Facility: Oyster Creek Task No.: COOO00044

Task Title: Week 4 Safety Related Equipment Verification

Job Performance Measure No.: NRC Admin JPM1 (RO)

K/A Reference: G2.1.29 (4.1)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power

Task Standard: Three instances of improper EOP Jumper Bypass Plug placement have been identified. The Acceptance Criteria is declared UNSAT (not met)

Required Materials: None.

General References:

1. 680.4.007, Safety Related Equipment Verification, Revision 14

Initiating Cue: Complete Section 6.4, Week Four Verification, IAW 680.4.007, Safety Related Equipment Verification, starting at Step 6.4.3.

Time Critical Task: No.

Validation Time: 10 Minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: Verifies Prerequisites and reviews Precautions and Limitations.

Standard: Verifies Prerequisites and reviews Precautions and Limitations.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: 6.4.3.1

Verify that the bypass plugs are positioned as follows:

1. EOP Bypass Plug Panel in rear of Panel 2R
   - Bypass plug in position BP1
   - Bypass plug in position BP2
   - No other plugs inserted

Standard: Verifies that the bypass plugs are positioned as follows:

1. EOP Bypass Plug Panel in rear of Panel 2R
   - Bypass plug in position BP1
   - Bypass plug in position BP2
   - No other plugs inserted

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 4

Procedure Step: 6.4.3.2
Verify that the bypass plugs are positioned as follows:
2. EOP Bypass Plug Panel in rear of Panel 3F
- BP2, BP4, BP6, BP8, BP10, BP12, BP14
- No other plugs inserted

Standard: Verifies that the bypass plugs are positioned as follows:
2. EOP Bypass Plug Panel in rear of Panel 3F
- BP2, BP4, BP6, BP8, BP10, BP12, BP14
- No other plugs inserted
- Reports that no plug is located in BP14

Cue: Acknowledge the report and tell the Candidate to continue (Leave the plugs in their current positions)

Comment: _____

SAT/UNSAT

✓ Performance Step: 5

Procedure Step: 6.4.3.3
Verify that the bypass plugs are positioned as follows
3. EOP Bypass Plug Panel in rear of Panel 6R
- No plugs inserted

Standard: Verifies that the bypass plugs are positioned as follows
3. EOP Bypass Plug Panel in rear of Panel 6R
- No plugs inserted

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 6

Procedure Step: 6.4.3.4
Verify that the bypass plugs are positioned as follows
4. EOP Bypass Plug Panel in rear of Panel 7R
- No plugs inserted

Standard: Verifies that the bypass plugs are positioned as follows
4. EOP Bypass Plug Panel in rear of Panel 7R
- No plugs inserted

Comment: _____

SAT/UNSAT

✓ Performance Step: 7

Procedure Step: 6.4.3.5
Verify that the bypass plugs are positioned as follows
5. EOP Bypass Plug Panel in rear of Panel 11R
- Bypass plug in position BP4
- No other plugs installed

Standard: Verifies that the bypass plugs are positioned as follows
5. EOP Bypass Plug Panel in rear of Panel 11R
- Bypass plug in position BP4
- No other plugs installed
- Reports that plug is installed in BP2 instead of BP4

Cue: Acknowledge the report and tell the Candidate to continue (Leave the plugs in their current positions)

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 8
	Procedure Step: 6.4.3.6 Verify that the bypass plugs are positioned as follows 6. EOP Bypass Plug Panel inside of Panel 10XF • Bypass plug in position BP2 • Bypass plug in position BP4 • No other plugs installed
Standard:	Verify that the bypass plugs are positioned as follows 6. EOP Bypass Plug Panel inside of Panel 10XF • Bypass plug in position BP2 • Bypass plug in position BP4 • No other plugs installed • Reports that plug is installed in BP3
Cue:	Acknowledge the report and tell the Candidate to continue (Leave the plugs in their current positions)
Comment:	
SAT/UNSAT	

Performance Information

✓ Performance Step: 9

Procedure Step: 6.4.4

Compare results of this surveillance with Section 7.0, Acceptance Criteria. Record comments/discrepancies.

Standard: Reviews Acceptance Criteria and determines the Acceptance Criteria 7.1.3 is Unsat (has not been met)

Note: For failure of the acceptance criteria, the procedure then directs that the requirements of LS-OC-125 be followed. That procedure has been superseded by LA-AA-125, Corrective Action program, which would require generation of an IR or AR (incident report). The Candidate may state generation of an IR is required. (Not required for critical step.) Writing comments in Step 6.4.4 is not required.

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: Three instances of improper EOP Jumper Bypass Plug placement have been identified. The Acceptance Criteria is declared UNSAT (not met)

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Admin JPM1 (RO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. This JPM can be performed at any power level
2. Remove EOP Bypass Plug in rear Panel 3F at position BP14
3. Remove EOP Bypass Plug in rear Panel 11R from position BP4 and place in BP2
4. Place an additional EOP Bypass Plug in Panel inside Panel 10XF in position BP3

STUDENT HANDOUT

Initial Conditions:

1. The plant is at rated power

Task Cue:

Complete Section 6.4, Week Four Verification, IAW 680.4.007, Safety Related Equipment Verification, starting at Step 6.4.3.

Facility: Oyster Creek Task No.: 2000301402

Task Title: Perform Core Thermal Limits Verification

Job Performance Measure No.: NRC Admin JPM 2 (RO)

K/A Reference: G2.1.7 (4.4)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power in 4-loop operation
2. Reactor Recirculation Pump A is isolated
3. Core Spray Main Pump NZ01A is inoperable
4. It is currently 0850 on 2/26/11

Task Standard: A review the Reactor Core State Parameters printout reveals that MAPRAT and FLLLP are unacceptable and requires actions

Required Materials: None

General References:

1. 202.1, Power Operations, revision 123

Initiating Cue: Complete the Core Thermal Limits Verification IAW with Attachment 202.1-3, Core Checks/APRM Status Check/HB Input Check Instructions, Section 1.0. After completing the Attachment, perform the following for each core thermal limit: 1) state the status of the core thermal limit (whether the core thermal limit is satisfactory / unsatisfactory); and 2) for those core thermal limits deemed unsatisfactory, if any, state the requirements which must be met or apply. Show how you have reached these conclusions.

Time Critical Task: No.

Validation Time: 10 Minutes

Performance Information

Denote critical steps with a check mark ✓

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 2

Procedure Step 1.1

Obtain a "Screen Print" of PPC Reactor Core State Parameters display **or** 3D Monicore Monitor Case Summary (P1 Report).

Standard: Obtains a "Screen Print" of PPC Reactor Core State Parameters display **or** 3D Monicore Monitor Case Summary (P1 Report).

CUE: Provide the applicant the PPC Reactor Core State Parameters display (Handout).

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: 1.2

Compare the PPC Reactor Core State Parameters display to Attachment 1-5, Column C.

Standard: Compares the PPC Reactor Core State Parameters display to Attachment 1-5, Column C, and notes the following:

- MFLCPR is **satisfactory** IAW Column C of Attachment 202.1-5 (<1.00 with 4 or more Recirculation loops operating)
  - Note: The Candidate may report that actions are required IAW Column A (**NOT** required for the critical task)
- MFLPD is **satisfactory** IAW Column C of Attachment 202.1-5 (<1.00 with 4 or more Recirculation loops operating)
- MAPRAT is **unsatisfactory** IAW Column C of Attachment 202.1-5 (> 0.882 for an isolated recirculation loop and an inoperable Core Spray Pump with primary containment inerted)
  - Requirements of Tech Spec 3.10 applies
  - Notify Manager Reactor Engineering and Director Operations
  - Requirements of Tech Specs 3.3.F.2.a applies
- FLLLP is **unsatisfactory** IAW Column C of Attachment 202.1-5 (>100%)
  - Take action to restore (ie., insert control rods)
  - Notify Manager Reactor Engineering and Director Operations

Note: Reviewing Tech Specs is not required.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 4

Procedure Step: 1.3

(NOTE: Date/time of last monitor case is shown after "Last Model Calculation" on the PPC display and after "LATEST 3D MONICORE CASE" on the 3D Monicore Operator Window).

Review Screen Print or P1 Report for the current shift to ensure date/time of last monitor case is reasonable (within the past two hours unless 3D Monicore Monitor is INHIBITED per approved station procedure).

Standard: Determines the "Last Model Calculation" is within 2 hours of the given current time/date.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 5

Procedure Step: 1.4

Attach Screen Print or P1 Report to the Daily Summary Table (Attachment 202.1-4).

Standard: Attaches the Screen Print or P1 Report to the Daily Summary Table (Attachment 202.1-4).

CUE: The Screen Print is attached to the Daily Summary Table (Attachment 202.1-4)

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: Attachment 202.1-3 section 1.0 is complete. Determines MAPRAT and FLLLP are unacceptable.

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Admin JPM 2 (RO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of the Reactor Core State Parameters printout (Reactor Core State Admin 10-1 NRC2) available for Step 2.
2. Have a copy of 202.1 available for the applicant.

STUDENT HANDOUT

Initial Conditions:

1. The plant is rated power in 4-loop operation
2. Reactor Recirculation Pump A is isolated
3. Core Spray Main Pump NZ01A is inoperable
4. It is currently 0850 on 2/26/11

Task Cue:

Complete the Core Thermal Limits Verification IAW with Attachment 202.1-3, Core Checks/APRM Status Check/HB Input Check Instructions, Section 1.0. After completing the Attachment, perform the following for each core thermal limit: 1) state the status of the core thermal limit (whether the core thermal limit is satisfactory / unsatisfactory); and 2) for those core thermal limits deemed unsatisfactory, if any, state the requirements which must be met or apply. Show how you have reached these conclusions.

Facility: Oyster Creek Task No.: RPT00005

Task Title: Application of Radiation Exposure limits

Job Performance Measure No.: NRC Admin JPM3 (RO)

K/A Reference: 2.3.4 (RO 3.2)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at coasting down at the end of the cycle
2. Preparations are being made to use of the Shutdown Cooling System during the shutdown/cooldown
3. Each Shutdown Cooling Pump needs to have its oil changed and a valve lineup performed
4. Assume NO radiation exposure is received in transit to and from the job location.

Task Standard: Calculates the dose for each job and determines that all jobs can be performed without exceeding the administrative dose limit of 2000 mrem/yr.

Required Materials: Calculator

General References:

1. RP-AA-203, Exposure Control and Authorization, revision 3
2. RP-AA-300, Radiological Survey Program, revision 5

Initiating Cue: Given supporting information, determine which jobs you can complete without exceeding your administrative dose limit. The jobs are to be performed in the order stated. Your current dose is 1915 mrem.

Time Critical Task: No.

Validation Time: 10 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

Note: Steps may be performed out of sequence.

✓ Performance Step: 2

Procedure Step: Calculates dose for the jobs

Note: The candidate may calculate the dose for all jobs and determine if there is enough dose remaining, or the candidate may calculate the dose for the first job and compare to remaining dose, and then the second job and so on. Step sequence is not important.

Standard: Dose for Job 1: (1/2 hour x 50 mrem/hr) = 25 mrem

Dose for Job 2: (1/2 hour x 60 mrem/hr) = 30 mrem

Dose for Job 3: (1/2 hour x 80 mrem/hr) = 40 mrem

Total Dose: 95 mrem

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: Determines remaining dose

Standard: Remaining dose: 2000 mrem – 1915 mrem = 85 mrem

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: Determine that jobs 1 and 2 can be performed without exceeding the administrative dose limit.

Standard: Determine that jobs 1 and 2 can be performed without exceeding the administrative dose limit.

85 mrem remaining < 95 mrem left for the 3rd job

(or 1915 mrem + 95 mrem = 2010 > 2000 mrem administrative limit)

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: Calculates the dose for each job and determines that only jobs 1 & 2 can be performed without exceeding the administrative dose limit of 2000 mrem/yr.

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Admin JPM 3 (RO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

STUDENT HANDOUT

Initial Conditions:

1. The plant is at coasting down at the end of the cycle
2. Preparations are being made to use of the Shutdown Cooling System during the shutdown/cooldown
3. Each Shutdown Cooling Pump needs to have its oil changed and a valve lineup performed
4. Assume NO radiation exposure is received in transit to and from the job location.

Task Cue:

Given supporting information, determine which jobs you can complete without exceeding your administrative dose limit. The jobs are to be performed in the order stated. Your current dose is 1915 mrem.

JOB DESCRIPTION

1. **JOB 1**
    a. Drain SDC Pump A oil
    b. Refill SDC Pump A with oil
        i. Total time (for oil drain and refill): 15 minutes at the pump/motor
    c. Perform valve lineup at SDC Pump A
        i. Total time: 15 minutes at the pump/motor
2. **JOB 2**
    a. Drain SDC Pump B oil
    b. Refill SDC Pump B with oil
        i. Total time (for oil drain and refill): 15 minutes at the pump/motor
    c. Perform valve lineup at SDC Pump B
        i. Total time: 15 minutes at the pump/motor
3. **JOB 3**
    a. Drain SDC Pump C oil
    b. Refill SDC Pump C with oil
        i. Total time (for oil drain and refill): 15 minutes at the pump/motor
    c. Perform valve lineup at SDC Pump C
        i. Total time: 15 minutes at the pump/motor

Facility: Oyster Creek Task No.: 2000501406

Task Title: Determine Primary Containment Water Level

Job Performance Measure No.: NRC Admin JPM 4 (RO)

K/A Reference: G2.4.21 (4.0)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant was at rated power when a LOCA occurred.
2. The TORUS WATER LEVEL recorders on Panel 16R indicate upscale

Task Standard: Determines that Primary Containment water level is approximately 745".

Required Materials: None

General References:

1. EMG-SP38, Determining Primary Containment Water Level, revision 0

Initiating Cue: Determine Primary Containment water level IAW EMG-SP38, Determining Primary Containment Water Level.

Time Critical Task: No.

Validation Time: 3 Minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

✓ Performance Step: 2

Procedure Step 3.1.1

Record Torus pressure from one of the following:

P (Torus) = _____ psig

1. Digital indicator on Panel 4F
2. Computer Point ID PTIP12
3. PT-IP12 on Panel 1F/2F

Standard: Records Torus pressure as about 45 psig

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Procedure Step: 3.1.2 Record Drywell pressure from PI-IP08 Panel 1F/2F P (DW) = _____ psig
Standard:	Records Drywell pressure as about 30 psig
Comment:	_____ _____ _____
SAT/UNSAT	

✓	Performance Step: 4
	Procedure Step: 3.1.3 Calculate ΔP ΔP = P (Torus) – P (DW) = _____ psid
Standard:	Calculates ΔP as approximately 15 psig
Comment:	_____ _____ _____
SAT/UNSAT	

Performance Information

Note: Step 3.1.4 does not apply.

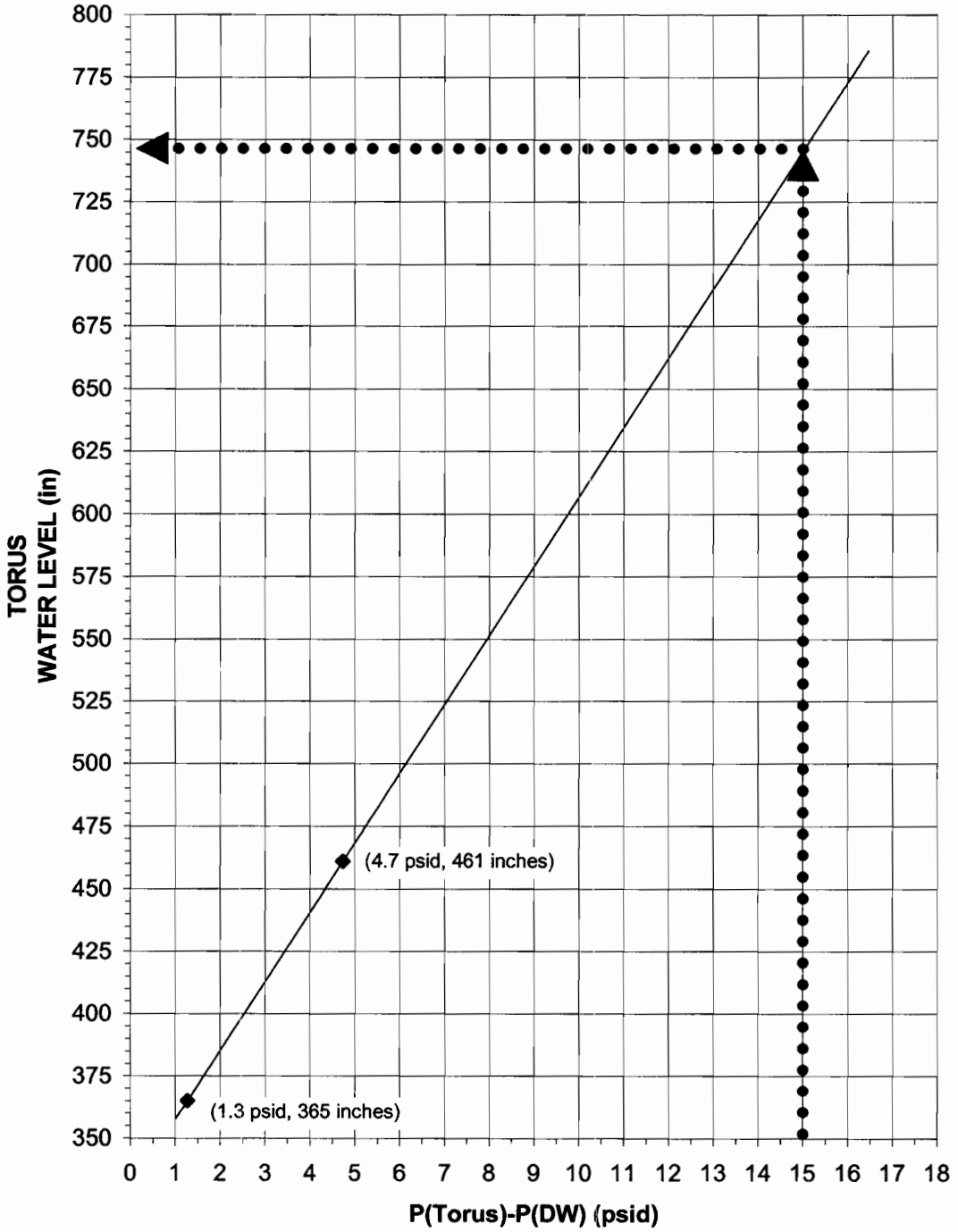
✓	Performance Step: 5
	Procedure Step: 3.1.5
	If ΔP is less than 16 psid, then determine Primary Containment Water Level using Figure SP-38-1.
Standard:	Using Figure SP-38-1, calculates Primary Containment water level is approximately 745".
Cue:	
Comment:	
SAT/UNSAT	

Terminating Cue: Determines that Primary Containment water level is approximately 745".

JPM Stop Time: _____

Performance Information

Figure EMG-SP38-1
Containment Water Level Determination Using DW Pressure Indication From Panel 1F/2F



Validation of Completion

JPM Number: NRC Admin JPM 4 (RO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of EMG-SP38, Determining Primary Containment Water Level available.

STUDENT HANDOUT

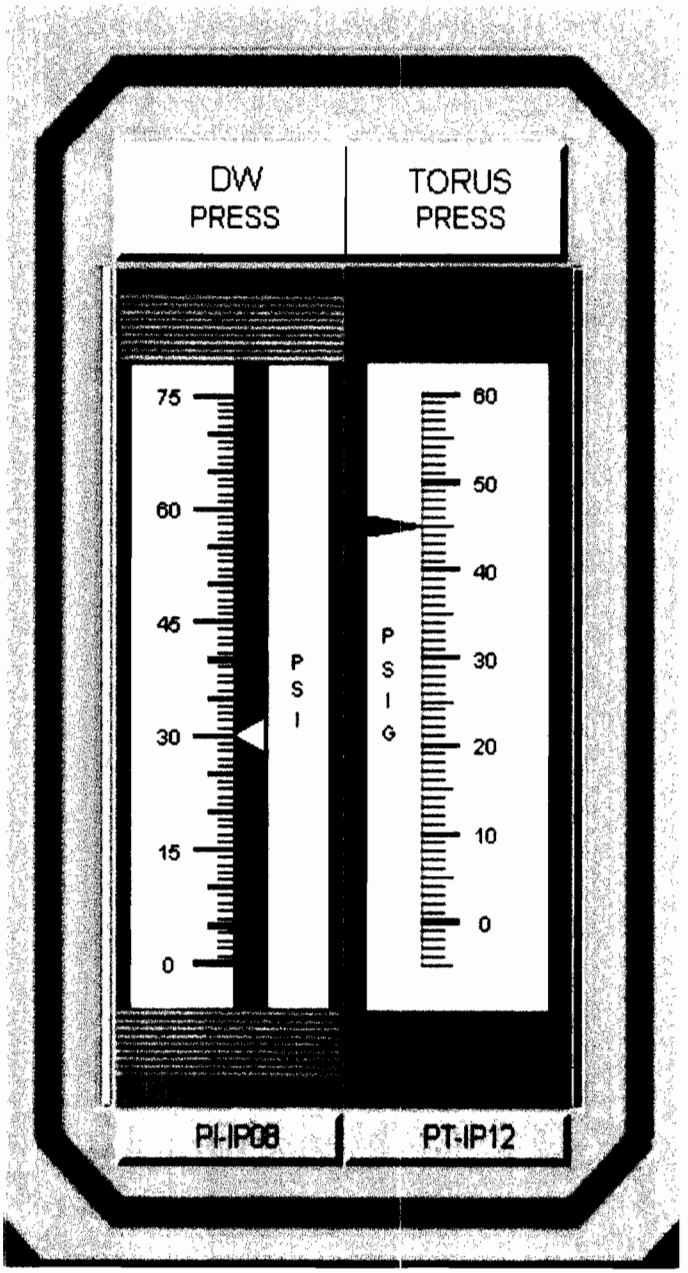
Initial Conditions:

1. The plant was at rated power when a LOCA occurred.
2. The TORUS WATER LEVEL recorders on Panel 16R indicate upscale

Task Cue:

Determine Primary Containment water level IAW EMG-SP38, Determining Primary Containment Water Level.

STUDENT HANDOUT



Facility: Oyster Creek Task No.: COO00030

Task Title: Review a Technical Specification Log Sheet

Job Performance Measure No.: NRC JPM ADMIN SRO1 (SRO)

K/A Reference: Generic 2.1.3 (SRO 3.9)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power with all Recirculation Pumps on.
2. You are the oncoming Unit Supervisor after being off for the last 12 hours.
3. Your last shift was completed at 06:30:00AM *on* Tuesday, March 01, 2011.
4. The current date/time is March 01, 2011 at 6:30:00PM.
5. There are no LCOs, ABNs, or EOPs have been entered on the previous shift or are currently in effect.

Task Standard: The Candidate has reviewed the Oyster Creek Technical Specification Log Sheet and determines that Tech Specs 3.3 and 3.7 apply and the Primary Containment Control EOP requires entry due to High Drywell Temperature and reactor shutdown must be commenced per Tech Specs.

Required Materials: None.

General References:

1. Oyster Creek Technical Specifications
2. Primary Containment Control EOP

Initiating Cue: As the oncoming Unit Supervisor, review the Technical Specification Log Sheet, procedure 681.4.001 Attachment 1, sheets E1-1 and E1-2. Note any abnormalities, if any, and if abnormalities exist, state the required actions IAW Tech Specs and/or EOPs.

Time Critical Task: No.

Validation Time: 20 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back. Provide the completed Turnover Sheet.*

Comment: _____

SAT/UNSAT

Note: The following steps may be performed in any order.

✓ Performance Step: 2

Procedure Step: Reviews the Technical Specification Log Sheet.

Standard: Reviews the Technical Specification Log Sheet and notes the following:

- EDG Fuel Oil Tank Level is 13, 950 gal
- Calculated UILR is approximately 5.2 gpm
- Bulk DW temperature is 151.2 °F

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: Applies Tech Specs and EOPs.

Standard:

I. Due to Reactor Coolant System Leakage (Unidentified Leak Rate) > 5 gpm, applies Tech Spec 3.3.D:

1. Reactor coolant system leakage shall be limited to:

a. 5 gpm unidentified leakage
b. 25 gpm total (identified and unidentified)
c. 2 gpm increase in unidentified leakage rate within any 24 hour period while operating at steady state power

2. IAW TS 3.3.D.2, with the reactor coolant system leakage greater than the limits in 3.3.D.1.a or b above, reduce the leakage rate to within the acceptable limits within 8 hours, or place the reactor in the shutdown condition within the next 12 hours and be in the cold shutdown condition within the following 24 hours. The requirements of TS 3.3.D.3 also apply. Stating the TS requirements and not the specific TS steps is acceptable.

II. Due to EDG Fuel Oil Tank level < 14,000 gal, both EDGs must be declared INOPERABLE IAW TS 3.7.C.4.A:

1. IAW TS 3.7.C.3 (per TS 3.7.C.4 not being met), with both diesel generators INOPERABLE, the reactor shall be placed in the COLD SHUTDOWN condition (30 hours).

III. Due to Drywell Temperature > 150F, commence a shutdown (IAW the TS Log Sheet) and enter the Primary Containment Control EOP (based on exceeding an entry condition).

Comment: _____

_____

_____

SAT/UNSAT

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Admin JPM1 (SRO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of Tech Specs available (if requested)
2. Have a copy of the Primary Containment Control EOP available (if requested)
3. Have a copy of 681.4.004, Technical Specification Log Sheet, Attachment 1, sheets E1-1, marked up.

STUDENT HANDOUT

Initial Conditions:

1. The plant is at rated power with all Recirculation Pumps on.
2. You are the oncoming Unit Supervisor after being off for the last 12 hours.
3. Your last shift was completed at 06:30:00AM *on* Tuesday, March 01, 2011.
4. The current date/time is March 01, 2011 at 6:30:00PM.
5. There are no LCOs, ABNs, or EOPs have been entered on the previous shift or are currently in effect.

Initiating Cue:

As the oncoming Unit Supervisor, review the Technical Specification Log Sheet, procedure 681.4.001 Attachment 1, sheets E1-1 and E1-2. Note any abnormalities, if any, and if abnormalities exist, state the required actions IAW Tech Specs and/or EOPs.

Facility: Oyster Creek Task No.: 3410102411

Task Title: Review a Completed Pre-Critical Checkoff IAW Procedure 201

Job Performance Measure No.: NRC Admin JPM2 (SRO)

K/A Reference: G2.1.23 (4.4)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant has just completed all major activities during a refuel outage
2. Preparations are being made for a plant startup
3. The REACTOR MODE SELECTOR switch is in REFUEL
4. Attachment 201-2, Pre-Critical Checkoff has been completed and is awaiting review

Task Standard: The plant is deemed NOT ready for an uninterrupted startup to rated power. The correct reasons and required actions are stated.

Required Materials: None

General References:

1. Procedure 201, Plant Startup, Revision 71
2. Tech Specs

Initiating Cue: Perform Step 78 of the Pre-Critical Checkoff for Attachment 201-2 ONLY. From this review, determine if the plant is ready for an uninterrupted startup to rated power. If the plant is NOT ready, state why and what actions are required to be ready.

Time Critical Task: No.

Validation Time: 30 Minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Note: The following steps can be performed in any order.

✓ Performance Step: 2

Determines the plant is not ready for an uninterrupted startup to rated power for the following reasons:

Step 12.4.1 shows only 1 operable SRM. SRM 22 reads 30000, SRM 23 reads 2, and SRM 24 is bypassed.

TS 3.1.1.K requires a minimum of 2 operable SRMs to support the rodblock function.

Any inoperable SRM must be made operable to withdraw control rods.

Standard: Recognizes the Tech Spec applicability due to the inoperability of 3 SRMs. 2 SRMs must be operable to withdraw control rods.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Determines the plant is not ready for an uninterrupted startup to rated power for the following reasons: Step 45.1 shows that MCC 1A24 is not operable. Tech Spec 3.7 states that the reactor shall not be made critical unless all of the following requirements are satisfied: The listed buses or panel listed in the TS are energized, and this includes MCC 1A24.
Standard:	Recognizes the Tech Spec applicability due to the inoperability of MCC 1A24. MCC 1A24 must be made operable prior to going critical.
Comment:	
SAT/UNSAT	

Performance Information

✓ Performance Step: 4

Determines the plant is not ready for an uninterrupted startup to rated power for the following reasons:

Step 73.1 shows that conductivity and chlorides are above the allowable limits.

TS 3.3.E.1 provides the following:

3.3.E.1: The reactor coolant quality during power operation with steaming rates to the turbine-condenser of less than 100,000 pounds per hour shall be limited to: conductivity 2 us/cm[s=mhos at 25°C (77°F); chloride ion 0.1 ppm.

TS 3.3.E.2 provides the following:

3.3.E.2: When the conductivity and chloride concentration limits given in 3.3.E.1 are exceeded, an orderly shutdown shall be initiated immediately, and the reactor coolant temperature shall be reduced to less than 212°F within 24 hours.

Standard: Recognizes the Tech Spec applicability due high conductivity and chloride values which must be reduced below the limits in TS 3.3.E.1.

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: The plant is deemed NOT ready for an uninterrupted startup to rated power. The correct reasons and required actions are stated.

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC SRO Admin JPM2

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have Tech Specs available
2. Have a clean copy of procedure 201 available
3. Have a prepared copy of Attachment 201-2 ready

STUDENT HANDOUT

Initial Conditions:

1. The plant has just completed all major activities during a refuel outage
2. Preparations are being made for a plant startup
3. The REACTOR MODE SELECTOR switch is in REFUEL
4. Attachment 201-2, Pre-Critical Checkoff has been completed and is awaiting review

Task Cue:

Perform Step 78 of the Pre-Critical Checkoff for Attachment 201-2 ONLY. From this review, determine if the plant is ready for an uninterrupted startup to rated power. If the plant is NOT ready, state why and what actions are required to be ready.

Facility: Oyster Creek Task No.: 3420302026

Task Title: Review Completed Surveillance Test

Job Performance Measure No.: NRC SRO Admin JPM 3

K/A Reference: G2.2.12 (SRO 4.1)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power
2. Surveillance test 609.3.022, "A" Isolation Condenser Isolation Test and Calibration – A1 Sensors First, has just been completed for Isolation Condenser A

Task Standard: The surveillance test has been reviewed. Isolation Condenser A has been declared inoperable and that TS Table 3.1.1 and TS 3.8 have been applied

Required Materials: None.

General References:

1. Surveillance procedure 609.3.022, revision 0
2. Tech Spec Table 3.1.1
3. Tech Spec 3.8

Initiating Cue: Review the acceptance criteria for the TEST DATA SHEET Attachment 609.3.022-2, sheets 1 & 2. Note any discrepancies or required actions, if any.

Time Critical Task: No.

Validation Time: 10 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: Review completed surveillance test

Standard: Reviews completed surveillance test

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Procedure Step: Determine that acceptance criteria 7.1 has not been met • The as-left trip points for IB011A1 and IB11A2 are > allowed (23.5 – 24.5 psig)
Standard:	Determines that acceptance criteria 7.1 has not been met • The as-left trip points for IB011A1 and IB11A2 are > allowed (23.5 – 24.5 psig)
Comment:	_____
SAT/UNSAT	

✓	Performance Step: 4
	Procedure Step: Comply with TS Table 3.1.1.H • Direct the Panel Operator to isolate Isolation Condenser A
Standard:	Complies with TS Table 3.1.1.H • Directs the Panel Operator to isolate Isolation Condenser A
Comment:	_____
SAT/UNSAT	

Performance Information

✓ Performance Step: 5

Procedure Step: Declare Isolation Condenser A inoperable and apply TS 3.8.C

Standard: Declares Isolation Condenser A inoperable and applies TS 3.8.C

- If one isolation condenser becomes inoperable during the run mode the reactor may remain in operation for a period not to exceed 7 days provided the motor operated isolation and condensate makeup valves in the operable isolation condenser are verified daily to be operable.

May also state: 1) document the as-found failure in the CAP System; 2) Initiate an IR; Notify the Shift Manager (not required for credit)

Comment: _____

_____

_____

SAT/UNSAT

Note: The candidate may also require the initiation of an IR and that upper management notifications be made.

Terminating Cue: The surveillance test has been reviewed. Isolation Condenser A has been declared inoperable and isolated, and that TS Table 3.1.1 and TS 3.8 have been applied

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Admin JPM 3 (SRO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Setup

1. Have a marked-up copy of surveillance test 609.3.002, Isolation Condenser Isolation Test and Calibration – A1 Sensors First. Provide pages 32-33 (Acceptance Criteria), and Attachment 609.3.022-2 (filled out).
2. Have a copy of the entire procedure available
3. Have Tech Specs available
4. Have LS-AA-125 copy available
5. Have several full blank copies of surveillance test 609.3.002, Isolation Condenser Isolation Test and Calibration – A1 Sensors First, in case the applicant requests to view the entire surveillance.

STUDENT HANDOUT

Initial Conditions:

1. The plant is at rated power
2. Surveillance test 609.3.002, Isolation Condenser Isolation Test and Calibration – A1/B1 Sensors First, has just been completed for Isolation Condenser A ONLY

Task Cue:

Review the acceptance criteria for the TEST DATA SHEET Attachment 609.3.022-2, sheets 1 & 2. Note any discrepancies or required actions, if any.

Facility: Oyster Creek Task No.: 3420302008

Task Title: Authorize TIP Room Entry

Job Performance Measure No.: NRC Admin JPM 4 (SRO)

K/A Reference: 2.3.13 (3.8)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power
2. TIP machine 1 was used earlier today for LPRM calibrations
3. An event occurred when retracting the TIP to its shield position. The following indications were noted for TIP Machine 1:
   - The IN SHIELD light is extinguished
   - The IN CORE light is illuminated
   - The BALL VALVE OPEN light is illuminated and the BALL VALVE CLOSED light is extinguished
4. A clearance order has been applied to TIP Machine 1
5. It has been determined that an inspection in the TIP Room is required and inside the TIP Drive Mechanism 1 (RB 38')
6. Maintenance Planners expect that the TIP drive chain will not have to be disconnected
7. No entry into the TIP Room has been made over the last 2 months

Task Standard: Attachment 1 has been reviewed and routed to RPSS for signature, and Attachment 2 has been initiated

Required Materials: A partially completed Attachment 1 to RP-AB-460.

General References:

1. RP-AB-460, TIP Area Access Controls, revision 1
2. 405.1, Placing the TIP System is Stand-By Readiness, revision 16
3. 405.2, Operation of the TIP System, revision 27

Initiating Cue:

1. Review Attachment 1 of RP-AB-460, Initial TIP Room Entry Data Sheet. Sign for Operations Shift Manger if acceptable. If not acceptable, note any discrepancies and state the required actions.
2. Following your review of Attachment 1, complete RP-AB-460, Attachment 2, TIP Drive Mechanism Access Data Sheet, Sections I, II and III.

Time Critical Task: No.

Validation Time: 11 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Note: The candidate may initiate Attachment 2 prior to reviewing Attachment 1. This is allowed. Steps may be performed in any order.

_____ Performance Step: 2

Procedure Step: Review Attachment 1, Initial TIP Room Entry Data Sheet

Standard: Reviews Attachment 1, Initial TIP Room Entry Data Sheet

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Note: Steps 3 and 4 may occur in any order

✓ Performance Step: 3

Procedure Step: Step I.1, Attachment 1

Report that "decay time since TIPs last run is > 48 hours" should state NO and that Attachment 1 is incorrectly annotates YES.

Standard: Report that "decay time since TIPs last run is > 48 hours" should state NO and that Attachment 1 is incorrectly annotates YES.

(The candidate should correct this on Attachment 1)

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: Step I.2, Attachment 1

Report that "TIP Detectors withdrawn into Shield" should state NO and that Attachment 1 is incorrectly annotates YES.

Standard: Report that "TIP Detectors withdrawn into Shield" should state NO and that Attachment 1 is incorrectly annotates YES.

(The candidate should correct this on Attachment 1)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 8

Procedure Step: II, Attachment 2

"Determine TIP Detector Location" as In Core

Standard: "Determines TIP Detector Location" as In Core

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 9

Procedure Step: III, Attachment 2

Determine "TIP Drive Mechanism Clearance Order Applied" as YES

Standard: Determines "TIP Drive Mechanism Clearance Order Applied" as YES

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: Attachment 1 has been reviewed and routed to RPSS for signature (to complete Attachment III), and Sections I, II and III of Attachment 2 have been completed.

JPM Stop Time: _____

Facility: Oyster Creek Task No.: 2000501406

Task Title: Determine Primary Containment Water Level and Determine Corrective Actions

Job Performance Measure No.: NRC Admin JPM 5 (SRO)

K/A Reference: G2.4.21 (4.6)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom X Simulator _____ Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant was at rated power when a LOCA occurred.
2. The TORUS WATER LEVEL recorders on Panel 16R indicate upscale.
3. The RPV has been Emergency Depressurized.
4. Containment Spray System 1 is in operation in the Drywell Spray Mode.

Task Standard: Determines that Primary Containment water level is approximately 385 in.

Required Materials: None

General References:

1. EMG-SP38, Determining Primary Containment Water Level, revision 0

Initiating Cue: Determine Primary Containment water level IAW EMG-SP38, Determining Primary Containment Water Level and state any actions required, if any, by the EOPs.

Time Critical Task: No.

Validation Time: 5 Minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

✓ Performance Step: 2

Procedure Step 3.1.1

Record Torus pressure from one of the following:

P (Torus) = _____ psig

1. Digital indicator on Panel 4F
2. Computer Point ID PTIP12
3. PT-IP12 on Panel 1F/2F

Standard: Records Torus pressure as about 27 psig

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Procedure Step: 3.1.2 Record Drywell pressure from PI-IP08 Panel 1F/2F P (DW) = _____ psig
Standard:	Records Drywell pressure as about 25 psig
Comment:	_____ _____ _____
SAT/UNSAT	

✓	Performance Step: 4
	Procedure Step: 3.1.3 Calculate ΔP ΔP = P (Torus) – P (DW) = _____ psid
Standard:	Calculates ΔP as approximately 2 psig
Comment:	_____ _____ _____
SAT/UNSAT	

Performance Information

Note: Step 3.1.4 does not apply.

✓ Performance Step: 5

Procedure Step: 3.1.5

If ΔP is less than 16 psid, then determine Primary Containment Water Level using Figure SP-38-1.

Standard: Using Figure SP-38-1, calculates Primary Containment water level is approximately 385 in.

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 6

Procedure Step: N/A

From the Primary Containment Control EOP, Terminate Drywell Sprays if Primary Containment Water Level cannot be maintained below 348 in. (Torus Water Level Leg)

Standard: States that Drywell Sprays must be terminated.

Comment: _____

_____

_____

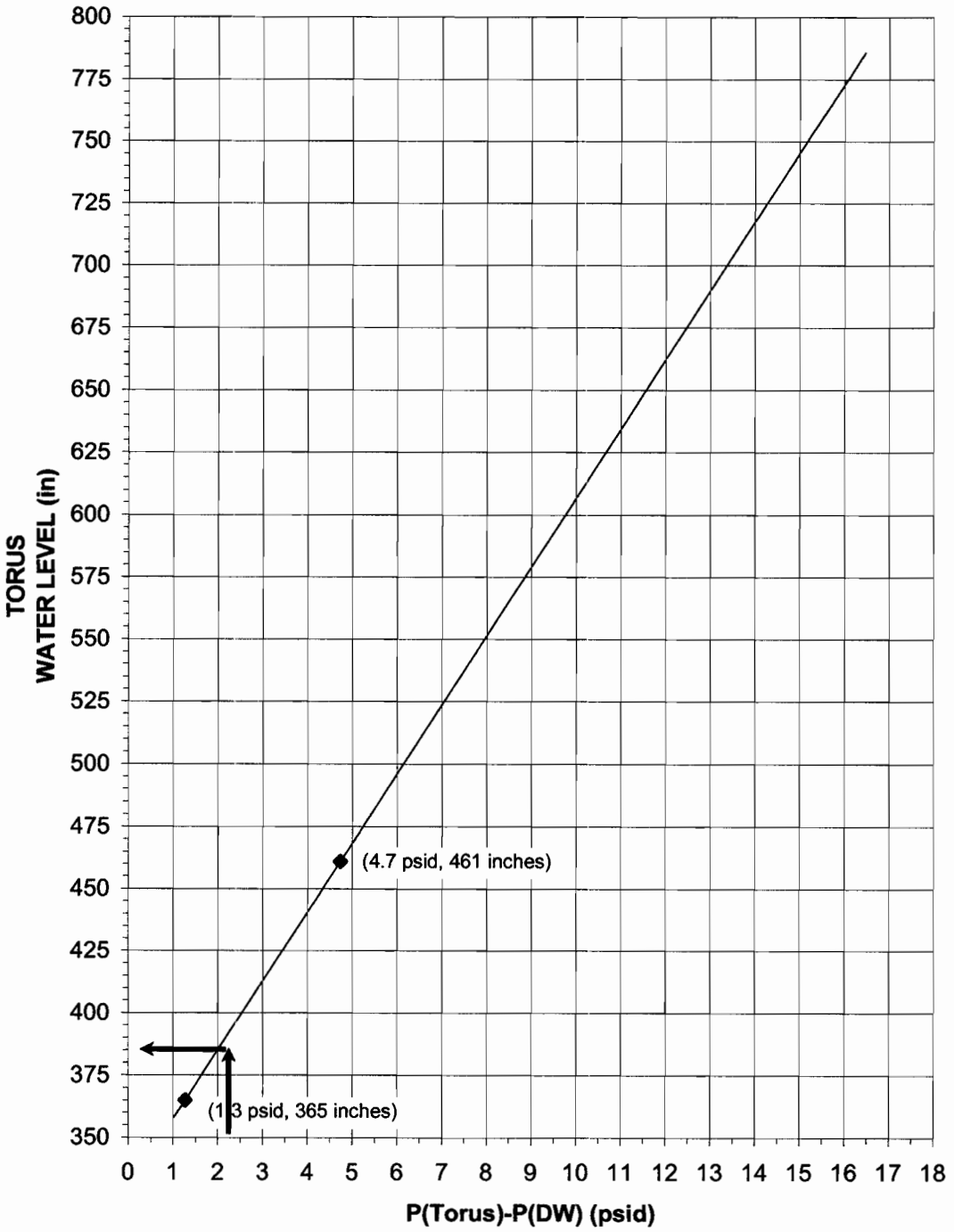
SAT/UNSAT

Terminating Cue: Determines that Primary Containment water level is approximately 385 in. States that Drywell Sprays must be terminated.

JPM Stop Time: _____

Performance Information

Figure EMG-SP38-1
Containment Water Level Determination Using DW Pressure Indication From Panel 1F/2F



Validation of Completion

JPM Number: NRC Admin JPM 5 (SRO)

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of EMG-SP38, Determining Primary Containment Water Level available.
2. Have a copy of the Primary Containment Control EOP available.

STUDENT HANDOUT

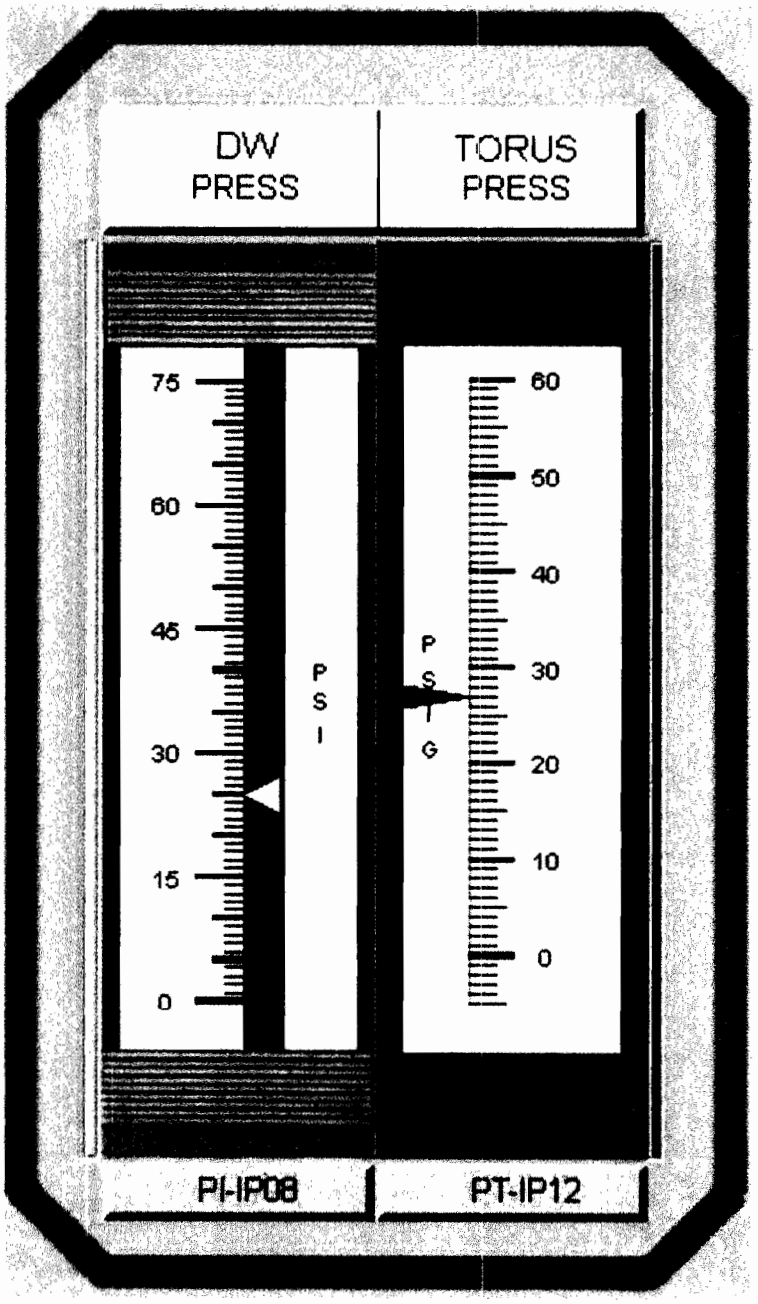
Initial Conditions:

1. The plant was at rated power when a LOCA occurred.
2. The TORUS WATER LEVEL recorders on Panel 16R indicate upscale.
3. The RPV has been Emergency Depressurized.
4. Containment Spray System 1 is in operation in the Drywell Spray Mode.

Task Cue:

Determine Primary Containment water level IAW EMG-SP38, Determining Primary Containment Water Level and state any actions required, if any, by the EOPs.

STUDENT HANDOUT



Facility: Oyster Creek Task No.: 2090201003

Task Title: Perform Core Spray Surveillance with faulted Core Spray Pump (Alternate Path)

Job Performance Measure No.: ILT 10-1 NRC Sim JPM1 (RO/SRO)

K/A Reference: 2090001 A4.01 (RO/SRO 3.8/3.6)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power.
2. Core Spray Main Pump NZ01C is tagged out of service due to an oil leak.
3. Core Spray Pump Operability Test, 610.4.002, is in progress and is complete up to and including Step 6.4 for Core Spray System A.
4. The testing is a normal surveillance for pumps NZ01A and NZ03A only.
5. An Equipment Operator has been briefed on the evolution, and is standing-by with the procedure and a radio on RB 51'.
6. Plant announcements for the pump starts have already been made.

Task Standard: The Core Spray Booster Pump NZ03A is manually tripped after the Core Spray Pump NZ01A trips.

Required Materials: None.

General References:

1. Procedure 610.4.002, Core Spray Pump Operability Test, revision 49.

Initiating Cue: Continue with surveillance test 610.4.002, Core Spray Pump Operability Test, beginning at Step 6.5.

Time Critical Task: No.

Validation Time: 8 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: Reviews Precautions and Limitations.

Standard: Reviews Precautions and Limitations.

Note: The candidate may state that annunciator B3d, KEEP FILL TROUBLE, will be an expected alarm. Acknowledge the report.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Note: If annunciator C5e, TORUS LEVEL HI/LO alarms, state that other operators will respond to this.

✓ Performance Step: 3

Procedure Step: 6.5

Start Core Spray MAIN PUMP (control switch on 1F/2F) for Core Spray Main Pump NZ01A.

Standard: Places Core Spray MAIN PUMP NZ01A control switch to START (red light ON, green light OFF, MAINS PUMP AMPS NZ01A rises, PUMP DISCH PRESS MAINS rises).

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 4

Procedure Step: 6.5.1

Record Core Spray PUMP DISCH PRESS – MAINS PIT-RV03A (1F/2F) > 150 psig.

Standard: Records Core Spray PUMP DISCH PRESS – MAINS PIT-RV03A (1F/2F) > 150 psig.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 5

Procedure Step: 6.6

If Core Spray PUMP DISCH PRESS – MAINS PIT-RV03A is > 100 psig, then start a Core Spray Booster Pump from the control switch on 1F/2F.

Standard: Verifies PUMP DISCH PRESS – MAINS PIT-RV03A is > 100 psig, then starts Core Spray Booster Pump NZ03A by placing BOOSTER PUMP NZ03A control switch to START (red light ON, green light OFF, PUMP DISCH PRESS – BOOSTERS rises).

Comment: _____

SAT/UNSAT

Performance Step: 6

Procedure Step: 6.6.1

Verify alarm SYSTEM 1 FLOW PERMISSIVE (B2e) annunciates (if reactor press < 300 psig).

Standard: Recognizes reactor pressure is > 300 psig and that SYSTEM 1 FLOW PERMISSIVE (B2e) will not annunciate.

Comment: _____

SAT/UNSAT

Performance Information

Note: In the following step, when core spray flow reaches 4000 gpm, the Core Spray Main Pump NZ01A will trip. This initiates the Alternate Path.

✓	Performance Step: 7
	Procedure Step: 6.7
	Open V-20-27 and establish Core Spray flow by taking the keylock switch to OPEN (51' NW).
Standard:	Directs the EO over the radio to open V-20-27 and establish Core Spray flow by taking the keylock switch to OPEN. (Red light ON, green light OFF)
	On the pump trip, verifies MAIN PUMP NZ01A red light OFF, green light ON, MAINS PUMP AMPS NZ01A at 0.
Booth Cue:	Acknowledge the report. Insert Trigger 2 (LOA-CSS016 from 0% to 100%)
Note:	**When Core Spray System I flow exceeds 4000 GPM, Core Spray Main Pump NZ01A will trip. Annunciator B4e will alarm.**
	The candidate may refer to the alarm response B4e and notify the SRO. If so notified, acknowledge the report.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 8

Procedure Step: P&L 4.9 application

Trips Core Spray Booster Pump NZ03A.

Standard: Trips Core Spray Booster Pump NZ03A by placing CORE SPRAY 1 BOOSTER PUMP NZ03A control switch to STOP (red light OFF; green light ON; PUMP DISCH PRESS BOOSTERS falls to 0).

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: The candidate has manually tripped Core Spray Booster Pump NZ03A.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC SIM JPM1

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to full power IC (IC-115) or similar
2. Insert Remote LOA-CSS017 to FALSE
    a. This will rack-in the breaker for Core Spray System I Test Valve, V-20-27
3. Insert LOA-CSS055 to RACKED OUT
    a. This will rack-out the breaker for Core Spray Main Pump NZ01C
4. Insert the following:
    a. Conditional Trigger pp_fitrv26a_1v.gt.4000 on Trigger 1
    b. Malfunction MAL-CSS002a on Trigger 1 with a 20 second time delay
        i. These two items will trip Core Spray Main NZ01A when Core Spray System I flow exceeds 4000 GPM after 20 seconds
5. Have a surveillance test completed up through step 6.4 (610.4.002). N/A those steps for system C.
6. Place a tag on Core spray Main Pump NZ01C.
7. At JPM completion, verify no marks in RAP-B4e.
8. Place on Trigger 2: LOA-CSS016 from 0% to 100% (This will open the core spray test valve V-20-27)

STUDENT HANDOUT

Initial Conditions:

1. The plant is at rated power.
2. Core Spray Main Pump NZ01C is tagged out of service due to an oil leak.
3. Core Spray Pump Operability Test, 610.4.002, is in progress and is complete up to and including Step 6.4 for Core Spray System A.
4. The testing is a normal surveillance for pumps NZ01A and NZ03A only.
5. An Equipment Operator has been briefed on the evolution, and is standing-by with the procedure and a radio on RB 51'.
6. Plant announcements for the pump starts have already been made.

Task Cue:

Continue with surveillance test 610.4.002, Core Spray Pump Operability Test, beginning at Step 6.5.

Facility: Oyster Creek Task No.: 2450201302

Task Title: Perform Anticipatory Scram Turbine Stop Valve Closure Test with RPS Actuation (Alternate Path)

Job Performance Measure No.: ILT 10-1 NRC Sim JPM2 (RO/SRO)

K/A Reference: 245000 A4.07 (RO/SRO 2.9/2.9)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is steady at 90% power with no other testing in-progress.
2. All prerequisites have been verified.
3. The procedure is complete up through step 6.2.

Task Standard: The Candidate recognizes a ½ scram when Turbine Stop Valve #2 is tested and places the MAIN STOP VALVE TEST SELECT switch in OFF, resets the ½ scram, notifies the Shift Manager, and exits the test.

Required Materials: None.

General References:

1. Procedure 619.4.002, Anticipatory Scram Turbine Stop Valve Closure Test (>45% Load), revision 20

Initiating Cue: Perform Procedure 619.4.002, Anticipatory Scram Turbine Stop Valve Closure Test (>45% Load), starting at Step 6.3

Time Critical Task: No.

Validation Time: 11 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: Reviews Precautions and Limitations.

Standard: Verifies Prerequisites and reviews Precautions and Limitations.

Comment: _____

SAT/UNSAT

Performance Information

NOTE: Procedure step 6.3 requires no actions or verifications by the candidate and is not listed as a Performance Step here.

✓ Performance Step: 3

Procedure Step: 6.4

Place the Main Stop Valve Test Select switch in No. 3 position

Standard: Places the MAIN STOP VALVE TEST SELECT switch in No. 3 position

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: 6.5

Momentarily press pushbutton Main Stop Valve Test

Standard: Momentarily presses the MAIN STOP VALVE TEST pushbutton

CUE: If the No. 3 Stop Valve doesn't start to move, direct the applicant to depress the MAIN STOP VALVE TEST pushbutton for until the valve starts to move.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 5

Procedure Step: 6.5.1

Verify No. 3 Stop Valve closed

Standard: Verifies No. 3 Stop Valve closed (MAIN STOP VALVE POSITION No. 3 pointer points to C. The Candidate may also verify position indication lights on Panel 7F, red light OFF and green light ON.)

Comment: _____

SAT/UNSAT

Performance Step: 6

Procedure Step: 6.5.2

Verify the following:

- Relay 1K12 energized
- Relay 2K11 energized
- Relay 1K52 energized
- Relay 2K51 energized

Standard: Verifies the following relays energized: 1K12, 2K11, 1K52, and 2K51.

Cue: **RPS relays are not modeled**. State that Relays 1K12, 2K11, 1K52, and 2K51 are energized.

Comment: _____

SAT/UNSAT

NOTE: Procedure step 6.6 requires no actions or verifications by the candidate and is not listed as a Performance Step here.

Performance Information

✓ Performance Step: 7

Procedure Step: 6.7

Place the Main Stop Valve Test Select switch in No. 2 position

Standard: Places the MAIN STOP VALVE TEST SELECT switch in No. 2 position

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 8

Procedure Step: 6.7.1

Verify No. 3 Stop Valve opens

Standard: Verifies No. 3 Stop Valve opens (MAIN STOP VALVE POSITION No. 3 pointer points to O. The Candidate may also verify position indication lights on Panel 7F as red light ON and green light OFF)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 9

Procedure Step: 6.7.2

Verify all Stop valves open

Standard: Verifies all Stop valves open (all MAIN STOP VALVE POSITION No. 1, 2, 3, 4 pointers point to O. The Candidate may also verify position indication lights on Panel 7F as red lights ON and green lights OFF)

Comment: _____

SAT/UNSAT

NOTE: The following step will result in an unexpected ½ scram. This initiates the Alternate Path.

✓ Performance Step: 10

Procedure Step: 6.8

Momentarily press pushbutton Main Stop Valve Test

Standard: Momentarily presses pushbutton Main Stop Valve Test

Note: This will result in a ½ scram condition. When recognized by the candidate, provide the cue below.

Cue: Relay 1K11 is de-energized

Comment: _____

SAT/UNSAT

Note: The Candidate will now apply prior Step 6.6.

Performance Information

✓ Performance Step: 11

Procedure Step: 6.6.1

Immediately open No. 2 Stop Valve by placing the Main Stop Valve Test Select switch in OFF.

Standard: Immediately opens No. 2 Stop Valve by placing the MAIN STOP VALVE TEST SELECT switch in OFF

Booth: When TSV 2 indicates full open, DELETE MAL-RLY-RPS021A

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 12

Procedure Step: 6.6.2

Reset the half-scram

Note/Cue: The candidate may ask for concurrent verification for resetting the ½ scram. State that you will perform the concurrent verification and agree with what ever action the candidate proposes.

Standard: Resets the half-scram by pressing the SCRAM SYSTEM RESET pushbutton (RPS 1 SCRAM SOLENOIDS ON)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 13

Procedure Step: 6.6.3

Notify the Shift Manager

Standard: Notifies the Shift Manager

Cue: As the Shift Manager, acknowledge the report

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 14

Procedure Step: 6.6.4

Exit this procedure

Standard: Exits this procedure

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: The Candidate recognizes a ½ scram when Turbine Stop Valve #2 is tested and places the MAIN STOP VALVE TEST SELECT switch in OFF, resets the ½ scram, notifies the Shift Manager, and exits the test.

JPM Stop Time: _____

Validation of Completion

JPM Number: NRC Sim JPM 2

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset the simulator to a full power IC (115) and reduce recirculation flow to attain 90% power.

NOTE:	It is okay to use a similar IC to the IC listed above, provided the IC actually used is verified to be compatible with this and other JPMs that are scheduled to be run concurrently.

2. Insert Trigger: on Trigger 1, insert the following:
   a. hwx31d047r.lt.0.50
   b. This will initiate the trigger when Stop Valve #2 goes 50% closed
3. Insert malfunction RLY-RPS021A on Trigger 1. When Stop Valve #2 goes 50% closed, this will de-energize relay 1K11.
   a. When Stop Valve #2 is re-opened in performance step 12, RLY-RPS021A will be manually deleted.
4. Verify all Turbine Stop Valve selsyns indicate OPEN on Panel 14R.
5. Place red magnetic arrows at RPS relays 1K11 and 2K12 on the back panels.
6. Have a copy of the surveillance completed up to and including step 6.2 for each candidate (619.4.002)
7. This completes the setup for this JPM.

STUDENT HANDOUT

Initial Conditions:

1. The plant is steady at 90% power with no other testing in-progress.
2. All prerequisites have been verified.
3. The procedure is complete up through step 6.2.

Task Cue:

Perform Procedure 619.4.002, Anticipatory Scram Turbine Stop Valve Closure Test (>45% Load), starting at Step 6.3

Facility: Oyster Creek Task No.: 2000501401

Task Title: Cool down the RPV using the Isolation Condenser tube side vents IAW SP-15, Alternate Pressure Control Systems – IC Tube Side Vents (Alternate Path)

Job Performance Measure No.: ILT 10-1 NRC Sim JPM3 (RO/SRO)

K/A Reference: 295021 AA1.04 (RO/SRO 3.7/3.7)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is shutdown and cooling down to COLD SHUTDOWN IAW RPV Control – no ATWS.
2. Isolation Condensers are not required to be isolated.
3. The Main Condenser is intact.
4. The Offsite radioactivity release rate is below that required for an Unusual Event.
5. Shutdown Cooling interlocks cannot be cleared.
6. All modes of pressure control for cooldown are unavailable except the Isolation Condenser Tube Side Vents.
7. The Isolation Condenser DC valves are isolated due to previous RPV level being > 180". RPV water level is currently 155 in and steady.

Task Standard: RPV is being cooled down using Isolation Condenser B Tube Side Vents.

Required Materials: None.

General References:

1. Support Procedure 15, Alternate Pressure Control Systems – IC Tube Side Vents, Revision 0.

Initiating Cue: As the US, I am directing you to establish a 10F/hr cooldown rate IAW SP-15, Alternate Pressure Control Systems – IC Tube Side Vents. 'A' Isolation Condenser is the preferred system.

Time Critical Task: No.

Validation Time: 12 minutes

Performance Information

Denote critical steps with a check mark ✓

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

Performance Step: 2

Procedure Step: 2.1.1

Verify Isolation Condensers are **not** required to be isolated.

Standard: Verifies Isolation Condensers are **not** required to be isolated.

Note: Initial Conditions state that Isolation Condensers are **not** required to be isolated.

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 3

Procedure Step: 2.1.2

Verify Main Condenser is intact.

Standard: Verifies Main Condenser is intact.

Note: Initial Conditions state the Main Condenser is intact.

Comment: _____

SAT/UNSAT

Performance Step: 4

Procedure Step: 2.1.3

Verify Offsite radioactivity release rate is expected to remain below the release rate, which requires an Unusual Event.

Standard: Verifies Offsite radioactivity release rate is expected to remain below the release rate, which requires an Unusual Event.

Note: Initial Conditions state that Offsite radioactivity release rate is expected to remain below the release rate, which requires an Unusual Event.

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 5

Procedure Step: 2.2

Open the EOP BYPASS PLUGS panel inside of Panel 10XF.

Standard: Opens the EOP BYPASS PLUGS panel inside of Panel 10XF.

Comment:

SAT/UNSAT

✓ Performance Step: 6

Procedure Step: 2.2.1

Remove the bypass plug from position BP2.

Standard: Removes the bypass plug from position BP2.

Comment:

SAT/UNSAT

Performance Information

✓ Performance Step: 7

Procedure Step: 2.2.2

Insert a bypass plug into position BP1.

Standard: Inserts a bypass plug into position BP1.

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 8

Procedure Step: 2.2.3

Remove the bypass plug from position BP4.

Standard: Removes the bypass plug from position BP4.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 9

Procedure Step: 2.2.4

Insert a bypass plug into position BP3.

Standard: Inserts a bypass plug into position BP3.

Comment:

SAT/UNSAT

Performance Step: 10

Procedure Step: 3.1

Verify that RPV Water Level is below 180 in.

Standard: Verifies that RPV Water Level is below 180 in.

CUE: If RPV water level has risen to > 180 in following the JPM setup, inform the applicant RPV water level is < 155 in and steady.

Comment:

SAT/UNSAT

Performance Information

✓ Performance Step: 11

Procedure Step: 3.2

Confirm open the following Isolation Condenser Steam Inlet Valves for the Isolation Condenser A: (Panel 1F/2F)

- V-14-30
- V-14-31

Standard: Confirms open the following Isolation Condenser Steam Inlet Valves for the Isolation Condenser A: (Panel 1F/2F)

- V-14-30
- V-14-31

Note: Places the CLOSE-AUTO-OPEN switch for the valves to the OPEN position. Waits for valve indications to show red OPEN light lit and green CLOSED light extinguished.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

NOTE: In the next step Isolation Condenser A vents will NOT open. This will initiate the **Alternate Path**.

Performance Step: 12

Procedure Step: 3.3

Open the following Isolation Condenser Vents for the Isolation Condensers to be used: (Panel 11F)

- V-14-5 / V-14-20

Standard: Opens the following Isolation Condenser Vents for the Isolation Condensers to be used: (Panel 11F)

V-14-5 / V-14-20

Note: Isolation Condenser A vent valves V-14-5 and V-14-20 will not open. The applicant will re-perform SP-15 starting at step 3.2 for Isolation Condenser B.

CUE: The applicant may inform the US that Isolation Condenser A vent valves will not open. Direct the applicant to continue with Support Procedure 15. It is acceptable if the applicant establishes a cooldown using the Isolation Condenser B vents without first consulting the US.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 13

Procedure Step: 3.2

Confirm open the following Isolation Condenser Steam Inlet Valves for the Isolation Condenser B: (Panel 1F/2F)

- V-14-32
- V-14-33

Standard: Confirms open the following Isolation Condenser Steam Inlet Valves for the Isolation Condenser B: (Panel 1F/2F)

- V-14-32
- V-14-33

Note: Places the CLOSE-AUTO-OPEN switch for the valves to the OPEN position. Waits for valve indications to show red OPEN light lit and green CLOSED light extinguished.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓	Performance Step: 14
	Procedure Step: 3.3 Open the following Isolation Condenser Vents for the Isolation Condensers to be used: (Panel 11F) • V-14-1 / V-14-19
Standard:	Opens the following Isolation Condenser Vents for the Isolation Condensers to be used: (Panel 11F) • V-14-1 / V-14-19
Note:	Waits for valve indications to show red OPEN light lit and green CLOSED light extinguished.
CUE:	Another operator will continue with and control the cooldown that is already established.
Comment:	_____
	_____
	_____
SAT/UNSAT	

Terminating Cue: RPV cooldown is in progress using Isolation Condenser B tube side vents.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM3

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to IC-115 or any shutdown IC where the Primary Containment is NOT isolated
2. Insert a manual scram
3. Stabilize RPV pressure around 500 psig
4. Stabilize RPV level below 180 in
5. Shut the IC A & B vents
6. Insert VLV-ICS002 to CLOSE
   - Keeps IC A vent valve V-14-5 closed
7. Insert VLV-ICS004 to CLOSE
   - Keeps IC A vent valve V-14-20 closed
8. Have a copy of SP-15 for the applicant

STUDENT HANDOUT

Initial Conditions:

1. The plant is shutdown and cooling down to COLD SHUTDOWN IAW RPV Control – no ATWS.
2. Isolation Condensers are not required to be isolated.
3. The Main Condenser is intact.
4. The Offsite radioactivity release rate is below that required for an Unusual Event.
5. Shutdown Cooling interlocks cannot be cleared.
6. All modes of pressure control for cooldown are unavailable except the Isolation Condenser Tube Side Vents.
7. The Isolation Condenser DC valves are isolated due to previous RPV level being > 180". RPV water level is currently 155 in and steady.

Initiating Cue:

As the US, I am directing you to establish a 10F/hr cooldown rate IAW SP-15, Alternate Pressure Control Systems – IC Tube Side Vents. 'A' Isolation Condenser is the preferred system.

Facility: Oyster Creek Task No.: 2000501416

Task Title: Place the H2/O2 Monitoring System in service

Job Performance Measure No.: ILT 10-1 NRC Sim JPM4 (RO/SRO)

K/A Reference: 500000 EA1.01 (RO/SRO 3.4/3.3)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. A LOCA is in progress.
2. The Primary Containment Control EOP has been entered.

Task Standard: Channel A H2/O2 Monitoring System is in service.

Required Materials: None.

General References:

1. Support Procedure 39, Placing the H2/O2 Monitoring System In Service, Revision 0.

Initiating Cue: As the US, I am directing you to place the H2/O2 monitoring system in service IAW Support Procedure 39.

Time Critical Task: No.

Validation Time: 7 minutes

Performance Information

Denote critical steps with a check mark ✓

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 2

Procedure Step: 3.1.1

(For Channel A) Verify the Power switch is in the ON position

Standard: Verifies the Power switch is in the ON position

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Procedure Step: 3.1.2
	Place switch for H_2 Sample Supply V-38-37 to OPEN
Standard:	Places switch for H_2 Sample Supply V-38-37 to OPEN
Note:	Verifies that the red OPEN light is lit and the green CLOSE light is extinguished.
Comment:	
SAT/UNSAT	

✓	Performance Step: 4
	Procedure Step: 3.1.3
	Place switch for H_2 Sample Supply V-38-38 to OPEN
Standard:	Places switch for H_2 Sample Supply V-38-38 to OPEN
Note:	Verifies that the red OPEN light is lit and the green CLOSE light is extinguished.
Comment:	
SAT/UNSAT	

Performance Information

✓ Performance Step: 5

Procedure Step: 3.1.4

Place switch for H_2 Sample Supply V-38-39 to OPEN

Standard: Places switch for H_2 Sample Supply V-38-39 to OPEN

Note: Verifies that the red OPEN light is lit and the green CLOSE light is extinguished.

Comment: _____

SAT/UNSAT

✓ Performance Step: 6

Procedure Step: 3.1.5

Place switch for H_2 Sample Supply V-38-40 to OPEN

Standard: Places switch for H_2 Sample Supply V-38-40 to OPEN

Note: Verifies that the red OPEN light is lit and the green CLOSE light is extinguished.

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 7

Procedure Step: 3.1.6

Place switch for PUMP (P-38-5) in ENABLE position

Standard: Places switch for PUMP (P-38-5) in ENABLE position

Comment: _____

SAT/UNSAT

✓ Performance Step: 8

Procedure Step: 3.1.7

Depress Channel A ANALYZE PB to place Analyzer IT-1A in Analyze mode.

Standard: Depresses Channel A ANALYZE PB to place Analyzer IT-1A in Analyze mode.

Note: PB = Pushbutton

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 9

Procedure Step: 3.1.8

Touch CRT Screen and VERIFY:

- GAS MONITORING SYSTEM screen ILLUMINATES
- GAS MONITORING SYSTEM screen does not indicate Stand-By mode.

Standard: Touches CRT Screen and VERIFY:

- GAS MONITORING SYSTEM screen ILLUMINATES
- GAS MONITORING SYSTEM screen does not indicate Stand-By mode.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 10

Procedure Step: 3.1.9

Verify H_2/O_2 Recorder AR-0002 begins recording

Standard: Verifies H_2/O_2 Recorder AR-0002 begins recording

CUE: Inform the applicant Channel A has begun recording and another operator will continue with the support procedure

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: Channel A of the H2/O2 monitoring system has been placed in service IAW SP-39.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM4

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to any IC
2. Have a copy of SP-39 for the applicant

STUDENT HANDOUT

Initial Conditions:

1. A LOCA is in progress.
2. The Primary Containment Control EOP has been entered.

Initiating Cue:

As the US, I am directing you to place the H2/O2 monitoring system in service IAW Support Procedure 39.

Facility: Oyster Creek Task No.: 2620101002

Task Title: Manual Transfer of the 4160 VAC Bus 1A from the Auxiliary Transformer to the Startup Transformer (Alternate Path)

Job Performance Measure No.: ILT 10-1 NRC Sim JPM5 (RO/SRO)

K/A Reference: 262001 K4.02 (RO/SRO 2.9/3.3)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is at rated power.
2. 4160 VAC Bus 1A Main Breaker needs to be removed from service.
3. All Prerequisites of 337, step 6.2.1, have been verified met.

Task Standard: 4160 VAC Bus 1A is powered from the S1A Startup Transformer and Main Breaker 1A has been manually tripped (**OR** breaker S1A has been re-opened).

Required Materials: None.

General References:

1. Procedure 337, 4160 Volt Electrical System, Revision 85.

Initiating Cue: As the US, I am directing you to transfer 4160 VAC Bus 1A to the Startup Transformer.

Time Critical Task: No.

Validation Time: 12 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: 6.2.2. Reviews Precautions and Limitations.

Standard: Reviews Precautions and Limitations.

CUE: If requested, any Prerequisites or Precautions and Limitations the applicant requests to verify that is outside of the Control Room can be acknowledged as being met.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 3

Procedure Step: 6.2.3.1

Adjust Bank 5 voltage regulator in accordance with Section 11.0.

Standard: Ensures Bank 5 voltage regulator is adjusted in accordance with Section 11.0.

CUE: Inform the applicant that the Bank 5 regulator is in service and is adjusted IAW Section 11.0. (NOTE: Section 11.0 is not provided to the applicants)

Comment: _____

SAT/UNSAT

Performance Step: 4

Procedure Step: 6.2.3.2

Confirm the Bank 5 transformer oil pump is operating by placing the control switch in HAND.

Standard: Confirms the Bank 5 transformer oil pump is operating by placing the control switch in HAND.

CUE: The Bank 5 transformer oil pump is in HAND and running.

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 5

Procedure Step: 6.2.3.3

Confirm the Bank 5 transformer cooling fans are operating by placing the control switch in HAND.

Standard: Confirms the Bank 5 transformer cooling fans are operating by placing the control switch in HAND.

CUE: The Bank 5 transformer cooling fans are in HAND and running.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 6

Procedure Step: 6.2.3.4

Verify MAIN BREAKER 1A control switch is in the CLOSE position. (Panel 8F/9F).

Standard: Verifies MAIN BREAKER 1A control switch is in the CLOSE position. (Panel 8F/9F).

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 7

Procedure Step: 6.2.3.5

VERIFY MAIN BREAKER 1A CLOSED light is illuminated. (Panel 8F/9F).

Standard: Verifies MAIN BREAKER 1A CLOSED light is illuminated. (Panel 8F/9F).

Comment: _____

SAT/UNSAT

Performance Step: 8

Procedure Step: 6.2.3.6

Verify STARTUP BREAKER S1A is racked in and open by observing the following at Panel 8F/9F:

- Green OPEN light illuminated
- BKR UP light illuminated

Standard: Verifies STARTUP BREAKER S1A is racked in and open by observing the following at Panel 8F/9F:

- Green OPEN light illuminated
- BKR UP light illuminated

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 9

Procedure Step: 6.2.3.7

Verify the 34.5KV breaker, feed to Bank 5 is closed by the red CLOSE light illuminated (Panel 12F-8).

Standard: Verifies the 34.5KV breaker, feed to Bank 5 is closed by the red CLOSE light illuminated (Panel 12F-8).

Comment: _____

SAT/UNSAT

Performance Step: 10

Procedure Step: 6.2.3.8

Insert the synchronizing key into the Synchroscope Switch for Startup Breaker S1A. (Panel 8F/9F)

Standard: Inserts the synchronizing key into the Synchroscope Switch for Startup Breaker S1A. (Panel 8F/9F)

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 11

Procedure Step: 6.2.3.9

Place Synchroscope Switch to the ON position. (Panel 8F/9F)

Standard: Places the Synchroscope Switch to the ON position. (Panel 8F/9F)

Comment: _____

SAT/UNSAT

Performance Step: 12

Procedure Step: 6.2.3.10

Verify power is synchronized across the S1A breaker by comparing the following:

- Voltage
- Frequency

Standard: Verifies power is synchronized across the S1A breaker by comparing the following:

- Voltage
- Frequency

Note: The Synchroscope needle should be stationary and pointing at 12 o'clock with both Synchroscope lights extinguished.

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 13

Procedure Step: 6.2.3.11

Places STARTUP BREAKER S1A control switch to the CLOSE position. (Panel 8F/9F)

Standard: Places STARTUP BREAKER S1A control switch to the CLOSE position. (Panel 8F/9F)

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 14

Procedure Step: 6.2.3.12

Verify STARTUP BREAKER S1A red CLOSED light illuminated. (Panel 8F/9F)

Standard: Verifies STARTUP BREAKER S1A red CLOSED light illuminated. (Panel 8F/9F)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

NOTE: In step 15 the applicant will recognize that Breaker 1A did not trip. This initiates the **Alternate Path**.

✓	Performance Step: 15
	Procedure Step: 6.2.3.13 Verify MAIN BREAKER 1A trips by the associated green OPEN light being illuminated. (Panel 8F/9F)
Standard:	Verifies MAIN BREAKER 1A trips by the associated green OPEN light being illuminated. (Panel 8F/9F). Recognized that MAIN BREAKER 1A did not trip and manually trips breaker with or without US direction **OR** the applicant may re-open breaker S1A.
NOTE:	Applicant observes that Breaker 1A is still CLOSED. Observes annunciator for S-3-f, S1A BRKR OFF NORMAL.
CUE:	Applicant may manually trip breaker 1A without guidance (automatic action that failed to occur). If an RO applicant requests guidance from the US, direct them to manually open breaker 1A. Do not give guidance to an SRO applicant if requested. **OR** If the applicant re-opens breaker S1A instead of opening breaker 1A, accept this as Satisfactory and inform the applicant another operator will continue with the procedure and the JPM is complete. The procedure does not give guidance for the applicant to continue if this action was taken.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 16

Procedure Step: 6.2.3.14

Place Synchroscope Switch for Startup Breaker S1A to the OFF position.

Standard: Places Synchroscope Switch for Startup Breaker S1A to the OFF position.

Comment: _____

SAT/UNSAT

Performance Step: 17

Procedure Step: 6.2.3.15

Remove the synchronizing key.

Standard: Removes the synchronizing key.

Note: Places synchronizing key in ED slot for storage.

Comment: _____

SAT/UNSAT

Performance Step: 18

Procedure Step: 6.2.3.16

Place MAIN BREAKER 1A control switch to the TRIP position.

1. Verify the mechanical indication and the light indication match.
2. Verify MN BRKR 1A TRIP alarm clears (Panel 8F/9F).

Performance Information

Standard: Places MAIN BREAKER 1A control switch to the TRIP position.

1. Verify the mechanical indication and the light indication match.
2. Verify MN BRKR 1A TRIP alarm clears (Panel 8F/9F).

Note: The applicant may take credit for this step by actions performed in Performance Step 15 (procedure step 6.2.3.13)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 19

Procedure Step: 6.2.3.17

Adjust 4160V bus voltage in accordance with Section 11.0.

Standard: Adjusts 4160V bus voltage in accordance with Section 11.0.

CUE: If the applicant attempts to adjust 4160 VAC Bus Voltage, as the US, inform the applicant that 4160 VAC Bus 1A Voltage does not require any adjustments at this time. (NOTE: Section 11.0 is not provided to the applicants)

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: The applicant has closed Startup Breaker S1A and manually tripped Main Breaker 1A (or has re-opened breaker SIA).

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM5

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to full power IC (IC-115) or similar
2. Insert BKR-EDS022A to 3-FAIL AUT TRIP
   - This will result in 4160 VAC Main Breaker 1A failing to automatically trip.
3. Have a copy of procedure 337, sections 6.2., marked up as directed by the Lead Examiner
4. Insert the Synchroscope key in into the Synchroscope Switch for Startup Breaker S1A.

STUDENT HANDOUT

Initial Conditions:

1. The plant is at rated power.
2. 4160 VAC Bus 1A Main Breaker needs to be removed from service.
3. All Prerequisites of 337, step 6.2.1, have been verified met.

Initiating Cue:

As the US, I am directing you to transfer 4160 VAC Bus 1A to the Startup Transformer.

Facility: Oyster Creek Task No.: 2150201401

Task Title: Perform an APRM Gain Adjustment

Job Performance Measure No.: ILT 10-1 NRC Sim JPM6 (RO/SRO)

K/A Reference: 215005 A4.03 (RO 3.2/SRO 3.3)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. Reactor Recirculation flow was just adjusted to attain 100% reactor power a short while ago.
2. Reactor power has been steady for the last 5 minutes.
3. Procedure 403 allows bypassing APRM 8.
4. The procedure revision, prerequisites and precautions and limitations have been verified by the Unit Supervisor.
5. APRM 8 is the ONLY APRM that requires an adjustment.

Task Standard: APRM 8 should indicate 100% $\pm$ 1% of Core Thermal Power (by meter on Panel 5R) and APRM 8 has been UNBYPASSED on Panel 4F.

Required Materials: None.

General References:

1. 202.1-9, APRM Gain Adjustment From Heat Balance (Hard Card), revision 120

Initiating Cue: Perform an APRM Gain Adjustment on APRM 8 IAW Attachment 202.1-9 starting at step 2.2.

Time Critical Task: No.

Validation Time: 5 minutes

Denote critical steps with a check mark ✓

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 2

Procedure Step: 1.0.

Reviews Procedure revision, Prerequisites, and Precautions and Limitations.

Standard: Acknowledges the Initial Conditions state that the procedure revision, prerequisites and precautions and limitations have been verified with the US.

CUE: This was given in the Initial Conditions and the student may initial the step in section 1.0 as completed.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 3

Procedure Step: 2.1

Allow reactor power to stabilize for at least 2 minutes.

Standard: The student verifies from the Initial Conditions that reactor power has been stabilized for at least 2 minutes.

CUE: The Initial Conditions state that reactor power has been stable for 5 minutes. The student may initial this step as complete.

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: 2.2

If allowed by 403, bypass APRM 8.

Standard: Verifies from the Initial Conditions that Bypassing APRM 8 is allowed by Procedure 403.

Bypasses APRM 8 on Panel 4F by placing the APRM BYPASS joystick in the CH 8 position.

CUE: If the applicant begins reviewing Procedure 403, inform them (as stated in the Initial Conditions) 403 has already been reviewed and Bypassing APRM 8 is allowed.

Comment: _____

_____

_____

SAT/UNSAT

✓	Performance Step: 5
	Procedure Step: 2.3 Pull out the APRM 8 drawer.
Standard:	Pulls out APRM Drawer 8 on Panel 5R to allow access to the R10 screw (Gain adjustment screw).
Comment:	
SAT/UNSAT	

✓	Performance Step: 6
	Procedure Step: 2.4 Turn the gain adjustment pot with a small screwdriver (R10 on calibration and feedback unit) clockwise to raise gain or counterclockwise to lower gain while monitoring APRM output on the APRM 8 drawer.
Standard:	Inserts small screwdriver and turns CCW or CW to change APRM power indication.
Comment:	
SAT/UNSAT	

✓ Performance Step: 7

Procedure Step: 2.5

When output on APRM 8 drawer matches required APRM setting within 1%, then stop gain adjustment and push in the APRM 8 drawer.

Standard: When output on APRM 8 drawer matches required APRM setting within 1%, then stops gain adjustment. With reactor power at 100%, APRM 8 should indicate 100% $\pm$ 1% of Core Thermal Power by meter indication on Panel 5R.

Pushes in APRM drawer 8.

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 8

Procedure Step: 2.6

Un-bypasses APRM 8.

Standard: Places the APRM 8 BYPASS joystick to the center position.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 9

Procedure Step: 2.7

If another APRM channel in the same drawer requires adjustment, then perform the APRM adjustment IAW steps 2.2 through 2.6.

Standard: Determines that no other APRM adjustments are required from the Initial Conditions.

CUE: Student will inform evaluator that APRM 8 Gain has been adjusted.

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: APRM 8 should indicate 100% ± 1% of Core Thermal Power (by meter on Panel 5R) and APRM 8 has been UNBYPASSED on Panel 4F.

JPM Stop Time:_____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM6

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset the simulator to IC-115 or other rated power IC.
2. Change APRM 8 gain so that the APRM reads > 104%.
3. Have a blank copy of Attachment 202.1-9 rev 120, APRM Gain Adjustment From Heat Balance (Hard Card).
4. Ensure Heat Balance is displayed on PPC between Panel 3R and 4R.
5. Ensure APRMs 1 through 7 indicate 100%.
6. Ensure all APRM drawers are fully pushed in.
7. Have a copy of procedure 403 for the students to Bypass APRM 8.
8. Have a copy of Attachment 403-2 which shows APRM bypass is allowed.

STUDENT HANDOUT

Initial Conditions:

1. Reactor Recirculation flow was just adjusted to attain 100% reactor power a short while ago.
2. Reactor power has been steady for the last 5 minutes.
3. Procedure 403 allows bypassing APRM 8.
4. The procedure revision, prerequisites and precautions and limitations have been verified by the Unit Supervisor.
5. APRM 8 is the ONLY APRM that requires an adjustment.

Initiating Cue:

Perform an APRM Gain Adjustment on APRM 8 IAW Attachment 202.1-9 starting at step 2.2.

ATTACHMENT 202.1-9

APRM GAIN ADJUSTMENT FROM HEAT BALANCE (HARD CARD)

202.1, Section 4.13.2.1

1.0 **VERIFY** with the Unit Supervisor that the following support use of the Hard Card:

- Procedure revision [*TB*]
- Prerequisites [*TB*]
- Precautions and Limitations [*TB*]

2.0 APRM GAIN ADJUSTMENT

2.1 **ALLOW** reactor to stabilize for at least 2 minutes. [*TB*]

2.2 IF allowed by Procedure 403,

THEN **BYPASS** the APRM channel. [ ]

2.3 **PULL** out selected APRM drawer. [ ]

2.4 **TURN** the gain adjustment pot with a small screwdriver (R10 on calibration and feedback unit) clockwise to raise gain or counterclockwise to lower gain while monitoring APRM output on the selected drawer. [ ]

2.5 WHEN output on the selected drawer matches required APRM setting within 1%,

THEN **STOP** gain adjustment [ ]

AND **PUSH** in selected drawer when all APRM adjustments are complete. [ ]

2.6 IF the APRM channel was bypassed,

THEN **UNBYPASS** the APRM channel. [ ]

2.7 IF another APRM channel in the same drawer requires adjustment,

THEN **PERFORM** the APRM channel adjustment IAW steps 2.2 through 2.6 above. [ ]

3.0 **REFER** to Procedure 202.1 if problems are encountered. [ ]

Facility: Oyster Creek Task No.: 2860401403

Task Title: Inject Fire Water Via The Core Spray System During An ATWS

Job Performance Measure No.: ILT 10-1 NRC Sim JPM 7 (RO/SRO)

K/A Reference: 286000 A4.06 (RO 3.4/3.4)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The crew is responding to an ATWS and LOCA.
2. The RPV has been Emergency Depressurized.
3. RPV water level is -15" and lowering.
4. Injecting water with Low Pressure Systems has been directed by the Emergency Operating Procedures.
5. The Fire Protection System is available.

Task Standard: Firewater is being injected into the RPV via the Core Spray System.

Required Materials: None.

General References:

1. Procedure EMG-SP20, Low Pressure Injection During An ATWS, rev. 0

Initiating Cue: As the US, I am directing you to lineup and inject firewater via Core Spray System 1 IAW SP-20, Low Pressure Injection During An ATWS.

Time Critical Task: No.

Validation Time: 12 minutes

Performance Information

Denote critical steps with a check mark ✓

Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 2

Procedure Step: 1.0

Injecting water with Low Pressure Systems has been directed by the Emergency Operating Procedures.

Standard: The student verifies from the Initial Conditions that injecting water with Low Pressure Systems has been directed by the Emergency Operating Procedures and initials this step as complete.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: 2.1

IF Core Spray activating signals are present,

THEN OVERRIDE Core Spray initiation logic by performing the following: (Panel 1F/2F)

1. PRESS the OVERRIDE switches for all the sensors that are lit.

2. PRESS all ACTUATED switches, whether lit or unlit.

Standard: Overrides Core Spray initiation logic by performing the following: (Panel 1F/2F)

1. Presses the OVERRIDE switches for all the sensors that are lit.

2. Presses all ACTUATED switches, whether lit or unlit.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 4

Procedure Step: 2.2

IF Firewater is available,

THEN **DISPATCH** an operator to the Firewater valves for the selected Core Spray System.

Standard: The student verifies from the Initial Conditions the fire protection system is available. The student dispatches an EO to Core Spray System 1 Firewater valves.

CUE: Report an EO has been dispatched and is standing by at the Core Spray System 1 Firewater valves.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 5

Procedure Step: 2.3

IF using Condensate Transfer for injection,

THEN **DISPATCH** an operator to the Reactor Building with an MB-1 key.

Standard: Student initials or N/As this step since Condensate Transfer is not being used for injection.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 6

Procedure Step: 3.1

DETERMINE which RPV injection source is to be used as directed by the Unit Supervisor.

Standard: Student verifies from Initiating Cue that the Unit Supervisor directed injecting with Firewater via Core Spray System 1 and initials off this step.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 7

Procedure Step: 3.2.1

VERIFY Condensate Transfer is **not** being injected via Core Spray System 1.

Standard: Student verifies from Initiating Cue that the Unit Supervisor directed injecting with Firewater via Core Spray System 1 and initials off this step.

CUE: If the student asks, inform them Condensate Transfer is not being injected via Core Spray System 1.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 8

Procedure Step: 3.2.2

CONFIRM stopped Core Spray Booster Pump A and C.

Standard: The student confirms Core Spray Booster Pump A and C are stopped.

Comment: _____

SAT/UNSAT

Performance Step: 9

Procedure Step: 3.2.3

CONFIRM stopped Core Spray Main Pump A and C.

Standard: The student confirms Core Spray Main Pump A and C are stopped.

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 10

Procedure Step: 3.2.4

PLACE Core Spray System 1 Main Pump control switches in PULL-TO-LOCK position.

Standard: Places the control switches for Core Spray Main Pump A and C in PULL-TO-LOCK.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 11

Procedure Step: 3.2.5

CLOSE Tell-Tale Drain Valve, V-20-91. (RB 23 North or North Side RB outside)

Standard: Calls the Reactor Building EO and directs them to close Tell-Tale Drain Valve, V-20-91.

CUE: When requested as the RB EO, tell the student that Tell-Tale Drain Valve, V-20-91 is closed. (This valve is NOT modeled in the simulator).

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 12

Procedure Step: 3.2.6

CONFIRM running all available Diesel Fire Pumps by placing their control switches in MAN position. (Panel 13R)

Standard: Places the control switches for Fire Diesel Pump 1 and 2 in MAN on Panel 13R.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 13

Procedure Step: 3.2.7

CONFIRM open Core Spray System 1 Discharge Valve, V-20-12. (Panel 1F/2F)

Standard: Confirms open Core Spray System 1 Discharge Valve, V-20-12. (Panel 1F/2F)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 14

Procedure Step: 3.2.8

CONFIRM closed Core Spray System 1 Test Flow Return Valve, V-20-27. (Panel 1F/2F)

Standard: Confirms closed Core Spray System 1 Test Flow Return Valve, V-20-27. (Panel 1F/2F)

Comment: _____

SAT/UNSAT

✓ Performance Step: 15

Procedure Step: 3.2.9

CLOSE the following Core Spray System 1 Pump Suction Valves: (Panel 1F/2F)

- V-20-32
- V-20-3

Standard: Places the control switch for V-20-32 and V-20-3 to the CLOSE position (one switch operates both valves)

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 16

Procedure Step: 3.2.10

CONFIRM open either of the following Core Spray System 1 Parallel Isolation Valves:

- V-20-15
- V-20-40

Standard: Confirms either V-20-15 or V-20-40 are OPEN.

Comment: _____

SAT/UNSAT

✓ Performance Step: 17

Procedure Step: 3.2.11

Slowly **THROTTLE** open Fire Water Supply Valve, V-20-83 to maintain RPV Level. (RB 23 North or North Side RB outside)

Standard: Directs the RB EO to slowly THROTTLE open Fire Water Supply Valve, V-20-83 to maintain RPV Level. (RB 23 North or North Side RB outside)

CUE: As the RB EO, inform the student V-20-83 has been throttled open, Firewater is injecting into the RPV via Core Spray System 1, and another operator will continue with the Support Procedure.

Comment: _____

SAT/UNSAT

Terminating Cue: Fire Water Supply Valve, V-20-83, has been throttled open and Firewater is injecting into the RPV via Core Spray System 1.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM 7

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to IC-151 (password protected for ILT 10-1 NRC Exam).
    a. This IC places the plant in a Hydraulic ATWS where ED has been completed.
2. Verify RPV pressure and level are stabilized before administration of the JPM.

STUDENT HANDOUT

Initial Conditions:

1. The crew is responding to an ATWS and LOCA.
2. The RPV has been Emergency Depressurized.
3. RPV water level is -15" and lowering.
4. Injecting water with Low Pressure Systems has been directed by the Emergency Operating Procedures.
5. The Fire Protection System is available.

Task Cue:

As the US, I am directing you to lineup and inject firewater via Core Spray System 1 IAW SP-20, Low Pressure Injection During An ATWS.

Facility: Oyster Creek Task No.: 2880101404

Task Title: Startup of the Turbine Building Ventilation System (Alternate Path)

Job Performance Measure No.: ILT 10-1 NRC Sim JPM 8 (RO/SRO)

K/A Reference: 288000 A4.01 (3.1/2.9)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X Plant _____

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant is shutdown
2. The Turbine Building Ventilation System has been secured
3. All prerequisites to start the Turbine Building Ventilation System have been verified

Task Standard: The Turbine Ventilation System has been started utilizing Exhaust Fan 1-6

Required Materials: None.

General References:

1. Procedure 328, Turbine Building Heating And Ventilation System, Revision 54

Initiating Cue: Start the Turbine Building Ventilation System IAW Procedure 328, Turbine Building Heating And Ventilation System, starting at Step 5.1.2

Time Critical Task: No.

Validation Time: 11 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: Reviews Precautions and Limitations.

Standard: Reviews Precautions and Limitations.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Note: Exhaust Fan 1-7 will not start and initiates the Alternate Path. Exhaust Fan 1-7 will not be re-started on the second attempt.

Performance Step: 3

Procedure Step: 5.1.2

Start EF-1-7 by placing EF-1-7 control switch to START.

Reports the fan does not start.

Standard: Starts EF-1-7 by placing EF-1-7 control switch to START.

Reports the fan will not start. (red light OFF; green light ON)

May contact EO to inspect the Fan.

Cue: As the SRO, acknowledge the fan will not start. As the EO, report that you see no obvious abnormalities with the fan.

Comment: _____

_____

_____

SAT/UNSAT

Note: The step below may occur any time during the JPM.

Performance Step: 4

Procedure Step: 5.1.2.1.1 Caution

Notify Radiation Protection anytime operating EF-1-6.

Standard: Notifies Radiation Protection anytime operating EF-1-6.

Cue: RP has been notified

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 5

Procedure Step: 5.1.2.1.1

Confirm closed Dampers DM-28-8, DM-28-3 and their associated limit switches are made up

Standard: Directs the EO to confirm closed Dampers DM-28-8, DM-28-3 and their associated limit switches are made up

Cue: Dampers DM-28-8, DM-28-3 are closed and their associated limit switches are made up

Comment: _____

SAT/UNSAT

Performance Step: 6

Procedure Step: 5.1.2.1.2

Confirm open DM-28-4 and associated limit switches are made up.

Standard: Directs the EO to confirm open DM-28-4 and associated limit switches are made up.

Cue: Damper DM-28-4 is open and associated limit switches are made up.

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 7

Procedure Step: 5.1.2.1.3

Start EF-1-7 by placing EF-1-7 control switch to START

Standard: Starts EF-1-7 by placing EF-1-7 control switch to START and recognizes the fan will not start (red light OFF; green light ON)

Comment: _____

SAT/UNSAT

Performance Step: 8

Procedure Step: 5.1.2.1.4a

If EF-1-7 fails to start on the second attempt, then place EF-1-6 in service as follows:

Open V-28-71 to drain any standing water from EF-1-6

Standard: Directs EO to Open V-28-71 to drain any standing water from EF-1-6

Cue: V-28-71 is open and a little water has drained out.

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 9

Procedure Step: 5.1.2.1.4b

When water has stopped draining, then close V-28-71

Standard: Directs EO to close V-28-71 when water has stopped draining

Cue: Water has stopped draining and V-28-71 is closed

Comment:

SAT/UNSAT

Performance Step: 10

Procedure Step: 5.1.2.1.4c

Confirm closed DM-28-8

Standard: Directs EO to confirm closed DM-28-8

Cue: DM-28-8 is closed

Comment:

SAT/UNSAT

Performance Information

✓	Performance Step: 11
	Procedure Step: 5.1.2.1.4d Close DM-28-4.
Standard:	Directs EO to close DM-28-4
Cue:	DM-28-4 is closed
Comment:	
SAT/UNSAT	

✓	Performance Step: 12
	Procedure Step: 5.1.2.1.4e Open DM-28-3
Standard:	Directs the EO to open DM-28-3
Cue:	DM-28-3 is open
Comment:	
SAT/UNSAT	

Performance Information

✓ Performance Step: 13

Procedure Step: 5.1.2.1.4f

Start Exhaust Fan EF-1-6 by placing EF-1-6 control switch to ON

Standard: Starts Exhaust Fan EF-1-6 by placing EF-1-6 control switch to START (red light ON; green light OFF)

Comment: _____

SAT/UNSAT

✓ Performance Step: 14

Procedure Step: 5.1.3

Start Supply Fan SF-1-1 or SF-1-2 by placing Control Switch to ON

Standard: Starts Supply Fan SF-1-1 or SF-1-2 by placing Control Switch to ON (red light ON; green light OFF)

Comment: _____

SAT/UNSAT

Performance Information

✓ Performance Step: 15

Procedure Step: 5.1.4

Start Supply Fan SF-1-3 or SF-1-4 by placing Control Switch to ON.

Standard: Starts Supply Fan SF-1-3 or SF-1-4 by placing Control Switch to ON. (red light ON; green light OFF)

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 16

Procedure Step: 5.1.5

Start EF-1-33 by placing EF-1-33 control switch to ON.

Standard: Starts EF-1-33 by placing EF-1-33 control switch to ON. (red light ON; green light OFF)

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 17

Procedure Step: 5.1.6

Start SF-1-5 or SF-1-6 by placing the control switch to ON.

Standard: Starts SF-1-5 or SF-1-6 by placing the control switch to ON. (red light ON; green light OFF)

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 18

Procedure Step: 5.1.7

Verify that EF-1-4 has started by observing the red indicating light Lit

Standard: Verifies that EF-1-4 has started by observing the red indicating light Lit

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓	Performance Step: 19
	Procedure Step: 5.1.8
	Starts Feedwater Pump Room Supply Fan, SF-1-7, and Exhaust Fan, EF-1-1, by placing SF-1-7 and EF-1-1 control switch to ON
Standard:	Start Feedwater Pump Room Supply Fan, SF-1-7, and Exhaust Fan, EF-1-1, by placing SF-1-7 and EF-1-1 control switch to ON (red lights ON; green lights OFF)
Cue:	Another Operator will continue with the procedure
Comment:	_____
	_____
SAT/UNSAT	_____

Terminating Cue: The Turbine Ventilation System has been started utilizing Exhaust Fan 1-6

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Sim JPM 8

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. IC-115. (but can be any IC)
2. Shutdown the TB Vent System IAW procedure 328, section 5.4
3. Insert the following:
    a. LOA-TBS030 to OPEN
    b. SWI-TBS017A to ON
    c. These two malfunctions open the breaker to Exhaust Fan 1-7 but keeps the green light on
4. Insert ANN-L-2E to OFF
    a. This keeps EF 7 TRIP annunciator off
5. Insert LOA-TBS011 to CLOSE (this closes DM-28-4)
6. Insert LOA-TBS012 to OPEN (this opens DM-28-3)
7. Insert LOA-TBS013 to OFF (stops SF 1-22)
8. Ensure the TURB BLDG VENT ISOLATION pushbutton on Panel 11R is depressed/reset before beginning JPM
9. Have a copy of 328, completed up to step 5.1.1 (for only section 5)

STUDENT HANDOUT

Initial Conditions:

1. The plant is shutdown
2. The Turbine Building Ventilation System has been secured
3. All prerequisites to start the Turbine Building Ventilation System have been verified

Task Cue:

Start the Turbine Building Ventilation System IAW Procedure 328, Turbine Building Heating and Ventilation System, starting at Step 5.1.2

Facility: Oyster Creek Task No.: 2000501441

Task Title: Vent the Scram Air Header

Job Performance Measure No.: ILT 10-1 NRC Plant JPM 1 (RO/SRO)

K/A Reference: 295037 EA1.05 (RO 3.9/SRO 4.0)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant was at rated power when an electric ATWS occurred

Task Standard: The scram air header has been vented and then restored to normal

Required Materials: None.

General References:

1. EMG-SP21, Alternate Insertion of Control Rods, revision 0

Initiating Cue: Vent the scram air header IAW EMG-SP21, section 4.3

Time Critical Task: No.

Validation Time: 2 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 2

Procedure Step: 4.3.1

Close Scram Air Header isolation valve V-6-175 (RB 23 SE)

Standard: Closes Scram Air Header isolation valve V-6-175 (RB 23 SE) by rotating the valve operator CW until motion stops

Cue: Scram Air Header isolation valve V-6-175 is closed

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 3

Procedure Step: 4.3.2

Open Scram Air Header drain valve V-6-409 (RB 23 SE)

Standard: Opens Scram Air Header drain valve V-6-409 (RB 23 SE) by rotating the valve operator CCW until motion stops

Cue:
- Scram Air Header drain valve V-6-409 is open and air is heard rushing out the vent
- The Control Room notifies you that all control rods indicate full-in

Comment: _____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: 4.3.3.1

When control rods are no longer moving in, then perform the following:

1. Close Scram Air Header drain valve V-6-409 (RB 23 SE)

Standard: Closes Scram Air Header drain valve V-6-409 (RB 23 SE) by rotating the valve operator CW until motion stops

Cue: Scram Air Header drain valve V-6-409 is closed

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 5
	Procedure Step: 4.3.3.2
	When control rods are no longer moving in, then perform the following:
	2. Open Scram Air Header isolation valve V-6-175 (RB 23 SE)
Standard:	Opens Scram Air Header isolation valve V-6-175 (RB 23 SE) by rotating the valve operator CCW until motion stops
Cue:	Scram Air Header isolation valve V-6-175 is open
Comment:	
SAT/UNSAT	

Terminating Cue: The scram air header has been vented and then restored to normal

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Plant JPM 1

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of EMG-SP21 for the applicant.

STUDENT HANDOUT

Initial Conditions:

1. The plant was at rated power when an electric ATWS occurred

Task Cue:

Vent the scram air header IAW EMG-SP21, section 4.3

There will be no manipulations of plant components.

All mainuplations are to be simulated.

Facility: Oyster Creek Task No.: 2070501401

Task Title: Adding Makeup to the Isolation Condensers with the Fire Protection System

Job Performance Measure No.: ILT 10-1 NRC Plant JPM 2 (RO/SRO)

K/A Reference: 207000 K1.06 (3.3/3.7)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance X Actual Performance _____

Classroom _____ Simulator _____ Plant X

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant scrammed due to an inadvertent MSIV isolation.
2. Both the Demineralized Water System and Condensate Transfer System are unavailable.
3. Isolation Condenser shell water levels indicate 7.2'.
4. The Isolation Condenser System is currently in Standby

Task Standard: Isolation Condenser A shell water level is rising due to makeup from the Fire Protection System.

Required Materials: Keys to unlock plant valves.

General References:

1. 307, Isolation Condenser System, revision 112

Initiating Cue: Raise Isolation Condenser A shell water level using the Fire Protection System, IAW 307, Isolation Condenser System, starting at step 7.3.3.2.

Time Critical Task: No.

Validation Time: 5 Minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

Note: The valves in the next steps may be inside a contaminated area. Dress-out and contaminated area entry is not required.

✓ Performance Step: 2

Procedure Step: 7.3.3.2
Close V-11-41, Isolation Condensers Supply Isolation Valve. (Reactor Building 23' East)

Standard: Close V-11-41, Isolation Condensers Supply Isolation Valve by rotating the valve handwheel CW.

Cue: V-11-41 is closed.

Comment: _____

SAT/UNSAT

Performance Information

✓	Performance Step: 3
	Procedure Step: 7.3.3.3 Close V-11-63, Makeup to Isolation Condenser Telltale Drain Valve. (Reactor Building 23' East)
Standard:	Closes V-11-63, Makeup to Isolation Condenser Telltale Drain Valve by rotating the valve handwheel CW.
Cue:	V-11-63 is closed.
Comment:	
SAT/UNSAT	

✓	Performance Step: 4
	Procedure Step: 7.3.3.4 Unlock and open V-9-2099, Fire Protection to Isolation Condenser Cross-Tie Isolation Valve. (Reactor Building 23' East)
Standard:	Unlocks and opens V-9-2099, Fire Protection to Isolation Condenser Cross-Tie Isolation Valve, by rotating the valve handwheel CCW.
Cue:	V-9-2099 is open.
Comment:	
SAT/UNSAT	

Performance Information

✓	Performance Step: 5
	Procedure Step: 7.3.3.5 Open V-11-49, Fire Protection to Isolation Condenser Makeup Valve. (Reactor Building 23' East)
Standard:	Opens V-11-49, Fire Protection to Isolation Condenser Makeup Valve, by rotating the valve handwheel CCW.
Cue:	V-11-49 is open. The Control Room reports that initial shell level is 7.2' per step 7.3.3.6, they have opened V-11-36 per step 7.3.3.7, and Isolation Condenser 'A' shell level is rising. The JPM is complete.
Comment:	_____
	_____
SAT/UNSAT	_____

Terminating Cue: Isolation Condenser 'A' shell water level is rising due to makeup from the Fire Protection System.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Plant JPM 2

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

JPM Setup

1. Have a copy of Section 7.3.3 marked up to/including Step 7.3.3.1.

STUDENT HANDOUT

Initial Conditions:

1. The plant scrammed due to an inadvertent MSIV isolation.
2. Both the Demineralized Water System and Condensate Transfer System are unavailable.
3. Isolation Condenser shell water levels indicate 7.2'.
4. The Isolation Condenser System is currently in Standby.

Task Cue:

Raise Isolation Condenser A shell water level using the Fire Protection System, IAW 307, Isolation Condenser System, starting at step 7.3.3.2.

There will be no manipulations of plant components.

All mainuplations are to be simulated.

Facility: Oyster Creek Task No.: 3080401413

Task Title: Operate Service Water Pump 1-2 from Local Shutdown Panel LSP-1B3

Job Performance Measure No.: ILT 10-1 NRC Plant JPM 3 (RO/SRO)

K/A Reference: 295016 AA1.07 (RO 4.2/SRO 4.3)

Examinee: _____ Examiner: _____

Facility Evaluator: _____ Date: _____

Method of Testing:

Simulated Performance _____ Actual Performance X

Classroom _____ Simulator X* Plant _____

*Simulated In-Plant and Performed on Simulator replica of LSP-1B3

Read to the Examinee:

I will explain the initial conditions, which steps to simulate or discuss, and provide initiating cues. When you complete the task successfully, the objective for this job performance measure will be satisfied.

Initial Conditions:

1. The plant was at rated power when an event occurred resulting in a Control Room evacuation.
2. The Remote Shutdown Panel has been activated.
3. 4160 VAC Bus D is energized from EDG-2.
4. 125 VDC is available to USS 1B3.
5. Breaker 1B3P is closed.
6. All Service Water flow has been lost.
7. You have a set of Building Keys and a radio.

Task Standard: LSP-1B3 has been activated and Service Water Pump 1-2 as been started.

Required Materials: None.

General References:

1. Procedure 346, Operation of the Remote and Local Shutdown Panels, Revision 17

Initiating Cue: Start Service Water Pump 1-2 IAW Procedure 346, Operation of the Remote and Local Shutdown Panels, Section 9.0.

Time Critical Task: No.

Validation Time: 7 minutes

Performance Information

Denote critical steps with a check mark ✓

_____ Performance Step: 1

Procedure Step: Provides repeat back of initiating cue.

JPM Start Time: _____

Standard: Provides repeat back of initiating cue. *Evaluator acknowledges the repeat back.*

Comment: _____

SAT/UNSAT

_____ Performance Step: 2

Procedure Step: 9.1 and 9.2

Verifies Prerequisites and Precautions and Limitations

Standard: Verifies Prerequisites and Precautions and Limitations

Note: Prerequisites are met from the Initial Conditions. Applicant may review Section 4.0, Precautions and Limitations.

Comment: _____

SAT/UNSAT

Performance Information

Performance Step: 3

Procedure Step: 9.3.1

Establish communication between the LSP and the Remote Shutdown Panel.

Standard: Establish communication between the LSP and the Remote Shutdown Panel.

Cue: Communications have been established.

Comment: _____

_____

_____

SAT/UNSAT

✓ Performance Step: 4

Procedure Step: 9.3.2

Place Bypass Switch on Service Water Pump 1-2 breaker at USS 1B3 in BYPASS.

Standard: Places Bypass Switch on Service Water Pump 1-2 breaker at USS 1B3 in BYPASS.

CUE: Inform the applicant that the Bypass Switch for Service Water Pump 1-2 breaker at USS 1B3 is in BYPASS. (There is a photograph of this breaker near LSP-1B3 in the simulator).

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 5

Procedure Step: 9.3.3

Rotate Keylock Control Transfer Switch to ALTERNATE.

Standard: Rotates Keylock Control Transfer Switch to ALTERNATE.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 6

Procedure Step: 9.3.4

Verify LSP-1B3 status lights are lit within 5 seconds.

Standard: Verifies LSP-1B3 status lights are lit within 5 seconds.

Note: The red CLOSED indication will be lit for BKR 1B3M and the green OFF light will be lit for Service Water Pump 1-2.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

Performance Step: 7

Procedure Step: 9.3.5

Confirm closed Main Breaker 1B3M at LSP-1B3.

Standard: Confirms closed Main Breaker 1B3M at LSP-1B3.

Note: Verifies the red CLOSED indication is lit for BKR 1B3M.

Comment: _____

_____

_____

SAT/UNSAT

Performance Step: 8

Procedure Step: 9.3.6

Confirm closed Feeder Breaker to MCC 1B32 at USS 1B3.

Standard: Confirms closed Feeder Breaker to MCC 1B32 at USS 1B3.

CUE: If requested by an EO to verify the breaker position, report that feeder breaker MCC 1B32 is CLOSED on USS 1B3.

Comment: _____

_____

_____

SAT/UNSAT

Performance Information

✓ Performance Step: 9

Procedure Step: 9.3.7

Start Service Water Pump 1-2 by placing its switch in the START position.

Standard: Starts Service Water Pump 1-2 by placing its switch in the START position. Observes the red START light illuminate and the green STOP light extinguish. Reports to the Remote Shutdown Panel that Service Water Pump 1-2 is running.

Comment: _____

_____

_____

SAT/UNSAT

Terminating Cue: LSP-1B3 has been activated and Service Water Pump 1-2 has been started.

JPM Stop Time: _____

Validation of Completion

JPM Number: ILT 10-1 NRC Plant JPM 3

Examinee's Name: _____

Examiner's Name: _____

Date Performed: _____

Facility Evaluator: _____

Number of Attempts: _____

Time to Complete: _____

Question:

_____

_____

_____

Response:

_____

_____

_____

Result: Satisfactory/Unsatisfactory

Examiner's Signature and Date: _____ _____

Simulator Setup

1. Reset to a shutdown IC (or IC-115 and manually scram the reactor).
2. Ensure Service Water Pump 1-2 is NOT running.
3. Silence Horns.
4. Have a copy of procedure 346 sections 4.0 and 9.0 for the applicant.

STUDENT HANDOUT

Initial Conditions:

1. The plant was at rated power when an event occurred resulting in a Control Room evacuation.
2. The Remote Shutdown Panel has been activated.
3. 4160 VAC Bus D is energized from EDG-2.
4. 125 VDC is available to USS 1B3.
5. Breaker 1B3P is closed.
6. All Service Water flow has been lost.
7. You have a set of Building Keys and a radio.

Initiating Cue:

Start Service Water Pump 1-2 IAW Procedure 346, Operation of the Remote and Local Shutdown Panels, Section 9.0.

Scenario Outline

Facility: Oyster Creek **Scenario No.:** 2 **Op Test No.:** 10-1 NRC

Examiners: _____ **Operators:** _____

_____ _____

_____ _____

Initial Conditions:
- 97% power
- Main Generator voltage control is in Manual

Turnover:
- Place the amplidyne in automatic service IAW 336.1, section 8
- Raise reactor power to 100% with recirculation flow

Event No.	Malf. No.	Event Type*		Event Description
1	NA	N	BOP	Return the Amplidyne to service IAW 336.1.
2	NA	R	ATC	Raise reactor power to 100% with recirculation flow (REMA).
3	ICH-NSS026A	TS	SRO	Respond to RPV High Pressure Instrument RE15 to Isolation Condenser Initiation Logic Failing High.
4	MAL-NIS021B	I TS	ATC SRO	Respond to APRM 2 failing INOP.
5	MAL-MSS005A	C	BOP	Respond to trip of Steam Packing Exhauster 1.
6	MAL-NSS025E	C TS	ATC BOP SRO	Respond to the E EMRV lifting leading the crew to a manual scram.
7	CAEP ATWS	M	Crew	Respond to an Electric ATWS.
8	PMP-SLC001A PMP-SLC002A	C	Crew	Respond to a Standby Liquid Control Pump shaft break.

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

Simulator Summary

Event	Event Summary
1	The BOP will return the amplidyne to automatic service IAW 336.1. The BOP will place the control switch in TEST, zero the amplidyne voltmeter, then place the control switch to ON. (**BOP: Normal Evolution**)
2	The ATC will raise reactor power to rated power (100%) with recirculation flow using the Master Recirc Speed Controller. (**ATC: Reactivity Manipulation**)
3	RPV high pressure instrument RE15A to Isolation Condenser Initiation Logic fails high. No Isolation Condenser initiation will occur from this failure. The SRO will review and apply Tech Spec Table 3.1.1 part C.1. (**SRO: Tech Specs**)
4	The ATC will respond to an APRM HI-HI/INOP alarm and report that APRM 2 has failed INOP with a ½ scram on RPS 1. The ATC will bypass APRM 2 IAW procedure 403 and reset the ½ scram. The SRO will review and apply Tech Spec Table 3.1.1. (**ATC: Instrument Malfunction; SRO: Tech Specs**)
5	The BOP will respond to the failure of the in-service steam packing exhauster. The BOP will start the standby Exhauster and throttle open its discharge valve to maintain the correct vacuum. (**BOP: Component Malfunction**)
6	The ATC and BOP will respond to the E EMRV lifting IAW ABN-40, Stuck Open EMRV. The ATC will take manual control of the master feedwater controller. The BOP will cycle the E EMRV then disable it. The ATC will return the master feedwater controller to automatic operation and insert a manual reactor scram. The SRO will review Tech Specs 3.4 for ADS operability and TS 3.5.A for Torus Temperature limits. (**ATC: Component Malfunction; BOP: Component Malfunction; SRO: Tech Specs**)
7	The Crew will diagnose an electric ATWS and the SRO will direct entry into RPV Control – with ATWS EOP. The ATC will perform actions to insert control rods and the BOP will perform actions to control Torus water temperature and RPV water level. (**Major Evolution**) (**PRA**)

8	Due to the Torus water temperature heating up from the E EMRV stuck open, Standby Liquid Control (SLC) injection will be directed. The first SLC pump started will have a broken shaft and the Applicant will start the second SLC pump. (**Component Failure After EOP**)
Critical Task 1	With reactor power > 2% during an ATWS, terminate and prevent injection into the RPV to intentionally lower RPV water level which will lower reactor power.
Critical Task 2	Crew directs the Reactor Building EO to vent the scram air header. (The Lead Examiner will direct the Booth to vent the scram air header at their discretion).

	ES-301-4 Target Quantitative Attributes	**Actual Attributes**	**Event Number(s)**
1.	Total malfunctions (**5-8**)	**6**	**3, 4, 5, 6, 7, 8**
2.	Malfunctions after EOP entry (**1-2**)	**1**	**8**
3.	Abnormal events (**2-4**)	**2**	**4, 6**
4.	Major transients (**1-2**)	**1**	**7**
5.	EOPs entered/requiring substantive actions (**1-2**)	**2**	**7**
6.	EOP contingencies requiring substantive actions (**0-2**)	**1**	**7**
7.	Critical tasks (**2-3**)	**2**	**7**

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 1
Event Description: Return the Amplidyne to service IAW 336.1.		
Initiation: Following shift turnover		
Cues: As directed by the SRO following shift turnover		
Time	Position	Applicant's Actions or Behavior
	SRO	• Directs the BOP to shift from manual to automatic voltage regulation IAW 336.1, section 8
	BOP	• Shifts from manual to automatic voltage regulation IAW 336.1, section 8 o Simultaneously places the AMPLIDYNE CONTROL 43CS switch in TEST and observes 4160 VAC Bus 1A ammeter for deflection o Confirms amplidyne motor start as indicated by ammeter deflection on Bus 1A o Directs EO to verify the amplidyne motor is running [**ROLE PLAY**]
ROLE PLAY: As the EO at the amplidyne, report a good start on the amplidyne motor.		
		o Zero the amplidyne voltmeter o Press and hold the AMPLIDYNE VOLTS PUSH FOR LOW RANGE pushbutton o Observe the AMPLIDYNE voltmeter for a zero or center-scale reading o If the needle is deflected, then adjust using the AMPLIDUNE ADJUST rheostat to reach center-scale o Release the AMPLIDYNE VOLTS PUSH FOR LOW RANGE pushbutton o Verify the AMPLIDYNE voltmeter reads zero or center-scale o Repeat if required to obtain zero or center-scale o Place the AMPLIDYNE CONTROL 43CS switch in ON

		o Removes VOLTAGE CONTROL IN MANUAL operator aids o May verify Terminal Voltage or Excitation are within the requirements of 336.1, section 5.0, on the PJM website. [**FLOOR ROLE PLAY**]
FLOOR ROLE PLAY: If the applicant requests (or attempts to verify on the PJM website) that Terminal Voltage or MG Excitation (VARS) are within the limits of section 5.0, inform them that the requirements of section 5.0 are satisfactory.		
		o Verifies generator terminal voltage 23.3 to 24.7 KV o maintains a slight BUCK reading by adjusting EXCITER FIELD RHEOSTAT CONTROL 70M switch as needed, which ensures the Main Field will pick up control should the AMPLIDYNE trip o Reports the amplidyne is in automatic voltage control o May notify the Power team when in auto
Terminus:	The amplidyne is in automatic voltage control	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 2
Event Description: Raise reactor power to rated IAW the ReMA		
Initiation: After the amplidyne is placed in automatic voltage control, or as directed by the Lead Examiner		
Cues: As directed by the SRO		
Time	Position	Applicant's Actions or Behavior
	SRO	• Approves the ReMA and provides to the ATC • Directs the ATC to raise power to rated IAW the ReMA • Acts as the reactivity Manager • Provides a reactivity brief • May notify the Power team when at rated power
ROLE PLAY: If Reactor Engineering is contacted inferring about the rate of power ascension, inform them there is no limit on the rate of power ascension.		
	ATC	• Raises power IAW the ReMA o May review 202.1, section 5.0, Raising Power o Rotates the MASTER RECIRC SPEED CONTROLLER manual knob CW o Monitors power, level, pressure o Reports to SRO when rated power is reached
	BOP	• Provides second check for the reactivity manipulation
Terminus:	Reactor power is at rated	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 3
Event Description: Respond to RPV High Pressure Instrument RE15 to Isolation Condenser Initiation Logic Failing High [**Trigger 1**]		
Initiation: Reactor power is at rated, or as directed by the Lead Examiner		
Cues: Annunciator C1a, LOGIC TRAIN 1 ACTUATED; E1a, ACTUATE A		
Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to Annunciator C1a, LOGIC TRAIN 1 ACTUATED; E1a, ACTUATE A • Reports that Isolation Condensers did not initiate and no Recirc Pumps tripped • Investigates cause and discovers RE15A, RPV High Pressure Instrument to Isolation Condenser Initiation Logic Failed High
	SRO	• Reviews Tech Specs Table 3.1.1, Section C.1 • Determines that there is one operable and one tripped Trip Systems and that no further TS actions are required. • Notifies SM/WWM for investigation and repair
Terminus:	The SRO has reviewed and applied Tech Specs.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 4
Event Description: Respond to APRM 2 failing INOP [**Trigger 3**].		
Initiation: The SRO has reviewed and applied Tech Specs, or as directed by the Lead Examiner		
Cues: Annunciator G1f, APRM HI-HI/INOP; G1d, CHANNEL I; G1C, SCRAM CONTACTOR OPEN, APRM 2 DN SCL OR INOP light is lit		

Time	Position	Applicant's Actions or Behavior
	ATC	• Responds to annunciators G2f, APRM HI-HI/INOP; G2d, CHANNEL II; G1C, SCRAM CONTACTOR OPEN and APRM 2 DN SCL OR INOP light lit o Reports ½ scram RPS system 1 o Reports APRM 2 DN SCL OR INOP light is ON and other APRMs indicate normal • Bypasses APRM 2 by placing APRM BYPASS in CH 2 position • Resets ½ scram by depressing SCRAM SYSTEM RESET pushbutton • Reports APRM bypassed and ½ scram reset • Completes Attachment 403-2
	BOP	• Makes a plant announcement for the ½ scram • Checks APRM 2 on Panel 3R and reports its INOP light is lit
	SRO	• Directs bypassing APRM 2 IAW procedure 403 and resetting ½ scram • May request Attachment 403-2 updated • May review TS 3.1 (no action required) • Notifies SM/WWM for APRM 2 repair
BOOTH: ***AFTER*** the crew has reset the ½ scram on RPS 1, insert **ATWS.CAE**		
Terminus:	APRM 2 is bypassed and ½ scram reset	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 5
Event Description: Respond to trip of Steam Packing Exhauster 1 [**Trigger 5**]		
Initiation: APRM 2 is bypassed and ½ scram reset, or as directed by the Lead Examiner		
Cues: Annunciator Q8c, EXHAUSTER TRIP		
Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to annunciator Q8c, EXHAUSTER TRIP o Reports Exhauster Blower 1 has tripped o Verifies gland steam pressure o Closes Exhauster Blower 1 Valve V-7-38 o Starts Exhauster Blower 2 and verifies the red light on o Throttles open Exhauster Valve 2 V-7-39 o Adjusts Exhauster Valve 2 V-7-39 to maintain GLAND STM HEADER VACUUM at 15 - 17.5 inches of water o Reports Exhauster Blower 2 is in service • Directs EO to investigate the trip of Exhauster Blower 1 [**Role Play**]
ROLE PLAY	As the EO sent to investigate the trip of Exhauster Blower 1, report there are indications of an overload on the breaker	
	SRO	• Notifies SM/WWM for repair • May direct condenser vacuum as key parameter
Terminus:	Exhauster Blower 2 has been started and proper gland steam header vacuum is established	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 2	Event No.: 6
Event Description: Respond to a stuck open EMRV [**Trigger 7**]		
Initiation: Exhauster Blower 2 has been started and proper gland steam header vacuum is established, or as directed by the Lead Examiner		
Cues: Annunciator B4g, SV/EMRV NOT CLOSED; EMRV NR108E tailpipe temperature rising; Torus water temperature rising; EMRV NR108E indicates in the VALVE OPEN REGION		

Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to Annunciator B4g, SV/EMRV NOT CLOSED o Checks RPV pressure, ADS and determines SV/EMRV status o Determines an EMRV is open (NR108E) • Performs ABN-40 actions o Verifies EMRV open conditions o Dispatches an EO to read EMRV tailpipe temperatures locally [**ROLE PLAY**]
ROLE PLAY: When directed as the EO to read EMRV tailpipe temperatures locally, report the following: 'E' EMRV tailpipe indicates 330 °F and steady, All other EMRV tailpipe temperatures indicate normal.		
		o Places the AUTO DEPRESS VALVE NR108E switch in OFF position o Determines EMRV still open o Cycles the AUTO DEPRESS VALVE NR108E switch from OFF to MAN to OFF o Determines EMRV still open o Cycles the AUTO DEPRESS VALVE NR108E switch from OFF to MAN to OFF 3-5 times o Determines EMRV still open o Places the EMRV NORMAL/DISABLE keylock switch for EMRV NR108E in DISABLE (rear of 1F/2F) o Determines EMRV still open
	SRO	• Directs entry into ABN-40, Stuck Open EMRV

		○ With the EMRV not closed, directs the ATC to manually scram the reactor IAW ABN-1 (An ATWS will occur leading to the next Event)
	ATC	• Performs ABN-40 actions ○ Places Feedwater Level Control in manual by depressing the AUTO/MAN pushbutton on the MASTER FEEDWATER CONTROLLER ▪ Verifies the red manual LED is illuminated ▪ **ADJUST** MASTER FEEDWATER CONTROLLER as required to control RPV water level within the normal band of 155-165" TAF ○ Places Feedwater Level Control in the AUTO mode as follows: ▪ Selects the P display digital readout on the MASTER FEEDWATER LEVEL CONTROLLER using the CHNG DISP button ▪ Selects the S display on the MASTER FEEDWATER LEVEL CONTROLLER ▪ Raise or lower the S display digital readout to match the P display digital readout on the MASTER FEEDWATER LEVEL CONTROLLER ▪ When the S display and P display digital readouts are equal, then places the MASTER FEEDWATER LEVEL CONTROLLER in AUTO by depressing the AUTO/MAN pushbutton. ▪ Verifies the green AUTO light is illuminated ▪ Monitors RPV water level and feedwater flow ▪ Maintains Reactor level at 160 inches TAF or as directed by the US by adjusting the MASTER FEEDWATER LEVEL CONTROLLER setpoint • Manually scrams the reactor IAW ABN-1 ○ Depresses both MANUAL SCRAM pushbuttons ○ Places the REACTOR MODE SELECTOR switch in SHUTDOWN ○ Reports there is a failure to scram ▪ Initiates ARI ▪ Places ROPS in BYPASS ▪ Places recirculation flow to minimum ▪ Reports Immediate Failure to Scram Actions are Complete

		o Inserts SRMs o Inserts IRMs
Terminus:	The Crew has determined that EMRV NR108E could not be closed and have inserted a manual scram, and have recognized ATWS conditions	

Notes/Comments

Op-Test No.: 10-1 NRC Scenario No.: NRC Sim 2 Event No.: 7/8

Event Description: Respond to an ATWS with reactor power > 2%; Failure of SLC Pump

Initiation: The Crew has determined that EMRV NR108E could not be closed and have inserted a manual scram, and have recognized ATWS conditions

Cues: The reactor has failed to scram and is in an electrical ATWS condition

Time	Position	Applicant's Actions or Behavior

	ATC	• Reports reactor power
		• Determines the ATWS is electric
		• Performs SP-22
		  o Starts the selected SLC Pump by placing the STANDBY LIQUID CONTROL Keylock in either the FIRE SYS 1 or FIRE SYS 2 position
		  o Verifies the following:
		  ▪ PUMP ON light for selected system illuminated
		  ▪ SQUIBS light for selected system illuminated
		  ▪ PUMP DISCH PRESS greater than Rx pressure
		  ▪ FLOW ON Alarm annunciates
		  ▪ SQUIB VALVE OPEN Alarm annunciates
		  ▪ Recognizes/reports failure of the first SLC Pump and starts the second pump
		• Performs SP-21 to insert control rods
		  o Determines electrical ATWS
		  o Vent the Scram Air header (Success Path)
		  ▪ Directs the EO to vent the scram air header [**ROLE PLAY**]

ROLE PLAY: As the EO directed to vent the scram air header, acknowledge the request. Venting the header is the success path to be performed at a later time.

CRITICAL TASK 2

		▪ Places the ROD WORTH MINIMIZER keylock in BYPASS ▪ Closes CRD DRIVE WATER PRESSURE CONTROL NC18 to maximize CRD drive water differential pressure ▪ Inserts Control Rods as directed by the US [**BOOTH**]
BOOTH: After the ATC has inserted a few control rods, fail the CRD FCV closed: insert MAL-CRD001A to 0.		
		o De-energize the Scram Solenoids (Not Successful) ▪ With the MSIVs open: ▪ Places the following Sub channel Test Keylocks in the TRIP position: ▪ RPS Sub Channel 1A Keylock ▪ RPS Sub Channel 1B Keylock ▪ RPS Sub Channel 2A Keylock ▪ RPS Sub Channel 2B Keylock ▪ When the control rods are no longer moving in, then places the RPS Channel I and II Sub channel Test Keylocks in the NORMAL position o Open Individual Scram Test Switches (Not Successful) ▪ Confirms all available CRD pumps are running ▪ Confirms open SDV vent and drain valves ▪ Obtains Key for 6XR Rod Scram Test Panel ▪ Opens Rod Scram Test Panel ▪ Individually OPEN the scram test toggle switch for a control rod not inserted as follows: ▪ Attempt to insert Cram Array Control Rods first ▪ Then insert any other Control Rod as directed by the US ▪ Monitors Reactor Building airborne radiation levels ▪ When the control rod stops moving, then CLOSE the scram test toggle switch ▪ Repeat to insert other control rods • Reports when control rods start moving inward (from scram air header venting) • Reports all control rods in

	SRO	• Directs entry into RPV Control – With ATWS EOP o Confirms ARI initiated o Directs ROPS bypassed o Directs all Recirculation Pumps tripped o Directs SLC initiated IAW SP-22, Initiating the Liquid Poison System o Directs ATC to insert control rods IAW SP-21, Alternate Insertion of Control Rods o Directs SP-1, Confirmation of Automatic Initiation and Isolations o Directs ADS bypassed o Directs SP-16, Bypassing MSIV Lo-Lo Level Isolation Interlocks and the RBCCW Interlocks o Waits until MSIV isolations are bypassed, then directs terminate and prevent RPV injection IAW SP-17 o Directs RPV water level below -20" to 30" IAW SP-19, Feedwater/Condensate and CRD Operation [**BOOTH**]
CRITICAL TASK 1		
		• Enters Primary Containment Control EOP on Torus high water temperature (95 °F) o Directs Torus Cooling IAW Support Procedure 25 • Enters RPV Control - No ATWS EOP when all control rods are inserted o Directs RPV water level 138" – 175" using SP-2 (FW)
BOOTH: To vent the scram air header when: RPV water level has been terminated/prevented, and, RPV water level is lowering, and, control rods are being manually inserted (or the CRD FCV is failed closed): then insert **Trigger 13**. Verify these actions are allowed by the Lead Examiner prior to inserting the trigger. **CRITICAL TASK 2**		
	BOP	• Trips all Recirculation Pumps when directed with the DRIVE MOTOR switches to STOP • Performs SP-1 • Places ADS TIMERS to BYPASS • Performs SP-16 o Obtains four (4) bypass plugs o Opens the EOP BYPASS PLUGS panel in the rear of Panel 6R ▪ INSERT a bypass plug in position BP1

		▪ INSERT a bypass plug in position BP2 o Opens the EOP BYPASS PLUGS panel in the rear of Panel 7R ▪ INSERT a bypass plug in position BP1 ▪ INSERT a bypass plug in position BP2 o Places the ISOL SIGNAL BYPASS V-6-395 switch in the BYPASS position o Informs the Unit Supervisor that the MSIV LO-LO Level Isolation Interlock has been bypassed o Verifies that the RBCCW System is not isolated due to high Drywell pressure/low RPV water level conditions o Opens the EOP BYPASS PLUGS panel in the rear of Panel 2R ▪ Removes the bypass plug from position BP1 ▪ Removes the bypass plug from position BP2 • Performs SP-17 o Terminates and prevents the Core Spray System injection into the RPV by performing the following: ▪ Presses the OVERRIDE switches for all the sensors that are lit ▪ Presses all ACTUATED switches, whether lit or unlit ▪ Confirms Core Spray Parallel Isolation Valves closed ▪ Confirms Core Spray Booster Pumps tripped ▪ Confirms Core Spray Main Pumps that are not being used to provide makeup water to the torus per SP37 are in the PULL-TO-LOCK position o Terminates and prevents Condensate and Feedwater injection by performing the following: ▪ Trips all operating Feedwater Pumps ▪ Confirms only one Condensate Pump running ▪ Places all individual FRV Controllers in MAN position ▪ Closes all Feedwater Regulating Valves ▪ Closes the Low Flow Valves o Reports RPV injection has been terminated and prevented • Monitors RPV water level and controls Feedwater to maintain desired band -20" to 20" IAW SP-19 o Confirms only one Condensate Pump and only one Feedwater Pump operating o Controls RPV Water level using the following: ▪ Feedwater Regulating Valves

		▪ Feed Regulating Valve Block Valves ▪ Feedwater Low Flow Valves ▪ Heater Bank Outlet Isolation Valves ▪ Feedwater and Condensate Pumps o Reports RPV water level in band • Performs SP-25 when directed (Torus cooling) o Confirm the SYSTEM MODE SELECT switch is in the TORUS COOLING position o Start an ESW Pump o Place and hold the System Pump Start Permissive Keylock for the selected pump in the appropriate position o Start the selected Containment Spray Pump using its control switch
Terminus:	Control rods have been fully inserted and RPV water level is rising towards the prescribed band as directed in the RPV Control – No ATWS EOP	

Notes/Comments

Procedures Used

Event	Procedure				
1	• None				
2	• None				
3	• TS Table 3.1.1				
4	• RAP-G1f • RAP-G2d • RAP-G1c • 403				
5	• RAP-Q8c				
6	• RAP-B4g • ABN-40 • ABN-1				
7	• RPV Control – With ATWS EOP • SP-16 • SP-17 • SP-21 • SP-1 • SP-19				
8	• SP-22 • SP-25 • RPV Control – No ATWS EOP • Primary Containment Control EOP				

Simulator Setup

1. Reset to IC-115
2. Lower reactor power to 97% with recirc flow
3. Remove the Amplidyne in service IAW 336.1, section 7
4. Have copy of 336.1 (complete procedure) for applicants; mark step 8.1.1 and 8.1.2 complete
5. Have a copy of REMA NRC Sim2 for students
6. Have a blank copy of Attachment 403-2 in the 403 binder

Event	Trigger	Malfunction
1	NA	
2	NA	
3	**T1 →**	ICH-NSS087A to 1200 psig • Causes RE15A to fail upscale
4	**T3 →**	MAL-NIS021B • APRM 2 fails INOP
5	**T5 →**	MAL-MSS005A • Trips Steam Packing Blower 1
6	**Trigger 7→**	MAL-NSS025E to 100% • This inserts a 100% leak on EMRV NR108E • This leak will not be stopped
7	**WAIT: SEE EVENT #4 →**	Activate ATWS.CAE file **WHEN DIRECTED BY EVENT #4** • This inserts an electric ATWS, not to be inserted until after the crew resets the ½ scram from Event #4.

8	**PRESETS →**	PMP-SLC001A (SLC Pump 1) PMP-SLC002A (SLC Pump 2) • This inserts a shaft break on each SLC Pump
	PRESETS →	Insert the following Event Trigger (1) and Command (2) on Trigger 9: 1) hwx03o266b.eq.1 2) DMF PMP-SLC002A • This will DELETE the shaft break on SLC Pump 2 if the SLC system 1 keylock is placed in FIRE SYS 1.
	PRESETS →	Insert the following Event Trigger (1) and Command (2) on Trigger 11: 1) hwx03o266d.eq.1 2) DMF PMP-SLC001A • This will DELETE the shaft break on SLC Pump 1 if the SLC system 2 keylock is placed in FIRE SYS 2.
	Trigger 13→	LOA-CAS021 to 0 • This closes the scram air header air isolation valve V-6-175 LOA-CAS022 to 1 • This opens the scram air header vent valve to vent the header

Shift Turnover

Current plant conditions:

- 97% power
- Main Generator voltage control is in Manual

Shift Activities:

- Place the amplidyne in automatic service IAW 336.1, section 8, starting on step 8.1.3
- Raise reactor power to 100% with recirculation flow

Scenario Outline

Facility: Oyster Creek **Scenario No.:** 3 **Op Test No.:** 10-1 NRC

Examiners: _____ **Operators:** _____

_____ _____

_____ _____

Initial Conditions:

- 75% power
- TBCCW Pump 2 is tagged out of service

Turnover:

- Lower power to 70% using recirculation flow IAW 1001.22-3, Core Maneuvering Daily Instruction Sheet
- Backwash the Main Condenser Half B South

Event No.	Malf. No.	Event Type*		Event Description
1	NA	R	ATC	Lower reactor power to 70% using recirculation flow
2	NA	N	BOP	Continue backwashing Main Condenser Half B South
3	BKR-CRD002	C TS	ATC SRO	Respond to a CRD Pump A trip
4	MAL-TCS010	I	BOP	Respond to the EPR setpoint failing low
5	SWI-TBS027C ANN-L4f	C TS	BOP SRO	Respond to a trip of Control Room Vent Fan B
6	MAL-NSS012E	I TS	ATC SRO	Respond to a variable leg leak in the A and C GEMAC RPV level indicators ID13A and ID13C
7	BKR-CRD001	M	Crew	Respond to a loss of all CRD Flow
8	MAL-NSS016A	M	Crew	Respond to a Safety Valve lifting post scram
9	MAL-CNS004A-D	C	Crew	Respond to a trip of the operating Containment Spray Pump

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

Simulator Summary

Event	Event Summary
1	The ATC will lower reactor power to approximately 70% with recirculation flow using the Master Recirc Speed Controller. (**ATC: Reactivity Manipulation**)
2	The BOP will backwash condenser B South IAW procedure 323.6, Backwashing Condensers. This will require several switch manipulations by the BOP. (**BOP: Normal Evolution**)
3	The ATC will respond to a trip of CRD Pump A IAW RAP H-1-c. The ATC will start CRD Pump B. The SRO will review and apply Tech Spec 3.4.D.2. (**ATC: Component Malfunction; SRO: Tech Specs**)
4	The BOP will respond to the EPR setpoint failing low over 3 minutes (indicating 900 psig) IAW ABN-9, Electric Pressure Regulator Malfunction. The BOP will transfer RPV pressure control to the MPR and secure power to the EPR. The BOP will then raise RPV pressure as directed by the SRO. (**BOP: Instrument Malfunction**)
5	The Control Room HVAC Fan B will trip. The SRO will direct the BOP to place Control Room HVAC System A in service IAW 331.1, Control Room and Old Cable Spreading Room Heating, Ventilation, and Air Conditioning System. The SRO will apply Tech Spec 3.17.B. (**BOP: Component Malfunction; SRO: Tech Specs**)
6	The ATC will diagnose a rising RPV water level. Indications of actual RPV water level will rise on Panel 4F and Panel 5F/6F Yarway indications. The ATC will perform actions to stabilize RPV water level IAW ABN-17, Feedwater System Abnormal Conditions. The ATC will take manual control of RPV water level and swap Feedwater Level Control to the alternate water level instrument ID13B. The increased Primary Containment leakage will result in a rise in unidentified leak rate and the SRO will review and apply Tech Spec 3.3.D.2. (**ATC: Instrument Malfunction; SRO: Tech Specs**)
7	CRD Pump B will trip on overload and the Crew will respond to a loss of all CRD flow IAW RAP H-2-c. Upon receipt of two HCU accumulator alarms, the Crew will manually scram the reactor perform post scram actions. (**Major Evolution**) (**PRA**)
8	Post scram, the crew will respond to a Safety Valve lifting. This will result in rising drywell pressure and temperature requiring Drywell Sprays IAW the Primary Containment Control EOP. (**Major Evolution**)

9	When initiating Containment Spray IAW the Primary Containment Control EOP, the Containment Spray pump in the system the Crew starts will trip after 30 seconds. The Crew must initiate containment spray using an alternate Containment Spray Pump. (**Component Failure After EOP**)
Critical Task 1	The Crew must manually scram the reactor following a loss of all CRD pumps. With no CRD flow at high power, damage to the CRD drive mechanisms will occur potentially inhibiting the ability to successfully scram.
Critical Task 2	When Drywell or Torus pressure exceeds 12 psig, **OR** before Drywell bulk temperature is determined it cannot be maintained below 281°F, spray the drywell IAW SP-29, Initiation of the Containment Spray System for Drywell Sprays.

	ES-301-4 Target Quantitative Attributes	**Actual Attributes**	**Event Number(s)**
1.	Total malfunctions (**5-8**)	**7**	**3, 4, 5, 6, 7, 8, 9**
2.	Malfunctions after EOP entry (**1-2**)	**2**	**8, 9**
3.	Abnormal events (**2-4**)	**2**	**4, 6**
4.	Major transients (**1-2**)	**2**	**7, 8**
5.	EOPs entered/requiring substantive actions (**1-2**)	**1**	**8**
6.	EOP contingencies requiring substantive actions (**0-2**)	**0**	**N/A**
7.	Critical tasks (**2-3**)	**2**	**7, 9**

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 3	Event No.: 1
Event Description: Lower reactor power to 70% using recirculation flow		
Initiation: Following shift turnover		
Cues: As directed by the SRO following shift turnover		

Time	Position	Applicant's Actions or Behavior
	SRO	• Approves the ReMA and provides to the ATC • Directs the ATC to lower power to 95% IAW the Core Maneuvering Daily Instruction Sheet • Acts as the reactivity Manager • Provides a reactivity brief • May notify the Power team when at 95% power
	ATC	• Lowers power IAW the Core Maneuvering Daily Instruction Sheet o May review 202.1, section 6.0, Power Reductions o Rotates the MASTER RECIRC SPEED CONTROLLER manual knob CW o Monitors power, level, pressure o Reports to SRO when rated power is reached
	BOP	• Provides second check for the reactivity manipulation
Terminus:	Reactor power is approximately 70%	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 3	Event No.: 2
Event Description: Continue backwashing Main Condenser Half B South		

Initiation: Reactor power is approximately 70%, or as directed by the Lead Examiner		
Cues: As directed by the SRO		
Time	Position	Applicant's Actions or Behavior
	SRO	• Directs BOP to continue the main condenser backwash IAW procedure 323.6, starting at step 5.1.6.1
	BOP	• Performs backwash of condenser half B South IAW procedure 323.6, starting at step 5.1.6.1 o Verifies the following: ▪ All condenser valves are in the normal position ▪ The inlet & outlet valves for each condenser half are open ▪ The backwash valves and the cross connect valves for each condenser are closed ▪ May verify the EO is aware of which valves will be operated [**ROLE PLAY**] o Places the COND B SOUTH BACKWASH CONTROL switch to BACKWASH o After about 10 seconds, places the COND B SOUTH CIRC WATER INLET & OUTLET switch to CLOSE o Verifies the following: ▪ V-3-15, COND B SOUTH CIRC WATER INLET valve closed ▪ V-3-30, COND B SOUTH CIRC WATER OUTLET valve closed ▪ V-3-21, COND B SOUTH BACKWASH CONTROL valve open ▪ V-3-25, COND B CROSS CONNECT valve open ▪ V-3-29, COND B NORTH CIRC WATER OUTLET valve closed ▪ V-3-14, COND B NORTH CIRC WATER INLET valve

		open ▪ V-3-20, COND B NORTH BACKWASH CONTROL valve closed o Backwashes for about 3-5 minutes o Monitors the following during backwash: ▪ Condenser Hotwell Level ▪ Turbine Exhaust Hood Temperature ▪ Condenser Vacuum o Places the COND B SOUTH CIRC WATER INLET & OUTLET switch to OPEN o After about 10 seconds, places the COND B SOUTH BACKWASH CONTROL switch to CLOSE o Verifies the following: ▪ V-3-15, COND B SOUTH CIRC WATER INLET valve open ▪ V-3-30, COND B SOUTH CIRC WATER OUTLET valve open ▪ V-3-21, COND B SOUTH BACKWASH CONTROL valve closed ▪ V-3-14, COND B NORTH CIRC WATER INLET valve open ▪ V-3-29, COND B NORTH CIRC WATER OUTLET valve open ▪ V-3-20, COND B NORTH BACKWASH CONTROL valve closed ▪ V-3-25, COND B CROSS CONNECT valve open o Reports condenser backwash is complete
ROLE PLAY	When told as the EO which backwash valves will be operated, acknowledge the report	
Terminus:	Main condenser backwash is complete	

Notes/Comments

Op-Test No.: 10-1 NRC Scenario No.: NRC Sim 3 Event No.: 3 Event Description: CRD Pump A trips requiring Tech Spec LCO entry [**Trigger 1**]		
Initiation: Main condenser backwash is complete or as directed by the Lead Examiner		
Cues: Annunciator H1c, PUMP A OL; H7c, CHARG WTR PRESS LO; COOLING WATER FLOW, CLG WTR/REACTOR ΔP, DRV WTR/REACTOR ΔP indicate downscale; CRD Pump A breaker open		
Time	Position	Applicant's Actions or Behavior
	ATC	• Responds to annunciator H1c, PUMP A TRIP o Reports CRD Pump A tripped o Dispatches EO to investigate pump/breaker [**ROLE PLAY**] o Starts CRD Pump B by placing CRD PUMP NC08B switch to START o Reports CRD Pump B running with CRD indications return to normal
	SRO	• Declares CRD Pump A inoperable • Reviews and applies Tech Spec 3.4.D.2 o If one CRD hydraulic pump becomes inoperable when the reactor water temperature is above 212 ºF, the reactor may remain in operation for a period not to exceed 7 days provided the second CRD hydraulic pump is operating and is checked at least once every 8 hours. If this condition cannot be met, the reactor water temperature shall be reduced to less than 212 ºF • Notifies SM/WWM about the pump trip
ROLE PLAY		As the EO investigating the CRD Pump A trip, wait 2 minutes and report the pump tripped on overload.
Terminus:		CRD Pump B is in service and the SRO has addressed Tech Specs

Notes/Comments

Op-Test No.: OC 2008	Scenario No.: NRC SIM3	Event No.: 4
Event Description: Respond to Electronic Pressure Regulator (EPR) Failure [**Trigger 3**]		
Initiation: CRD Pump B is in service, or as directed by the Lead Examiner.		
Cues: RPV Pressure and MWe drop (and stabilize at a lower value); EPR RELAY SETPOINT indicates 900 psig after 3 minutes		

Time	Position	Applicant's Actions or Behavior
	ATC	• Reports PRV pressure lowering • Monitors RPV pressure
	BOP	• Reports EPR RELAY SETPOINT is low/changed • Performs ABN-9, Electronic Pressure Regulator Malfunction [**PANEL 7F**] o Slowly lowers the MPR setpoint by placing the MPR RELAY POSITION switch in the ↑% position using 1 second bumps until the MPR position indicator moves in the direction of and reaches the EPR setting and the MPR takes control o Verifies MPR CONTROLLING light is ON o Verifies the EPR CONTROLLING light is OFF o Places the EPR POWER switch to OFF o Verifies alarm Q6a, EPR PWR LOST alarm is received o Slowly raises RPV pressure to the previous pressure by placing MPR RELAY POSITION switch in the ↓% position o Refers to Procedure 202.1 for limitations with one pressure regulator out of service (no actions required) • Reports MPR in control and RPV pressure back to its previous pressure
	SRO	• Directs entry into ABN-9, Electronic Pressure Regulator Malfunction • Notifies SM/WWM about the EPR failure
Terminus:	The EPR is off and the MPR is in control, and RPV pressure has been re-established.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 3	Event No.: 5
Event Description: Trip of Control Room Vent System B **[Trigger 5]**		
Initiation: The EPR is off and the MPR is in control, and RPV pressure has been re-established, or as directed by the Lead Examiner		
Cues: Annunciator L4f, CONTROL RM HVAC SYS B TROUBLE; CR HVAC System B is shutdown.		

Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to annunciator L4f, CONTROL RM HVAC SYS B TROUBLE o Reports that CR HVC B has shutdown o Dispatches NLO to Panel ER-826-134 to determine cause of trip **[ROLE PLAY]**
ROLE PLAY: As the NLO, when requested to check Panel ER-826-134, report that there are indications the fan blower has tripped. As the Lead Examiner, direct the BOP to place CR HVAC System A in service IAW 331.1. Hand the BOP a marked up copy of 331.1. **For time compression,** tell them to start at step 5.3.4. When the get to step 5.3.8, tell the steps 5.3.8 – 5.3.10 have been completed SAT.		
		• Starts CR HVAC System A IAW procedure 331.1, section 5.0 (Startup shown below) o Momentarily places CONTROL ROOM HVAC A SYSTEM BYPASS in RESET o Verifies CONTROL ROOM HVAC A SYSTEM MODE switch in NORM o Start HVAC A Fan FN-826-008A by placing CONTROL ROOM HVAC A SYSTEM INITIATION switch in ON o Verifies isolation dampers open: ▪ DM-826-042 ▪ DM-826-043 o Verifies CR HVAC Fan A FN-826-008A is running o Verifies System A operational mode is as selected by observing the NORM light lit

		○ Notifies NLO to close refrigeration compressor breakers on the side of air conditioning unit 1-826-001A as required **[ROLE PLAY]**
ROLE PLAY: As the EO, when requested to close refrigeration compressor breakers 1, 2, and 3, report breakers are closed.		
		○ Reports CR HVAC System A is in service
	SRO	• Directs CR VHAC System A started IAW procedure 331.1 • Declares CR HVAC System B inoperable • Reviews TS 3.17.B ○ With one control room HVAC system determined inoperable: 1. Verify once per 24 hours the partial recirculation mode of operation for the operable system, or place the operable system in the partial recirculation mode; and 2. Restore the inoperable system within 7 days, or prepare and submit a special report to the Commission in lieu of any other report required by Section 6.9, within the next 14 days, outlining the action taken, the cause of the inoperability and the plans/schedule for restoring the HVAC system to operable status. • Notifies WWM/SM for repair/investigation • Briefs the Crew
Terminus:	CR HVAC System A is in service and the SRO has reviewed/applied the Tech Specs.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 3	Event No.: 6
Event Description: Responds to a leak in the common variable leg to RPV water level instruments ID13A and ID13C [**Trigger 7**]		
Initiation: CR HVAC System A is in service, or as directed by the Lead Examiner		
Cues: ID13A and ID13C indication lowers; Other RPV water level indicators rising; Drywell pressure, temperature, unidentified leakage rising		

Time	Position	Applicant's Actions or Behavior
	ATC	• Reports Indicated RPV water level lowering on NR GEMACs ID13A and ID13C, with RPV water level rising on all other available RPV water level instruments • Reports small rise in Drywell pressure, temperature and Drywell unidentified leak rate • Performs ABN-17, Feedwater System Abnormal Conditions **OR** ABN-58, RPV Level Instrument Failures o Places the MASTER FEEDWATER LEVEL CONTROLLER in manual by pressing the AUTO/MAN pushbutton o Confirms Feedwater flow is approximately equal to steam flow ▪ Lowers feedwater flow by turning the manual knob on the MASTER FEEDWATER LEVEL CONTROLLER CCW to match TOTAL STEAM FLOW and TOTAL FEEDWATER FLOW o Places the LEVEL TRANSMITTER SELECTOR to the B position o Selects the S display on the MASTER FEEDWATER LEVEL CONTROLLER o Matches the S display to the P display by turning the manual knob on the MASTER FEEDWATER LEVEL CONTROLLER o When the deviation = 0 (S = P; Y = 0), then places the turning the manual knob on the MASTER FEEDWATER LEVEL CONTROLLER in AUTO o Monitors RPV water level and Feedwater flow o Maintains RPV water level at 160" or as directed by the US • Reports RPV water level transmitters swapped, Feedwater in

		auto and controlling.
	BOP	• May perform Drywell venting IAW attachment 312.11-10, if directed o Opens Torus vent valve V-28-47 o Opens Torus vent valve V-28-18 o Monitors DW pressure • May perform Drywell venting IAW attachment 312.11-12, if directed o Opens Drywell vent valve V-23-21 o Opens Drywell vent valve V-23-22 o Monitors DW pressure
	SRO	• Directs entry into ABN-17, Feedwater System Abnormal Conditions **OR** ABN-58, RPV Level Instrument Failures • Notifies SM/WWM for repair/investigation of RPV water level instruments ID13A and ID13C • May direct Drywell venting IAW 312.11-10 or 312.11-12 • Enters Tech Spec 3.3.D.1 for 2 gpm increase in unidentified leakage in a 24 hour period o With the reactor coolant system leakage greater than the limits in 3.3.D.1.a or b above, reduce the leakage rate to within the acceptable limits within 8 hours, or place the reactor in the shutdown condition within the next 12 hours and be in the cold shutdown condition within the following 24 hours.
Terminus:	RPV water level transmitters have been swapped, Feedwater is in auto and is controlling, and the SRO has reviewed/applied the Tech Specs	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 3	Event No.: 7
Event Description: Respond to a loss of all CRD flow [**Trigger 9**]		
Initiation: RPV water level transmitters have been swapped, Feedwater is in auto and is controlling, or as directed by the Lead Examiner		
Cues: Annunciator H2c, PUMP B OL; H7c, CHARG WTR PRESS LO; COOLING WATER FLOW, CLG WTR/REACTOR ΔP, DRV WTR/REACTOR ΔP indicate downscale; CRD Pump B breaker open		

Time	Position	Applicant's Actions or Behavior
	ATC	• Responds to annunciator H2c, PUMP B OL • Recognizes/reports all CRD flow is lost. IAW RAP H2c, waits until two accumulator alarms are received then inserts a manual scram o **NOTE**: Two accumulator alarms are represented by annunciators H8c, ACCUMULATOR PRESS LO/LEVEL HI; and H7a, ROD BLOCK • Manually scrams the reactor IAW ABN-1 o Depresses both MANUAL SCRAM pushbuttons o Places the REACTOR MODE SELECTOR switch in SHUTDOWN o Reports all immediate scram actions are complete o Inserts SRMs o Inserts IRMs • Performs SP-1 when directed • May direct closure of CRD Charging header valve V-15-52 [**ROLE PLAY**] • Directs Chemistry to perform post-scram analysis of reactor water
CRITICAL TASK 1		
ROLE PLAY		If directed as the EO to close CRD Charging header valve V-15-52, insert LOA-CRD024 to 0. When done, report V-15-52 is closed
	SRO	• Directs the ATC to manually scram the reactor IAW ABN-1, Reactor Scram • Directs entry into RPV Control – No ATWS EOP o Directs the BOP to control RPV water level 138"-175" IAW
CRITICAL TASK 1		

		SP-2 (Feedwater) and SP-3 (CRD) o Directs RPV pressure 800 – 1000 psig with Turbine Bypass Valves (may be lower band) o Directs SP-1, Confirmation of Automatic Initiations and Isolations
	BOP	• May have EO investigate B CRD Pump [**ROLE PLAY**]
ROLE PLAY: If asked to investigate B CRD Pump trip, wait 2 minutes and report that B CRD Pump tripped on overload.		
		• Reports RPV water level 138" – EOP entry • Controls RPV water level initially IAW ABN-1 o When RPV water level begins to rise following the scram, performs the following: ▪ Selects one Feedwater Pump and trips the other two Feedwater Pumps ▪ Places all MFRVs in MANUAL ▪ Closes all MFRVs • Performs SP-2 (Feedwater) o Controls RPV water level 138"-175" using the following as necessary: ▪ Feedwater Regulating Valves ▪ Main Feed Regulating (MFRV) Block Valve ▪ Feedwater Low Flow Valves ▪ Heater Bank Outlet Isolation Valves ▪ Feedwater and Condensate Pumps o Reports RPV water level in band • Performs SP-3 (CRD) (if required) o Verifies running all available CRD Pumps
Terminus:	ABN-1 scram actions are complete and RPV water level is in/near the prescribed band	

Notes/Comments

Op-Test No.: 10-1 NRC Scenario No.: NRC Sim 3 Event No.: 8/9

Event Description: Respond to Safety Valve lifting with a failure of one Containment Spray system to start

Initiation: ABN-1 scram actions are complete and RPV water level is in/near the prescribed band, or as directed by the Lead Examiner (Note: The leak will start 3 minutes after the Mode Switch is placed in SHUTDOWN from Event 7)

Cues: (RPV leak) Annunciator B4g, SV/EMRV NOT CLOSED; C3f, DW PRESS HI/LO; C8h, DW TEMP HI; Drywell pressure, temperature and leak rate rising

Time	Position	Applicant's Actions or Behavior
	Crew	• Monitor RPV water level and primary Containment temperature and pressure and report as required: o RPV water level 138" – EOP entry o RPV water Level 90" RPV water level Lo-Lo o RPV water level at TAF o Drywell pressure 3.0 psig – EOP entry o Drywell temperature 150 °F – EOP entry o Drywell pressure 12 psig o Drywell temperature as it approaches 281 °F • Responds to annunciator B4g, SV/EMRV NOT CLOSED and C3f, DW PRESS HI/LO o Reports Drywell pressure, temperature and leak rate rising o Reports a Safety Valve has lifted o Reports Drywell high pressure – EOP entry • Performs SP-3 (CRD) o Confirms both CRD Pumps running o Directs EO to close CRD Charging Header Supply valve V-15-52 [**ROLE PLAY**] o Directs EO to open CRD Bypass valve V-15-237 o Directs EO to monitor CRD flow o Directs EO to throttle open CRD Bypass valve V-15-30 to not exceed 150 GPM o Reports SP-3 complete

ROLE PLAY: When directed as the EO to perform SP-3 actions above, insert **Trigger 13**. Report SP-3 actions complete and CRD flow is 150 gpm and steady.

		• Performs SP-7 (Liquid Poison) o Inserts a key in the STANDBY LIQUID CONTROL Keylock and places to FIRE SYS 1 or FIRE SYS 2 position o Verifies the following: ▪ PUMP ON light on ▪ SQUIBS light on ▪ PUMP DISCH PRESS > RPV pressure ▪ FLOW ON annunciator in alarm (G1b) ▪ SQUIB VALVE OPEN annunciator in alarm (G2b) o Reports SP-7 complete • Places ADS TIMERs in BYPASS • Performs SP-9 (Core Spray) o Confirms Core Spray Suction valves open (V-20-32, V-20-3, V-20-33, & V-20-4) o Confirms Core Spray Test valves (V-20-27 & V-20-26) o Confirms one Core Spray Main Pump operating in each system o Confirms one Core Spray Booster Pump operating in each system o Confirms Core Spray Discharge valves open (V-20-12 & V-20-18) o When RPV pressure is below 305 psig, then confirms at least one Core Spray Parallel Isolation valve in each system opens • Performs SP-4 (when RPV water level is recovering >61") o Overrides Core Spray logic by pressing lit OVERRIDE pushbuttons and all ACTUATED pushbuttons o Restores/maintains the directed RPV water level band by cycling the Core Spray Parallel Isolation valves • Confirms Isolation Condensers initiated, but may remove from service after • Lowers RPV pressure to allow low pressure systems to inject by (any): initiating Isolation Condensers and/or opening EMRVs • Emergency Depressurization actions o Places ROPS in BYPASS o Opens all EMRVs by placing the associated control switches to MAN o Reports all EMRVs open

CRITICAL TASK 2		• Performs SP-29 (Drywell Sprays) o Confirms all Reactor Recirculation Pumps tripped o Confirms all Drywell Recirc Fans tripped o When directed, initiates Drywell Sprays ▪ Places the SYSTEM MODE SELECT switch for the selected system in the DW SPRAY position ▪ Verifies the Torus CLG Discharge valve closes ▪ Verifies the DW Spray Discharge valve opens ▪ Starts an ESW Pump ▪ Selects a Containment Spray Pump ▪ Places and holds the System Pump Start Permissive keylock for the selected in the appropriate position ▪ Starts the selected Containment Spray Pump [**BOOTH**]
BOOTH: <u>30 seconds</u> after the applicant starts a Containment Spray Pump (or as directed by the Lead Examiner), trip the pump by inserting it's associated trigger: **Trigger 15**: Cont. Spray Pump 51A (System 1) **Trigger 17**: Cont. Spray Pump 51B (System 1) **Trigger 19**: Cont. Spray Pump 51C (System 2) **Trigger 21**: Cont. Spray Pump 51D (System 2)		
		▪ **NOTE**: CREW notices the Containment Spray Pump that was placed in service has tripped and starts another Containment Spray Pump ▪ Monitors system and Drywell parameters ▪ Confirms the following RBCCW valves closed ▪ V-5-147, V-5-148, V-5-166, & V-5-167 ▪ Starts an additional Containment Spray Pump if required ▪ Reports Drywell Sprays in-service o Before Drywell/Torus pressure lowers to 4 psig, secure Drywell Sprays: ▪ Place the SYSTEM MODE SELECT switch in TORUS CLG position ▪ Verifies the DW Spray Discharge valve closed ▪ Verifies the Torus CLG Discharge valve opens • Reports EOP entry on high Torus water temperature (95 °F)

	SRO	• Directs entry into Primary Containment Control EOP on high Drywell pressure and/or temperature, and re-entry into RPV Control – No ATWS EOP on high Drywell pressure • RPV Control – No ATWS EOP o May direct RPV pressure band 500-600 psig due to the leak with Turbine Bypass Valves o Directs SP-3 (CRD System Operation) o Directs SP-7 (Liquid Poison Injection) o Directs placing ADS Timers in Bypass (RPV water level < 61") o Directs confirming the Isolation Condensers have initiated o Directs SP-9 (Core Spray) o Confirms low pressure systems have the capacity for restoring and maintaining RPV water level o Directs lowering RPV pressure to allow low pressure systems to inject o Directs SP-4 (Core Spray) o If RPV water level lowers to 0", directs entry into Emergency Depressurization – No ATWS EOP • Directs Emergency Depressurization – No ATWS EOP (if necessary on 0" RPV water level) o Directs ROPS bypassed o Verifies Torus water level > 90" o Directs all EMRVs open o When RPV water level rises to above 61", directs SP-4 (Core Spray) and to maintain RPV water level 100 – 175" • Primary Containment Control EOP o Directs SP-1, Confirmation of Automatic Initiations and Isolations o Directs line up of Drywell Sprays IAW SP-29 o Directs initiation of Drywell Sprays when either: ▪ Drywell or Torus pressure exceeds 12 psig ▪ It has been determined that bulk Drywell temperature is approaching 281 °F
CRITICAL TASK 2		
Terminus:	RPV water level is in the band or rising toward the band, and the Drywell Sprays has been initiated	

Notes/Comments

Procedures Used

Event	Procedure				
1	• REMA (handed out)				
2	• 323.6 (handed out)				
3	• RAP-H1c • RAP-H7c				
4	• ABN-9				
5	• RAP-L4f • 331.1 (handed out)				
6	• ABN-17 • ABN-58 • Tech Specs 3.5.D • Hardcard 312.11-10 or -12				
7/8/9	• ABN-1 • PCC EOP • RPVC – no ATWS EOP • SP-2 • SP-3 • SP-1 • ED – no ATWS • SP-29				

Simulator Setup

1. Reset to IC-115
2. Lower reactor power to 75% using recirc flow
3. Adjust reactor pressure to approximately 1000 psig
4. Place TBCCW Pump #2 in PTL and hang a tag on it
5. Have copy of 323.6 for applicants
6. Have a marked up copy of 331.1
7. Applicants can use the laminated copy of 1001.22-3, Core Maneuvering Daily Instruction Sheet, in the simulator to lower recirc flow

Event	Trigger	Malfunction
1	NA	None
2	NA	None
3	**T1** →	BKR-CRD002 to TRIP • This trips CRD Pump A
4	**T3** →	MAL-TCS010 to 900 over 180 seconds • This causes the EPR setpoint to fail low and indicate 900 psig over a 3 minute ramp rate.
5	**T5** →	SWI-TBS027C to ON SWI-TBS027A to OFF SWI-TBS023A to OFF STL-TBS006A to OFF STL-TBS006C to OFF • This trips the CR HVAC Fan B and extinguishes all indicating lights on Panel 9XR for CR HVAC B
	T5 →	ANN-L-4f to ON • This brings in CONTROL RM HVAC SYS B TROUBLE alarm

6	**T7** →	MAL- NSS012E to 2% over a 15-minute ramp • This places a leak in the common variable leg to NR GEMAC water level instruments ID13A and ID13C (this also inputs into FWLC).
7	**T9** →	BKR-CRD001 to TRIP • This will trip CRD Pump NC08B
	T9 →	MAL-CRD010_0219 with a 2-minute time delay
	T9 →	MAL-CRD010_0223 with a 4-minute time delay • These will result in HCU accumulator trouble alarms
8/9	**Preset** →	Insert the following Event Trigger on Trigger 11: hwx03i271n.lt.1 • This activates Trigger 11 when the Reactor Mode switch is taken out of RUN
	T11 →	MAL-NSS016A on a 3 minute time delay • This will open Safety Valve NR28D
	T13 →	LOA-CRD024 to 0 (to close V-15-52) LOA-CRD052 to 1 (to open V-15-237) LOA-CRD051 to 1 (to open V-15-30) This isolates CRD charging header and allows CRD flow on the bypass

	T15 →	MAL-CNS004A • Trips Containment Spray Pump 51A in System 1
	T17→	MAL-CNS004B Trips Containment Spray Pump 51B in System 1
	T19 →	MAL-CNS004C Trips Containment Spray Pump 51C in System 2
	T21 →	MAL-CNS004D Trips Containment Spray Pump 51D in System 2

Shift Turnover

Current plant conditions:

- The plant is at 75% power
- TBCCW Pump 2 is tagged out of service

Shift activities

- Lower power to 70% using recirculation flow IAW 1001.22-3, Core Maneuvering Daily Instruction Sheet
- Backwash Main Condenser Half B South starting at step 5.1.6.1

Scenario Outline

Facility: Oyster Creek **Scenario No.:** 4 **Op Test No.:** 10-1 NRC

Examiners: _____ **Operators:** _____

_____ _____

_____ _____

Initial Conditions:
- 100% power
- Dilution pump 2 is tagged out of service

Turnover:
- No evolutions are planned during this shift

Event No.	Malf. No.	Event Type*		Event Description
1	MAL-CRD001A	C	ATC	Respond to CRD Flow Control Valve failed closed.
2	ICH-ICS001A	C TS	BOP SRO	Respond to a leak in Isolation Condenser Shell A.
3	IND-CFW018 ANN-K-2B	R C	ATC BOP	Condensate Pump A experiences high amps requiring a rapid power reduction and securing of Condensate Pump.
4	MAL-RCP003D MAL-RCP004D	C TS	BOP SRO	Respond to Recirculation Pump D total seal failure.
5	MAL-CRD006	C	ATC	Respond to multiple drifting control rods.
6	MAL-PCN007	M	Crew	Respond to a Torus Leak requiring entry into Primary Containment Control.
7	VLV-CSS001, 009	C	Crew	Respond to Core Spray system suction valves being mechanically seized when lining up the CST to the Torus.
8	MAL-PCN007	M	Crew	Respond to a Torus leak increase requiring the crew to Emergency Depressurize.

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

Simulator Summary

Event	Event Summary
1	The ATC will respond to in-service CRD Flow Control Valve failing closed. The ATC will swap Flow Control Valves IAW procedure 302.1, Control Rod Drive System. (**ATC: Component Malfunction**)
2	The BOP will respond to lowering level in Isolation Condenser A shell IAW RAP-C6a. The BOP will fill the IC shell from Panel 5F/6F. The IC shell level will not recover above the required point of 7.3 ft and the SRO will declare IC A inoperable and apply Tech Spec 3.8.C. (**BOP: Component Malfunction; SRO: Tech Specs**)
3	Condensate Pump A will experience rising motor amps.The crew will receive annunciator K-2-f, CONDENSATE PUMP B OL, and the BOP will diagnose the Condensate Pump A current indication in the Control Room is high. The field operator (on request) will report loud noise coming from Condensate Pump A. The SRO will direct the ATC to perform a rapid power reduction and the BOP to remove one Feedwater Pump and the affected Condensate Pump from service. (**ATC: Reactivity Manipulation; BOP: Component Malfunction**)
4	The BOP will respond to a leak in Recirculation Pump D outer seal, followed by a leak in the inner seal. The SRO will direct entry into ABN-2, Recirculation System Failures, to trip Recirculation Pump D and Isolate the D Recirculation Loop. The SRO will review and apply Tech Specs 3.3.D and 3.3.F for unidentified leak rate and recirculation loop operability. (**BOP: Component Malfunction; SRO: Tech Specs**)
5	The ATC will identify/report multiple drifting control rods into the core and IAW ABN-6, Control Rod Malfunctions, manually scram the reactor IAW ABN-1, Reactor Scram. (**ATC: Component Malfunction**) (**PRA**)
6	A leak in the Torus will develop requiring the crew to enter the Primary Containment Control EOP. The crew will commence makeup to the Torus IAW SP-37, Makeup To The Torus Via Core Spray System. (**Major Evolution**)
7	When the crew attempts to line up Core Spray System to make up to the Torus, Core Spray suction valve for System 1(2) V-20-3(4)and V-20-32(33), Core Spray System 1(2) suction valves will not close. The crew will place the alternate Core Spray Pump System in service. (**Component Failure After EOP**)

8	After the Crew places Core Spray Pump/System 2 in service to makeup to the Torus, the Torus leak will increase leading the crew to Anticipate Emergency Depressurization and/or Emergency Depressurize the RPV. (**Major Evolution**)
Critical Task 1	The ATC will manually scram the reactor following control rods drifting into the core. There is no manual scram associated with this casualty and the core is not analyzed for the resultant abnormal rod configuration.
Critical Task 2	The crew will Emergency Depressurize the RPV prior to Torus Level reaching 110 inches.

	ES-301-4 Target Quantitative Attributes	**Actual Attributes**	**Event Number(s)**
1.	Total malfunctions (**5-8**)	**7**	**1, 2, 3, 4, 5, 6, 7**
2.	Malfunctions after EOP entry (**1-2**)	**2**	**7, 8**
3.	Abnormal events (**2-4**)	**3**	**1, 4, 5**
4.	Major transients (**1-2**)	**2**	**6, 8**
5.	EOPs entered/requiring substantive actions (**1-2**)	**2**	**5, 6**
6.	EOP contingencies requiring substantive actions (**0-2**)	**1**	**8**
7.	Critical tasks (**2-3**)	**2**	**5, 8**

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 1
Event Description: Respond to CRD Flow Control Valve failed closed [**Trigger 1**]		
Initiation: Following shift turnover, or as directed by the Lead Examiner.		
Cues: Annunciator H5c, CRD HIGH TEMP; DRIVE WATER FLOW, COOLING WATER FLOW, CLG WTR/REACTOR ΔP, & DRIVE WTR/REACTOR ΔP go downscale		

Time	Position	Applicant's Actions or Behavior
	ATC	• Responds to annunciator H5c, CRD HIGH TEMP, and abnormal CRD indications. • Reports abnormal CRD indications. • Reports the CRD FCV (NC30A) indicates closed. • Directs the EO to investigate the failed CRD FCV [**ROLE PLAY 1**]. • Enters ABN-6, Control Rod Malfunctions, section 13, Flow Control Valve NC-30A/B Fails Closed. • Places CRD FCV NC30B in service IAW procedure 302.1, section 6.3.3. o Places the CRD FLOW CONTROLLER in MAN. o Directs the EO to open the standby FCV inlet/outlet valves [**ROLE PLAY 2**]. o Directs the EO to place the 4-Way Valve in position to supply both controllers [**ROLE PLAY 3**]. o Places the CRD FLOW CONTROL VALVES switch to the B position. o Directs the EO to place the 4-Way Valve in position to supply the in-service controller [**ROLE PLAY 4**]. o Verifies normal CRD indications. o Places the CRD FLOW CONTROLLER in AUTO. o Directs the EO to close the failed FCV inlet/outlet valves [**ROLE PLAY 5**]. • Reports the standby CRD FCV is in service and indications are normal.
	BOP	• Announces entry into ABN-6, Control Rod Malfunctions, due to CRD FCV NC30A failing closed. • May check CRD Temperatures on Panel 8R and report there

		are several control rods with high temperatures.
	SRO	• Directs entry into ABN-6, Control Rod Malfunctions, due to CRD FCV NC30A failing closed. • Directs swapping CRD FCVs IAW procedure 302.1, section 6.3.3. • Notifies the SM/WWM about the failed CRD FCV.
ROLE PLAY	1. When/if asked as the EO to investigate the in-service CRD FCV (NC30A), report that it is closed, was leaking air badly, and that you have isolated the air supply to the valve. 2. (Step 6.3.3.1.1.2.b) When/if asked as the EO to open the standby CRD FCV inlet/outlet valves, insert **Trigger 3** and report the valves OPEN (V-15-18, V-15-19). 3. (Step 6.3.3.1.1.3) When/if asked as the EO to place the 4-Way Valve in position to supply both controllers, state it is in the position to supply both controller (**NO** booth actions are required). 4. (Step 6.3.3.1.1.5) When/if asked as the EO to place the 4-Way Valve in position to supply the in-service controller state it is in the position to supply NC30B (**NO** booth actions are required). 5. (Step 6.3.3.1.1.8.a) When/if asked as the EO to close the failed FCV inlet/outlet valves, state the valves are closed (**Insert LOA-CRD009 and LOA-CRD010 to 0**) (closes V-15-16, V-15-17).	
Terminus:	CRD FCV NC30B is in service and CRD parameters indicate normal.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 2
Event Description: Respond to a leak in Isolation Condenser Shell A [**Trigger 5**]		
Initiation: CRD FCV NC30B is in service and CRD parameters indicate normal, or as directed by the Lead Examiner.		
Cues: Annunciator C6a, SHELL A LVL HI/LO; ISOL CONDENSER A LEVEL indicates lower than normal		

Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to annunciator C6a, SHELL A LVL HI/LO. o Reports Isolation Condenser shell level and trend. o Restores shell water level IAW procedure 307, Isolation Condenser System, section 7.3.1, using Demineralized Water. ▪ Records initial shell water level on Attachment 307-15 ▪ Opens V-11-36 on Panel 5F/6F. ▪ Verifies annunciator K6d is received. ▪ Commences filling isolation condenser until shell level indicates between 7.3 and 7.7 feet. o After shell level makeup has been initiated, reports Isolation Condenser Shell level is not rising. o May direct the EO to investigate Isolation Condenser A. **[ROLE PLAY]**
ROLE PLAY: When asked as the EO to investigate, report IC-A shell level is 6.6 ft. and slowly lowering. There is water on the floor under the ICs, the water is contained, and no equipment is affected.		
		o If directed to isolate Isolation Condenser A, places the following switches in CLOSE: ▪ AC V-14-30 (steam) ▪ DC V-14-31 (steam) ▪ DC V-14-34 (condensate return) ▪ AC V-14-36 (condensate return)
	SRO	• Declares Isolation Condenser A inoperable and applies Tech Spec 3.8.B, C.

		○ The shell side of each condenser shall contain a minimum water volume of 22,730 gallons. If the minimum volume cannot be maintained or if a source of makeup water is not available to the condenser, the condenser shall be considered inoperable. ○ If one isolation condenser becomes inoperable during the run mode the reactor may remain in operation for a period not to exceed 7 days provided the motor operated isolation and condensate makeup valves in the operable isolation condenser are verified daily to be operable. • Notifies SM/WWM about Isolation Condenser A. • May direct the BOP to isolate Isolation Condenser A.
Terminus:	Isolation Condenser A is declared inoperable and the SRO has applied Tech Specs.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 3
Event Description: Condensate Pump A experiences high amps requiring a rapid power reduction and the securing of the Condensate Pump [**Trigger 7**].		
Initiation: Isolation Condenser A is declared inoperable and the SRO has applied Tech Specs., or as directed by the Lead Examiner		
Cues: Annunciator K2b, CONDENSATE PUMP A OL alarms; Condensate Pump A current indication rises		

Time	Position	Applicant's Actions or Behavior
	BOP	• Responds to K2b, PUMP A OL and Condensate Pump A high amps. o May have the Turbine Building EO investigate Condensate Pump A [**ROLE PLAY 1**]. o Verifies pump amps > 160 amps and rising. o Reports the RAP requires a Rapid Power Reduction IAW ABN-17, Feedwater System Abnormal Conditions. • Following the rapid power reduction (at the direction of the SRO), trips the A Condensate Pump [**ROLE PLAY 2**].

BOOTH ACTIONS

ROLE PLAY 1: If requested to investigate Condensate Pump A, report there is a loud noise and an acrid odor coming from Condensate Pump A's motor. No smoke or fire is observed.

	SRO	• Directs the ATC to perform a rapid power reduction to < 70% Reactor Power. • Directs the Condensate Pump A be tripped or secured. • Informs the SM/WWM about Condensate Pump A failure.
	ATC	• Performs a rapid power reduction to < 70% power and verifies feed pump suction pressure is > 60 psig and steady. • Announces entry into ABN-17 (may be performed by BOP).

Terminus:	Reactor power is < 70% and Condensate Pump A is secured.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 4
Event Description: Respond to Recirculation Pump D total seal failure [**Trigger 9**].		
Initiation: Reactor power is < 70% and Condensate Pump A is secured, or as directed by the Lead Examiner.		
Cues: Rising unidentified leak rate; Recirculation Pump D seal indications are trending downscale; Drywell Pressure and Temperature slowly rising		

Time	Position	Applicant's Actions or Behavior
	BOP	• Recognizes and reports Recirculation Pump D seal indications are trending downscale and unidentified leak rate rising. • Enters ABN-2 and performs actions for a Total Seal Failure for Recirculation Pump D. o Stops the affected recirculation pump. o Closes the following Valves for the affected loop: ▪ Pump DISCHARGE valve. ▪ Pump SUCTION valve. ▪ Pump DISCHARGE BYPASS valve. o Vents the Drywell in accordance with 312.11 if required. o Verifies that the core is operating at less than the MAPRAT limits specified in Procedure 202.1-5. o Directs the Racking-out of MG-Set motor breaker of the affected recirculation pump IAW Procedure 337, Section 7.0. o Tags the MG-Set Motor breaker for the affected recirculation pump IAW Procedure OP-MA-109-101. o Informs US to refer to Technical Specifications 3.3.F.2.a and 3.3.F.2.b. o Refers to OP-AA-106-101, Significant Event Reporting.
	ATC	• Reports Drywell Pressure and Temperature are rising. • Announces entry into ABN-2
	SRO	• Directs entry into ABN-2 • Refer to Technical Specifications 3.3.F.2.a and 3.3.F.2.b. for

		Recirculation Loop Operability. Determines that the reactor may remain in operation with ONE isolated recirculation loop. • Informs SM/WWM
Terminus:	Recirculation Loop D is isolated and the SRO has referred to Tech Specs.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 5
Event Description: Respond to a multiple rod drift [**Trigger 11**]		
Initiation: Recirculation Loop D is isolated and the SRO has referred to Tech Specs, or as directed by the Lead Examiner		
Cues: Annunciator H6a, ROD DRIFT; Indications of multiple control rods drifting into the core		

Time	Position	Applicant's Actions or Behavior
	ATC	• Responds to annunciator H6a, ROD DRIFT. • Recognizes/reports multiple control rods drifting and intention to manually scram. • Manually scrams the reactor IAW ABN-1, Reactor Scram o Depresses both MANUAL SCRAM pushbuttons o Places the REACTOR MODE SELECTOR switch in SHUTDOWN o Verifies all control rods are fully inserted o Reports that all 'Immediate scram actions are complete o Inserts SRMs o Inserts IRMs • Notifies Chemistry to sample Reactor Coolant for activity • Monitors Off-Gas activity and Main Steam Line radiation levels • Informs US to refer to Tech Spec section 3.2, Reactor Coolant • Maintains RPV pressure (approximately) 800 – 1000 psig using the Turbine Bypass Valves (may be performed by BOP) • If an RPV isolation occurred (due to reaching RPV Lo-Lo Level post scram), directs the Crew to maintain RPV pressure (approximately) 800 – 1000 psig using the Isolation Condensers (SP-11) and/or EMRVs (SP-12) (may be performed by BOP)
CRITICAL TASK 1		

CRITICAL TASK 1	SRO	• Directs the ATC to enter ABN-6, Control Rod Malfunctions • Directs the ATC to manually scram the reactor IAW ABN-1, Reactor Scram • Directs entry into RPV Control – No ATWS o Directs the Crew to maintain RPV water level 138" – 175" if MSIVs are open, or 138" – 160" using SP2 (Cond/FW) and/or SP3 (CRD) o Directs the Crew to maintain RPV pressure (approximately) 800 – 1000 psig using Turbine Bypass Valves, the Isolation Condensers (SP-11) and/or EMRVs (SP-12)
	BOP	• Controls RPV water level as directed following the scram o Reports entry into RPV Control – No ATWS on low RPV water level o When RPV level begins to rise following the scram, then performs the following: o Trips 2 Feed Pumps with their control switches o Places all MFRVs in MANUAL o Closes all MFRVs o Directs the EO to close CRD Supply Water Valve to Charging Water Header valve V-15-52 [**ROLE PLAY**]
ROLE PLAY: As the EO directed to close CRD Supply Water Valve to Charging Water Header valve V-15-52, insert Trigger 13. Report when complete.		
		o Enters SP-2 (Cond/FW) when directed o Controls RPV water level using the following as necessary: o Feedwater Regulating valves o Main Feed Regulating Valve (MFRV) Block valves o Feedwater Low Flow valves o Heater Bank Outlet Isolation valves o Feedwater and Condensate pumps o Performs SP-1 as directed o Makes plant announcement for reactor scram

Terminus:	The reactor is scrammed, and RPV water level and pressure are under control.

Notes/Comments

Op-Test No.: 10-1 NRC Scenario No.: NRC Sim 4 Event No.: 6/7 Event Description: Respond to a minor Torus Leak requiring entry into Primary Containment Control, Core Spray System 2 suction valves mechanically seized [**Trigger 15**].		
Initiation: The reactor is scrammed, and RPV water level and pressure are under control, or as directed by the Lead Examiner.		
Cues: Torus water level trending down; Annunciator C5e, TORUS LEVEL HI/LO		
Time	Position	Applicant's Actions or Behavior
ROLE PLAY: 3 minutes after inserting Trigger 15, call the control room as the Radwaste Operator and report the 1-7 Sump Hi Level alarm is in.		
	Crew	• Responds to Torus water level trending down and annunciator C5e, TORUS LEVEL HI/LO. • Dispatches Equipment Operators to investigate reactor building corner rooms for water [**ROLE PLAY**].
ROLE PLAY: 3 minutes after requesting the Equipment Operators to investigate the reactor building corner rooms for water, report there is no water in the corner rooms themselves but water noise can be heard coming from inside the water tight doors in the NE corner room.		
		• Performs actions of SP-37 to makeup to the Torus with Core Spray System 1. o If Core Spray actuating signals are present, overrides the Core Spray initiation logic. o Confirms Core Spray System 1 Main and Booster Pumps are stopped. o Closes Core Spray System 1 suction valves V-20-3 and V-20-32. **NOTE: These valves are mechanically seized.** • Informs the SRO V-20-3 and V-20-32 will not close and Core Spray System 1 is not available for Torus makeup. • Performs actions of SP-37 to makeup to the Torus with Core Spray System 2. o If Core Spray actuating signals are present, overrides the Core Spray initiation logic.

		○ Confirms Core Spray System 2 Main and Booster pumps are stopped. ○ Closes the Core Spray System 2 suction valves V-20-4 and V-20-33. ○ Confirms closed Parallel Isolation Valves V-20-21 and V-20-41. ○ Requests the Equipment Operator to open the breakers for Core Spray Parallel Isolation Valves V-20-21 and V-20-41 [**ROLE PLAY**].
ROLE PLAY: When requested to open the breakers for V-20-21 and V-20-41 (step 3.3.4 of SP-37), insert **Trigger 17**. Report the breakers for V-20-21 and V-20-41 are open (or that step 3.3.4 of SP-37 is complete).		
		○ Requests the Equipment Operator place the breakers for Core Spray Pump Suction Valves V-20-4 and V-20-33 in OFF [**ROLE PLAY**].
ROLE PLAY: When requested to place the breakers for Core Spray Pump Suction Valves V-20-4 and V-20-33 in OFF (step 3.3.4.1 of SP-37), insert **Trigger 19**. Report the breakers for V-20-4 and V-20-33 are in OFF (or step 3.3.4.1 is complete).		
		○ Requests the Equipment Operator unlock and open the CST supply valves V-20-1, V-20-2, and V-20-35 [**ROLE PLAY**].
ROLE PLAY: When requested to unlock and open CST supply valves V-20-1, V-20-2, and V-20-35 (step 3.3.4.2 of SP-37), insert **Trigger 21**. Report CST supply valves V-20-1, V-20-2, and V-20-35 are unlocked and open (or step 3.3.4.2 is complete).		
		○ Starts Core Spray System 2 Main Pump B or D [**ROLE PLAY**]
ROLE PLAY: If requested to verify all personnel are standing clear of Core Spray Main Pump B or D, report all personnel are clear of the pump. If requested to verify proper operation (or good start) of Core Spray Main Pump B or D, report that there was a good start on Core Spray Main Pump B or D.		
		○ Requests the Equipment Operator place the breaker for the Test Flow Return Valve V-20-26 in the ON position

		and Open V-20-26 [**ROLE PLAY**].
ROLE PLAY: When requested to place the breaker for the Test Flow Return Valve V-20-26 in the ON position and Open V-20-26 (step 3.3.6 and 3.3.7 of SP-37), insert **Trigger 23**. Report that the breaker for the Test Flow Return Valve V-20-26 in the ON position and V-20-26 in open (or step 3.3.6 and 3.3.7 are complete).		
	SRO	• Directs entry into the Primary Containment Control EOP. • Directs the crew perform SP-37 to make-up to the Torus with the CST via the Core Spray System
Terminus:	SP-37 is complete and Core Spray System 2 is making up to the Torus.	

Notes/Comments

Op-Test No.: 10-1 NRC	Scenario No.: NRC Sim 4	Event No.: 8
Event Description: Respond to a Torus leak increase requiring the crew to Emergency Depressurize [**Change severity of MAL-PCN007 to 20000**].		
Initiation: SP-37 is complete and Core Spray System 2 is making up to the Torus, or as directed by the Lead Examiner.		
Cues: Torus leak rises beyond the makeup capacity of Core Spray System 2 that was lined up to makeup to the Torus IAW SP-37.		
Time	Position	Applicant's Actions or Behavior
	Crew	• Recognizes Torus leak rises beyond the makeup capacity of Core Spray System 2 that was lined up to makeup to the Torus IAW SP-37. • May Anticipate Emergency Depressurization with Turbine Bypass Valves or Isolation Condensers. • Performs Emergency Depressurization – No ATWS EOP. o Places ROPS in BYPASS when directed. o Places all EMRV switches to MAN. • Secures Core Spray IAW SP-10 as directed.
CRITICAL TASK 2		
	SRO	• May direct Anticipating Emergency Depressurization. • Directs entry into Emergency Depressurization – No ATWS EOP. o Directs ROPS bypassed. o Verifies Torus water level > 90". o Directs RO to manually open all EMRVs. o Directs securing Core Spray IAW SP-10 if not required for adequate core cooling.
CRITICAL TASK 2		
Terminus:	All EMRVs are OPEN and Emergency Depressurization has been commenced.	

Notes/Comments

Procedures Used

Event	Procedures	√
1	• RAP-H5c • ABN-6 • 302.1	
2	• RAP-6C8 • 307, section 7 and Attachment 307-15 • TS 3.8	
3	• RAP-K2b • ABN-17	
4	• ABN-2	
5	• ABN-6	
6/7/8	• RAP-C5e • RPV Control – no ATWS • PCC EOP • SP-37 • SP-2 • SP-3 • ED no ATWS	

Simulator Setup

1. Reset to IC-115
2. Place a tag on Dilution Pump #2

Event	Trigger	Malfunction
N/A	**Preset →**	LOA-CWS043 to RACKED OUT • Racks out the breaker for Dilution Pump #2
1	**T1 →**	MAL-CRD001A to 0 • This closes CRD FCV NC30A
	T3 →	LOA-CRD012 to 1 LOA-CRD011 to 1 • This opens the alternate FCV NC30B inlet/outlet valves.
2	**T5 →**	ICH-ICS001A from 7.2' to 6.8' over a 2-minute ramp • This will cause IC A shell water level indication to lower to 7' over a 2-minute period. Note that this malfunction set to lower to 6.8' will give an indication on Panel 1F/2F of 7'.
3	**T7 →**	IND-CFW018 from 160 to 200 over a 3-minute ramp • This makes Condensate Pump A amp meter read 160 amps and trend toward 200 amps. • **NOTE**: This malfunction will automatically delete when Condensate Pump A is tripped.

	T7 →	ANN-K-2B to ON • This makes Condensate Pump A overload annunciator (PUMP B OL) alarm.
	Preset →	Insert the following Event Trigger (1) and Command (2) on Trigger 25: 1) hwx04o087g 2) DOR IND-CFW018 • This will DELETE the malfunctions for high current on the 'A' Condensate Pump when the crew trips the pump.
4	**T9** →	MAL-RCP003D to 100% over 15 minutes • This inputs a failure of Recirculation Pump D's inner seal. MAL-RCP004D to 100% over 15 minutes • This inputs a failure of Recirculation Pump D's outer seal.
5	**T11** →	MAL-CRD006_1835, _3451, and _4207 • This will cause Control Rods 18-35, 35-51, and 42-07 to drift into the core.
	T13 →	LOA-CRD024 to 0 • This will close CRD Bypass V-15-52
6/7/8	**Preset** →	VLV-CSS001 to MECH SZ VLV-CSS009 to MECH SZ • This will mechanically seize Core Spray System 1 suction valves V-20-3 and V-20-32.

	Preset →	Insert the following Event Trigger on Trigger 15: hwx03i271n.lt.1 • This activates Trigger 15 when the Reactor Mode switch is taken out of RUN
	T15 →	MAL-PCN007 to 4000 • This will cause a Torus bottom leak. **NOTE:** When Core Spray System 2 is placed in service to make-up to the Torus, raise MAL-PCN007 to 20000.
	T17 →	LOA-CSS014 to TRUE • Racks out the breaker for Core Spray System 2 Parallel isolation valve V-20-21
	T17 →	LOA-CSS027 to TRUE • Racks out the breaker for Core Spray System 2 Parallel isolation valve V-20-41
	T19 →	VLV-CSS002 to CNT FUSE VLV-CSS010 to CNT FUSE • Places the Core Spray Pump suction valves V-20-4 and V-20-33 in OFF.
	T21 →	LOA-CSS001 to 1
	T21 →	LOA-CSS002 to 1
	T21 →	LOA-CSS023 to 1 • Opens CST supply valves V-20-1, V-20-2, and V-20-35.
	T23 →	LOA-CSS019 to FALSE • Places the breaker for the Test Flow

	T23 →	Return Valve V-20-26 in ON. LOA-CSS018 to 100 • This manually opens Test Flow Return Valve V-20-26.

Shift Turnover

Current plant conditions:

- The plant is at rated power
- Dilution Pump 2 is tagged out of service

Shift Activities

- No shift activities are scheduled