without the expected half scram (Tech Spec) / insert half scram IAW GP-25
4		R	URO CRS	Condensate pump trip with recirc runback failure / power reduction
5		M	ALL	Loss of #2 auxiliary bus / loss of condensate & feedwater / reactor coolant leak inside the drywell
6		C	URO CRS	RPS failure requires ARI to scram the reactor
7		I	URO CRS	RCIC flow controller fails in automatic / transfer to manual control
8		I	PRO CRS	Containment spray logic failure hampers effort to spray the containment, requiring crew to use alternate RHR loop

* **(N)**ormal, **(R)**eactivity, **(I)**nstrument, **(C)**omponent, **(M)**ajor, **(TS)** Tech Spec

SIMULATOR OPERATOR INSTRUCTIONS FOR 2009 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.

SCENARIO SOURCE HISTORY

- This is a modified scenario that originated from the 2008 NRC ILT exam. It has been modified and the initial conditions have been altered, as required by NUREG-1021, ES-301.

INITIAL SETUP

Initial Conditions

- IC-93, 88% power, full power rod pattern
- Ensure recorder power is on; roll recorders as required
- Ensure annunciator horns are active

Blocking Tags

- HPCI

Activate APP "2009_NRC_SCN3" or insert the following:

Event Triggers

TRG E5 ARI_A_ARMED
TRG E1 = DOR ZAOTC08BPOI4275A_1
TRG E1 = DOR ZAOTC08BPOI4275A_2
TRG E1 = DOR ZAOTC08BPOI4275A_3
TRG E1 = DOR ZAOTC08BPOI4275A_4
TRG E4 = BAT BUS_2_OVERCURRENT_LOCKOUT
TRG E5 = MRF ARI01TO NORMAL

Malfunctions

IMF RCI04 (none 0 0) (RCIC automatic flow controller fails low)
IMF SWS01B (E1 0 0) ('B' Service Water pump trip)
IMF MCS05A (E3 0 0) ('A' condensate pump trip)
IMF RRS20 (E4 5:00 0) 0.3 10:00 0 (Recirc loop rupture at 0.3% severity, 5 minute delay and 10 minute ramp)

Overrides

IOR ZLORP15DS26B (none 0 0) ON (5A-DS26B light at RPS Panel 20C017 to ON)
IOR ZYP06A521S16 FALSE (SFCS recirc runback inhibit)
IOR ZYP12A1S19 (none 0 0) OFF (Override Switch 10A-17A, prevents containment sprays)
IOR ZYP12A3S19 (none 0 0) OFF (Override Switch 10A-17B, prevents containment sprays)
IOR ANO205LD4 (E2 0 0) ALARM_ON (RPS INSTRUMENT GROSS FAILURE – 210 D-4)
IOR ANO205LF1 (E2 0 0) ALARM_ON (DW HI PRESSURE – 210 F-1)

Trip Overrides

MRF ARI01TO OVERRIDE (prevents ARI auto-initiation on 'A' channel)
MRF RPS03TO OVERRIDE (prevents RPS B1 trip)
MRF RPS04TO OVERRIDE (prevents RPS B2 trip)
MRF RPS06TO OVERRIDE (prevents RPS C2 trip)

Batch Files (Verify the following Batch File exists – DO NOT ENTER AT THIS TIME)

BAT BUS_2_OVERCURRENT_LOCKOUT
IMF MAP06D
IMF MAP06E
IMF MAP06F
IOR ANO209LA2 ALARM_ON
IOR ANO209LC4 ALARM_OFF
IOR ZYP14A3S04 TRIP
IOR ZYP14A3S08 TRIP
IOR ZYP14A3S37 TRIP

Turnover Procedures

- GP-5 completed through step 5.3.1
- ST-O-001-200-2 completed through step 6.2.1.34; next step is 6.3.1
- Provide crew with Key #18 for the turbine stop valve functional test

SIMULATOR OPERATOR DIRECTIONS

EVENT 1 Support crew for main turbine stop valve functional test.

During the performance of ST-O-001-200-2 "Turbine Stop Valve Closure And EOC-RPT Functional" provide the crew with the following information (role play as Extra RO at Panels 20C015 and 20C017, allowing the CRS to apply Tech Specs:

- Step 6.3.7.2 – auxiliary scram relay 5A-K10A **did** de-energize.
- Step 6.3.7.3 – auxiliary scram relay 5A-K10B **did not** de-energize.
- Step 6.3.7.4 – indicating light 5A-DS26B **is lit**.
- Step 6.3.8.1 – auxiliary scram relay 5A-K10A **did** energize.
- Step 6.3.8.2 – auxiliary scram relay 5A-K10B **remained** energized.
- Step 6.3.8.3 – indicating light 5A-DS26B **is lit**.

EVENT 2 After the Tech Spec evaluation is complete, initiate **ET1 (IMF SWS01B)** to trip the 'B' Service Water pump.

When **ET1** is initiated, verify the following overrides are deleted (they were put in to setup the proper conditions for Event #1):

- **DOR ZAOTC08BPOI4275A_1**
- **DOR ZAOTC08BPOI4275A_2**
- **DOR ZAOTC08BPOI4275A_3**
- **DOR ZAOTC08BPOI4275A_4**

When requested to check the 'B' Service Water pump breaker, report that it tripped on instantaneous overcurrent.

Support the crew while placing the 'C' Service Water pump in service IAW SO 30.1.A-2, section 4.2.

Support the crew while restoring the Fuel Pool Service Water booster pumps IAW SO 19.1.A-2, section 4.2.

EVENT 3 For the drywell pressure instrument failure, initiate **ET2** and verify the following:

- **IOR ANO205LF1 ALARM_ON**, DW HI PRESSURE (210 F-1)
- **IOR ANO205LD4 ALARM_ON**, RPS INSTRUMENT GROSS FAILURE (210 D-4)

When requested to check the 2AC065D and 2BC065D instrument racks, report Drywell Pressure Instrument PIS-2-5-12A is upscale high with the gross failure light lit. If directed to reset the gross failure, report that it will NOT reset.

SIMULATOR OPERATOR DIRECTIONS

EVENT 4 After the crew has inserted a half scram on RPS channel A1 and before inserting a PCIS channel trip, initiate a trip of the 'A' condensate pump using **ET3 (IMF MCS05A)**.

- Recirc pumps will fail to automatically runback due to a pre-inserted override **(IOR ZYP06A521S16 FALSE)**.

When requested to check the 'A' condensate pump breaker, report that it tripped on instantaneous overcurrent.

Support the crew as necessary during the power reduction.

EVENT 5 Initiate **ET4 (BAT BUS_2_OVERCURRENT_LOCKOUT)** to cause an overcurrent lockout on #2 aux bus.

Verify a Recirc loop rupture initiates 5 minutes later at 0.3% severity on a 10 minute ramp **(IMF RRS20 0.3 10:00)**.

If asked, report DWCW return header pressure is 28 psig.

After torus sprays are initiated (see Event #8), increase the size of the recirc leak to 3% on a 10 minute ramp **(MMF RRS20 3 10:00)**.

EVENT 6 RPS fails to scram automatically or manually (manual ARI works) – pre-inserted.

The 'A' ARI channel will fail to automatically initiate. When the URO arms the 'A' ARI channel, verify **ET5 (MRF ARI01TO NORMAL)** initiates to restore the 'A' ARI channel to normal.

When directed to close HV-2-3-56 (per T-246), **MRF T220_2 CI OSE** and report HV-2-3-56 is closed.

When directed, perform T-221 by going to the Remote Function Index under TRIP Procedures and **MRF T221_1 DEFEAT**.

WAIT 10 minutes then report to the MCR via telephone that the jumpers for T-221 (step 4.1) have been installed.

EVENT 7 A pre-inserted malfunction **(RCI04)** will fail the RCIC automatic flow controller low. The crew will be able to transfer control to manual and feed the reactor with RCIC.

SIMULATOR OPERATOR DIRECTIONS

EVENT 8 Pre-inserted instrument failures will prevent the crew from spraying the torus or the drywell.

After the crew attempts to spray containment, delete the override on the OPPOSITE RHR LOOP:

- To delete the override on the 'B' RHR Loop, **DOR ZYP12A3S19**
- To delete the override on the 'A' RHR Loop, **DOR ZYP12A1S19**

TERMINATION The scenario may be terminated after the RPV has been depressurized and level has been recovered and is controlled.

SHIFT TURNOVER

PLANT CONDITIONS:

- Unit 2 is steady at 90% power.
- A load drop was been performed in preparation for ST-O-001-200-2.
- GP-5 "Power Operations" is in progress, complete through step 5.3.1.

INOPERABLE EQUIPMENT/LCOs:

- HPCI is blocked for emergent maintenance due to a leak on the booster pump suction flange.

SCHEDULED EVOLUTIONS:

- Perform ST-O-001-200-2.
- Raise power to 100% once Reactor Engineers provide ReMA guidance.

SURVEILLANCES DUE THIS SHIFT:

- Perform ST-O-001-200-2 "Turbine Stop Valve Closure and EOC-RPT Functional".
  - The ST has been started and is complete through step 6.2.1.34.
  - Continue the Turbine Stop Valve functional test beginning at step 6.3.1.
  - An extra RO is available to perform steps 6.3.7.2 through 4, and 6.3.8.1 through 3. **(Provide KEY #18 to the crew during turnover.)**

ACTIVE CLEARANCES:

- HPCI

GENERAL INFORMATION:

- Power was lowered to 90% in accordance with GP-5 "Power Operations" under the Reactor Engineers guidance to perform ST-O-001-200-2. The Reactor Engineer will provide a ReMA for returning to full power following the completion of ST-O-001-200-2.

CRITICAL TASK LIST

1. **Recognize failure of the Reactor Protection System to scram the reactor and initiate Alternate Rod Insertion (ARI) to insert control rods in accordance with T-101 "RPV Control" and RRC 3B.1-2 "Alternate Rod Insertion During A Plant Event".**

2. **Spray the drywell in accordance with T-204 "Initiation of Containment Sprays Using RHR" when conditions permit, but before drywell temperature exceeds 281 degrees F.**

3. **Perform an emergency blowdown in accordance with T-112 "Emergency Blowdown" when RPV water level cannot be restored and maintained above -172 inches.**

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 1 **Page:** 1 of 15

Event Description: Perform the turbine stop valve functional test

Cause: N/A

Effects: N/A

Time	Position	Applicant's Actions or Behavior
	CRS	Direct the PRO to perform ST-O-001-200-2 "Turbine Stop Valve Closure and EOC-RPT Functional", beginning at step 6.3.1.
	PRO	Perform ST-O-001-200-2 "Turbine Stop Valve Closure and EOC-RPT Functional": • Review ST • Inform the Unit Reactor Operator that the test is going to be conducted and what indications can be expected (this may be covered during turnover and/or a CRS briefing). • At Panel 20C015 and 20C017: 1. Verify all RPS 'A' and 'B' scram solenoid group 1-4 lights are lit. 2. Verify A1 and B1 TURB STOP VALVE NORMAL lights are lit. • At Panel 20C008B, place the CV/SV test selector switch to "SV TEST". • Verify the lights on all four TSV test buttons are ON. • At Panel 20C015, place the EOC-RPT test switch in "TEST" (using KEY #18). • Verify alarm 214 D-3 SYSTEM I EOC-RPT LOGIC PWR FAIL/TEST. • At Panel 20C008B, depress and hold TSV-1 test pushbutton. 1. Verify TSV-1 position indicator moves smoothly at low speed to less than 10% open and then fast closes. 2. After 2 to 3 seconds at full close, release the test pushbutton. 3. Verify TSV-1 valve position indicator moves smoothly from closed to full open. • When the RPS relay failure is reported, STOP the functional test. 1. Place the CV/SV test selector switch to "OFF". 2. Verify the lights on all four TSV test buttons are off. 3. Place backup EHC pump to "STOP", then back to "AUTO".
	URO	Monitor plant parameters/assist as directed.

Event Description: RPS failure during turbine stop valve functional test

Cause: Turbine stop valve position switch input to RPS logic fails

Effects: RPS instrumentation failure; application of Tech Specs

Time	Position	Applicant's Actions or Behavior
		NOTE: the "Extra RO" at Panels 20C015 and 20C017 (role-played by the Simulator Operator in the booth) will provide the crew with the following information from ST-O-001-200-2, allowing the CRS to apply Tech Specs: • Step 6.3.7.2 – auxiliary scram relay 5A-K10A **did** de-energize. • Step 6.3.7.3 – auxiliary scram relay 5A-K10B **did not** de-energize. • Step 6.3.7.4 – indicating light 5A-DS26B **is lit**. • Step 6.3.8.1 – auxiliary scram relay 5A-K10A **did** energize. • Step 6.3.8.2 – auxiliary scram relay 5A-K10B **remained** energized. • Step 6.3.8.3 – indicating light 5A-DS26B **is lit**.
	PRO	Stop the functional test when the RPS failure is reported. Perform system restoration IAW ST-O-001-200-2, step 6.7 **(see previous page)**.
	CRS	Direct stopping the functional test and system restoration when the RPS failure is reported. Review Tech Spec 3.3.1.1 and determine Condition A applies (RPS Function 8 on Table 3.3.1.1-1): • Place associated channel (or trip system) in trip within 12 hours, OR • Reduce thermal power to <29.5% RTP within the next 4 hours. Review Tech Spec 3.3.4.2 and determine Condition A applies: • Restore EOC-RPT instrumentation, or place channel in trip, within 72 hours, OR • Apply COLR limits of Tech Spec LCOs 3.2.1, 3.2.2, and 3.2.3 for inoperable EOC-RPT, OR • Reduce thermal power to <29.5% RTP within the next 4 hours.

Event Description: 'B' Service Water pump trips on overcurrent

Cause: Motor winding failure

Effects:

1. Alarms:
   - 216 H-1 "'B' Service Water Pump Trip"
   - 216 H-2 "'B' Service Water Pump OVLD"
   - 216 F-1 "Service Water Header Lo Press"
   - 216 F-5 "Fuel Pool Service Water To HX Lo Press"
2. Loss of 'B' Service Water pump, requiring manual start of 'C' Service Water pump.

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Recognize and report the following alarms and enter corresponding Alarm Response Cards: • 216 H-1 "'B' Service Water Pump Trip" • 216 H-2 "'B' Service Water Pump OVLD" • 216 F-1 "Service Water Header Lo Press" • 216 F-5 "Fuel Pool Service Water To HX Lo Press" Recognize and report trip of the 2B Service Water pump. Recognize and report trip of the 2A and 2B Fuel Pool Service Water (FPSW) booster pumps. Green flag the 2B Service Water pump control switch. Green flag the 2A and 2B FPSW booster pump control switches. Dispatch an Equipment Operator to investigate the Service Water pump and breaker.
	CRS	Enter and direct actions of Alarm Response Cards 216 H-1, 216 H-2, 216 F-1 and 216 F-5. Direct placing the 2C Service Water pump in service IAW SO 30.1.A-2 "Unit 2 Service Water System Normal Operations".
	PRO	Place the 2C Service Water pump in service IAW SO 30.1.A-2 as follows: • Direct an Equipment Operator to prepare the 2C Service Water pump for start IAW SO 30.1.A-2, steps 4.2.3 and 4.2.4. • Start the 2C Service Water pump by placing the pump control switch in "Run". • Verify Service Water pump discharge pressure is 65-95 psig (both in the Control Room and locally).

Event Description: 'B' Service Water pump trips on overcurrent (continued)

Time	Position	Applicant's Actions or Behavior
	CRS	Direct placing the 2A and 2B Fuel Pool Service Water booster pumps in service IAW SO 19.1.A-2 "Fuel Pool Cooling System Startup and Normal Operations".
	PRO	Place the 2A and 2B Fuel Pool Service Water booster pumps in service IAW SO 19.1.A-2 as follows: • Direct an Equipment Operator to prepare the 2A and 2B Fuel Pool Service Water booster pumps for start IAW SO 19.1.A-2, steps 4.2.4 and 4.2.5. • Start the 2A Fuel Pool Service Water booster pump by placing the pump control switch in "Run". • Start the 2B Fuel Pool Service Water booster pump by placing the pump control switch in "Run". • Direct an Equipment Operator to adjust differential pressure for the 2A and 2B Fuel Pool Service Water booster pumps IAW SO 19.1.A-2, step 4.2.8.
	CRS	Request troubleshooting/technical assistance through the Shift Manager.

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 3 **Page:** 5 of 15

Event Description: Drywell pressure instrument fails upscale without the expected half scram

Cause: PIS-2-5-12A fails upscale (gross failure)

Effects: Alarms:

- 210 F-1 "Drywell Hi Pressure Trip"
- 210 D-4 "RPS/PCIS Trip Units in Calibration of Gross Failure"

Drywell pressure instrument fails high (gross failure); RPS half scram fails to occur.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report the following alarms and enter the corresponding Alarm Response Cards: • 210 F-1 "Drywell Hi Pressure Trip" • 210 D-4 "RPS/PCIS Trip Units in Calibration of Gross Failure" Determine actual drywell pressure is below the scram setpoint. Recognize and report the drywell pressure instrument failure did NOT cause the expected RPS half scram.
	CRS	Enter and execute the Alarm Response Cards for 210 F-1 and 210 D-4. Direct an Equipment Operator to check the instrument racks in the Reactor Building to aid in determining the cause of the trip.
	CRS	Direct troubleshooting in accordance with the Alarm Response Card for 210 D-4 "RPS/PCIS Trip Units in Calibration of Gross Failure". Declare drywell pressure instrument PIS-2-5-12A inoperable. Review Tech Spec 3.3.1.1 and determine Condition A applies (RPS Function 6 on Table 3.3.1.1-1): • Place associated channel (or trip system) in trip within 12 hours, OR • Be in Mode 3 within the next 12 hours. Review Tech Spec 3.3.6.1 and determine Condition A applies (PCIS Function 2.b on Table 3.3.6.1-1): • Place associated channel (or trip system) in trip within 12 hours, OR • Be in Mode 3 in the next 12 hours and in Mode 4 in the next 36 hours. Review Tech Spec 3.3.6.2 and determine Condition A applies (SCIS Function 2 on Table 3.3.6.2-1): • Place associated channel (or trip system) in trip within 12 hours, OR • Take the compensatory actions for Condition C. Recognize that RPS/PCIS trips must be installed within 12 hours.

Event Description: Drywell pressure instrument fails upscale without the expected half scram (continued)

Time	Position	Applicant's Actions or Behavior
		NOTE: due to the RPS failure, the Lead Examiner will act as the Shift Manager and direct the crew to perform GP-25 to install the RPS/PCIS trips.
	CRS	Initiate GP-25 Appendices 1 and 5 to install redundant RPS/PCIS trips.
	PRO	Install trip on A1 RPS channel as directed by the CRS using GP-25 Appendix 1: • Complete Appendix 1. • Inform URO that a half scram on RPS channel A1 will be inserted. • At Panel 20C015, insert key and place the A1 Test Keylock Switch to the TEST position. NOTE: the next event will be initiated before the crew can perform Appendix 5 of GP-25 (PCIS).

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 4 **Page:** 7 of 15

Event Description: 'A' Condensate pump trip with automatic Recirc runback failure / power reduction

Cause: 'A' Condensate pump trips on overcurrent / relay failure in the Recirc runback logic

Effects:

1. Alarms:
   - 203 E-1 "A Condensate Pump Overload"
   - 203 E-2 "A Condensate Pump BKR Trip"
2. Recirc automatic runback fails to occur, resulting in lowering RPV level and requiring manual recirc flow reduction to control RPV level.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize and report trip of the 'A' Condensate pump. Recognize and report the 45% Recirc pump runback failed to occur. Recognize and announce entry into the OT-100 "Reactor Low Level": • Recognize the RPV water level drop is caused by a lack of makeup capability, requiring power to be lowered with Recirculation. • Reduce power by lowering the 'A' and 'B' Recirc pump speed controllers to a speed demand of 45% (NOTE: this must be done in a controlled manner that does not result in level swell and a high level trip of the Reactor Feed pumps). Monitor for Thermal Hydraulic Instabilities (THI).
	CRS	Enter / direct actions of ARC 203 E-2 "A Condensate Pump BKR Trip": • Direct the URO to lower power by lowering Recirc flow manually to 45% speed. (May) refer to GP-5 "Power Operations" to determine power must be limited to <80% total feedwater flow with 2 Condensate and 3 Reactor Feedwater pumps. Enter and direct actions IAW OT-112 "Unexpected/Unexplained Change in Core Flow". • Determine position on the PBAPS Power Flow Operation Map. • Direct monitoring for Thermal Hydraulic Instability (THI). (May) enter OT-100 "Reactor Low Level" – no additional actions required.
	PRO	Investigate the cause of the 'A' Condensate pump trip using the applicable alarm response cards. Direct an Equipment Operator to investigate the breaker and pump. Green flag the 'A' Condensate pump control switch.

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 5 / 6 **Page:** 8 of 15

Event Description: Loss of #2 auxiliary bus (loss of Condensate and Feedwater) / RPS failure requires manual ARI initiation to scram the reactor

Cause: Failure in the bus work results in an overcurrent condition and a bus lockout / RPS 'B' automatic and manual channel failure

Effects:

1. Alarms:
   - 219 A-2 "2 Aux Bus Overcurrent Relays"
   - 219 B-2 "2 Aus Bus Lo Voltage"
2. #2 Auxiliary Bus breakers trip, de-energizing the bus and its loads
3. The immediate impact of loss of #2 Auxiliary Bus is the resultant loss of the remaining Condensate pumps, causing RPV water level to drop rapidly.
4. Full Reactor scram does not occur; manual ARI initiation is required.
5. Reactor level drop is greater because more time is spent under power conditions with no high-pressure injection.

Time	Position	Applicant's Actions or Behavior
	PRO	Recognize and report the loss of #2 Auxiliary Bus.
	URO	Recognize and report Reactor water level is dropping rapidly. Attempt to manually scram the Reactor by placing the Mode Selector Switch in "Shutdown". Attempt to scram 'B' RPS by depressing the manual scram pushbutton. Recognize and report an RPS scram has failed to occur. Report entry into T-101 "RPV Control" for the ATWS condition.
CT	CRS	Recognize a failure to scram condition exists; enter and execute T-101 "RPV Control". For RC/Q: • Direct initiation of Alternate Rod Insertion (ARI).

Time	Position	Applicant's Actions or Behavior
	URO	Initiate ARI IAW RRC 3B.1-2 "Alternate Rod Insertion During a Plant Event":
CT		• Rotate the "A" and "B" ARI pushbutton collars to "Armed".

CT		• Depress the "A" and "B" ARI pushbuttons.
		• Verify the following ARI solenoid valves open:
		  ○ SV-2-03-141A
		  ○ SV-2-03-142A
		  ○ SV-2-03-141B
		  ○ SV-2-03-142B
		• Verify and report the scram air header is depressurizing.
		• Monitor and report when control rods begin to insert.
		• Verify APRMs are downscale and report to the CRS.

	CRS	Execute T-101 "RPV Control". For RC/L: • Direct restoring RPV level to +5 to +35 inches with RCIC. • Direct SBLC initiation to augment RPV level control. For RC/P: • Direct instrument nitrogen bypassed and restored IAW GP-8E. • Direct RPV pressure stabilized below 1050 psig.
	PRO	Perform applicable scram actions: • Transfer 13 KV house loads (#1 bus only). • Trip main turbine at approximately 50 MWe. • Verify main generator lockout. • Verify Group II & III isolations and SGTS initiation. • Verify SDV vent and drain valves are closed. • Verify HWC isolated. • Verify recirc pumps are tripped. • Monitor instrument air header pressure and drywell pressure; report instrument air header pressure is greater than drywell pressure.

Event Description: Loss of #2 auxiliary bus / RPS failure (continued)

Time	Position	Applicant's Actions or Behavior
	PRO	Bypass and restore drywell instrument nitrogen IAW GP-8E, as directed. • Place both instrument nitrogen valve control switches to "Close". • Place both keylock switches in "Bypass". • Place both instrument nitrogen valve control switches to "Open". NOTE: this activity may be coordinated between the URO and the PRO.
	URO/PRO	Announce an additional entry condition for T-101 based on Reactor level below -48 inches. Operate RCIC to restore RPV level to +5 to +35 inches **(see Event #7)**. Initiate SBLC, as directed.

Event Description: Reactor coolant leak inside the drywell

Cause: A leak develops on a weld joint on the suction piping of the "B" reactor recirculation pump after it tripped; the leak size propagates over time.

Effects:

1. Initial alarms:
   - 210 F-2 "Drywell Hi-Lo Press"
   - 225 A-4 "Drywell Hi-Lo Press"
2. Drywell pressure and temperature will rise at an increasing rate, eventually leading to a high drywell pressure alarm, ECCS automatic start signals, and PCIS isolation signals. Conditions will escalate requiring the use of containment sprays.

Time	Position	Applicant's Actions or Behavior
	URO/PRO	Recognize and report alarms 210 F-2 "Drywell Hi-Lo Press" and 225 A-4 "Drywell Hi-Lo Press" and enter corresponding Alarm Response Cards.
	CRS	Enter and execute follow-up actions of OT-101 "High Drywell Pressure": • If drywell pressure reaches 2 psig, then enter T-101 "RPV Control" and T-102 "Primary Containment Control" and execute concurrently with OT-101. • Direct additional drywell cooling placed in service.
	URO/PRO	Maximize drywell cooling by placing all drywell cooler fans to RUN.
	CRS	Enter and execute T-102 "Primary Containment Control" when drywell pressure reaches 2 psig. For PC/P: • Direct torus sprays initiated IAW T-204 "Initiation of Containment Sprays Using RHR". For DW/T: • Direct drywell cooling maximized by performing T-223 "DW Cooler Fan Bypass". For PC/G: • Direct CAD placed in service as time permits.

Event Description: Reactor coolant leak inside the drywell (continued)

Time	Position	Applicant's Actions or Behavior
	CRS	When drywell pressure and temperature plot within the safe region of the Drywell Spray Initiation Limit Curve: • Direct drywell cooling fans shut down. • Direct drywell sprays initiated IAW T-204 "Initiation of Containment Sprays Using RHR".
CT		
	URO/PRO	Monitor T-102 parameters (torus temperature, torus level, drywell pressure, torus pressure, drywell temperature) and provide trends to the CRS as appropriate.
	URO	Maximize drywell cooling by performing T-223 "DW Cooler Fan Bypass". Shutdown drywell cooling fans when directed.
	PRO	Spray the torus in accordance with T-204 "Initiation of Containment Sprays Using RHR" **(see Event #8)**.
CT		Spray the drywell in accordance with T-204 "Initiation of Containment Sprays Using RHR".
	URO/PRO	Place CAD in service when directed. Monitor RPV level, and report to the CRS RPV level is continuing to lower.
		NOTE: the crew will also enter T-103 "Secondary Containment Control" due to high main steam tunnel temperatures (points 1 and 16 on TR-2-13-139) but there are no substantive actions that are required.

Event Description: Reactor coolant leak inside the drywell (continued)

Time	Position	Applicant's Actions or Behavior
	CRS	After it is determined RPV level cannot be maintained above –172 inches, exit the RC/L leg of T-101 and enter/execute T-111 "Level Restoration": • Direct ADS inhibited. • Direct Core Spray and LPCI pumps started. • When RPV level drops to –172 inches, direct performance of T-112 "Emergency Blowdown".
CT		Enter and execute T-112 "Emergency Blowdown". • Verify torus level is above 7 feet. • Verify reactor pressure is 50 psig above torus pressure. • Direct 5 ADS SRVs opened.
	URO/PRO	Inhibit ADS when directed. Verify start of all available Core Spray and LPCI pumps.
CT		Open the 5 ADS SRVs when directed.
CT	CRS	After T-112 is executed, direct RPV injection maximized with all systems, subsystems, and alternate subsystems. After it is determined RPV level can be maintained above –172 inches, exit T-111 and enter T-101, RPV Control at step RC/L-1. Direct RPV level restored to +5 to +35 inches with Core Spray/RHR.
CT	URO/PRO	Maximize injection with all systems, subsystems, and alternate subsystems. Restore and maintain RPV level +5 to +35 inches, as directed.

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 7 **Page:** 14 of 15

Event Description: RCIC flow controller fails in automatic

Cause: Instrument failure

Effects: When RCIC is initiated, it will not reach sufficient speed to inject water into the reactor due to the flow controller failure. Operator action will be required in order to inject with RCIC.

Time	Position	Applicant's Actions or Behavior
	URO	Recognize RCIC is not injecting following system startup.
		Respond to the failure by taking manual control of the RCIC flow controller and raising turbine speed.
		Manually control RCIC turbine speed as necessary to establish and control RCIC injection to the RPV.
		Report the RCIC flow control failure and current status of RCIC to CRS.

Op Test No.: 1 **Scenario No.:** 3 **Event No.:** 8 **Page:** 15 of 15

Event Description: Pressure instrument failure prevents using containment spray on 1 RHR loop

Cause: Drywell pressure input to spray logic permissive not functioning

Effects: Prevents containment spray using B (A) loop of RHR, resulting in Drywell temperature rising toward 281 degrees F (the A (B) loop of RHR is available).

Time	Position	Applicant's Actions or Behavior
		NOTE: the spray logic failure will effect whichever loop of RHR (B or A) is first selected to spray the containment. The simulator operator will delete the associated override (failure) on the opposite RHR loop to allow spraying the containment with that loop. The steps listed below apply to the B loop of RHR but are the same as those for the A loop of RHR, with the exception of the letter designations.
	PRO	Spray the torus in accordance with T-204 "Initiation of Containment Sprays using RHR": • Verify System 1 and 2 Drywell Pressure Permits Containment Spray annunciators (224 D-3, 225 B-3) are lit. • Place keylock switch 10A-S18B in "MANUAL OVERRIDE". • Momentarily place switch 10A-S17B in "MANUAL". • Open or verify open MO-2-10-39B "Torus Header". • Open or verify open MO-2-10-89B(D) HPSW Hx Outlet". • Verify load on EDG supplying selected pumps is below 1400 KW. • Start B(D) RHR Pump. • Start B(D) HPSW Pump. • Close or verify closed MO-2-10-34B "Full Flow Test". • Throttle open MO-2-10-38B "Torus Spray" to obtain 1,000 gpm on FI-2-10-136B.
CT		Recognize and report inability to spray the torus (drywell) with the B (A) loop of RHR.
CT	CRS	Direct the operator to attempt to spray the torus with the opposite loop of RHR.
CT	PRO	As directed, spray the torus using the opposite loop of RHR in accordance with T-204 "Initiation of Containment Sprays using RHR".

TERMINATION CRITERIA:

The scenario may be terminated when the RPV has been depressurized and reactor level has been recovered and controlled.