James A. Fitzpatrick
JOB PERFORMANCE MEASURE

RO	NRC 20-1 RO COO1	TASK TITLE: Perform Post Accident Monitoring Instrument
APPL. TO	JPM NUMBER	

NRC K/A SYSTEM NUMBER: 2.1.45 (4.3)

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ____________________

JPM Completion Perform

Location: Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

RO	NRC 20-1 RO COO1	TASK TITLE: Perform Post Accident Monitoring Instrument
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-40N, POST ACCIDENT MONITORING (PAM) INSTRUMENT CHANNEL CHECK

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Provide the candidate with a working copy of the correct portions of ST-40N (attachments 2 and 3). Fill out all readings except:
   a. Attachment 2 page 3
   b. Top 2 readings on attachment 2 page 4
   c. Attachment 3 page 1 Panel 09-3 section
B. Ensure a complete copy of ST-40N is also available for the candidate to review if necessary.
C. Ensure the simulator is reset to a stable IC (IC-213).
D. Ensure Fuel Zone 02-3LI-91 on Panel 09-3 is overridden to 150".
E. Ensure the following valves are open:
   a. 10MOV-166A
   b. 10MOV-166B
   c. 10MOV-167A
   d. 10MOV-167B

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

- ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, is in progress.
- Another Operator has completed portions of the ST.

TASK TITLE: Perform Post Accident Monitoring Instrument Channel Check

VII. INITIATING CUE

Inform the candidate, "Complete the remaining portions of ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, Attachments 2 and 3."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of ST-40N	Obtains a controlled copy of ST-40N. **EVALUATOR:** Provide working copy.	SAT / UNSAT
2.	Records the remaining Panel 09-3 readings on ST-40N Attachment 2.	Records data per provided key. **Evaluator Note:** All recorded data is allowed to deviate from the key by a reasonable amount.	**CRITICAL STEP** SAT / UNSAT
3.	Checks the remaining Panel 09-3 valve positions on ST-40N Attachment 3.	Records data per provided key.	**CRITICAL STEP** SAT / UNSAT
4.	Identifies 02-3LI-91 is reading too low.	Identifies 02-3LI-91 is reading too low. **Evaluator Note:** This may be indicated on ST-40N Attachment 2 with a red circle around the associated readings.	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Perform Post Accident Monitoring Instrument Channel Check

	STEP	STANDARD	EVALUATION / COMMENT
5.	Identifies RHR heat exchanger vents are open instead of closed.	Identifies RHR heat exchanger vents (10MOV-166A, 166B, 167A, 167B) are open instead of closed. **Evaluator Note:** This may be indicated on ST-40N Attachment 3 with a red circle around the associated spots for check marks.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: Readings taken for ST-40N Attachments 2 and 3 on Panel 09-3. Out-of-spec value identified for 02-3LI-91. Abnormal position identified for 10MOV-166A, 166B, 167A, 167B.

HANDOUT

- **ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, is in progress.**
- **Anther Operator has completed portions of the ST.**

Complete the remaining portions of ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, Attachments 2 and 3.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 S/RO COO2	TASK TITLE:	Manually Compute Average Drywell Air Temperature
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.1.20 (4.6/4.6)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x

OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________

JPM Completion Perform

Location: Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 S/RO COO2	TASK TITLE:	Manually Compute Average Drywell Air Temperature
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-40C, Computer Out Of Service Surveillance

III. TOOLS AND EQUIPMENT

A. Calculator

IV. SET UP REQUIREMENTS

A. Prepare a copy of ST-40C completed up to step 8.3.4.

B. Provide Drywell temperature readings on ST-40C Attachment 3 to match selected portions of the Evaluator Key provided in this JPM pre-filled in.

C. Student handout only has RTD used "x'd" and the READING column filled in.

D. Student handout does NOT include SUM OF WEIGHTING FACTORS, CORRECTED VALUES, SUM OF CORRECTED VALUES and AVERAGE DRYWELL TEMPERATURE calculation.

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. EPIC is out of service.

B. ST-40C, Computer Out Of Service Surveillance, is complete up to step 8.3.4.

VII. INITIATING CUE

Inform the candidate, "Complete ST-40C section 8.3, Drywell Temperature Check."

EVALUATOR: Provide the candidate with the in-progress copy of ST-40C.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Determine average drywell temperature by performing the following using Attachment 3: Multiply the recorded READING by the WEIGHTING FACTOR and record the result under CORRECTED VALUE.	Calculates and records CORRECTED VALUES on Attachment 3 (see provided key).	SAT / UNSAT
2.	IF the READING for any DRYWELL AREA was recorded as "none" on Attachment 3, THEN perform the following: Record the sum of all the used WEIGHTING FACTORS in the SUM OF USED WEIGHTING FACTORS block.	Calculates and records sum of all used WEIGHTING FACTORS on Attachment 3 (see provided key).	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
3.	Record the sum of all the CORRECTED VALUES in the SUM OF CORRECTED VALUES block.	Calculates and records sum of all CORRECTED VALUES on Attachment 3 (see provided key).	SAT / UNSAT
4.	IF no DRYWELL AREAS had a READING recorded as "none", THEN perform the following...	Determines one Drywell Area reading was "none" and determines this step is n\a.	SAT / UNSAT
5.	Determine average drywell temperature by dividing the SUM OF CORRECTED VALUES by the SUM OF USED WEIGHTING FACTORS and record the result as the AVERAGE DRYWELL TEMPERATURE on Attachment 3.	Calculates and records average Drywell temperature on Attachment 3 (see provided key).	**CRITICAL STEP** SAT / UNSAT
6.	Determine average drywell temperature is above the allowable value of 135°F.	Reports average drywell temperature is above the allowable value of 135°F.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
	EVALUATOR: For RO candidates, terminate the task at this point. **EVALUATOR**: For SRO candidates, provides the following additional conditions and cue (and associated handout): Initial Conditions: The plant is operating at 100% power. You are the CRS. Initiating Cue: Assess the results of ST-40C Step 8.3. Determine any required actions. Report your findings in the space below.		
6.	**SRO Only** Assesses Acceptance Criteria 10.1.4.	Determines Acceptance Criteria 10.1.4 is NOT met.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	**SRO Only** Determines required actions.	Determines surveillance is unsatisfactory. **(NOT Critical)** Determines need to notify Operations Manager (or alternate). **(NOT Critical)** Determines IR must be written. **(NOT Critical)** Determines EOP-PC, Primary Containment Control, must be entered. **(Critical)** Determines Technical Specification 3.6.1.5 Condition A must be entered (requires restoring to within limit within 8 hours). **(Critical)** **EVALUATOR NOTE:** Only the portions of this step marked **(Critical)** are deemed critical for grading.	**CRITICAL STEP** SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: Drywell Temperature check performed in accordance with ST-40C Section 8.3 with calculation revealing Drywell temperature is high out of allowable value.

EVALUATOR'S KEY

COMPUTER OUT OF SERVICE SURVEILLANCE ST-40C

ATTACHMENT 3

DRYWELL TEMPERATURE CALCULATION Page 1 of 1

DRYWELL AREA	RTD 16-1RTD-	READING	WEIGHTING FACTOR	CORRECTED VALUE
0	(_) 101 (_) 120	None	~~0.1133~~	0
1	(_) 102 (x) 119	135	0.1652	22.302
2	(_) 103 (x) 104	137	0.3560	48.772
3	(_) 105 (x) 106	136	0.1313	17.8568
4	(_) 107 (x) 108	133	0.0470	6.251
5	(_) 109 (x) 117	133	0.0534	7.1022
6	(_) 110 (x) 111	134	0.0715	9.581
7	(_) 112 (x) 118	135	0.0621	8.3835
SUM OF USED WEIGHTING FACTORS:			0.8865	
SUM OF CORRECTED VALUES:				120.2485
AVERAGE DRYWELL TEMPERATURE:				135.6441 ≤135°F

EVALUATOR NOTE: The candidate may round the CORRECTED VALUE entries. An acceptable range for the SUM OF CORRECTED VALUES is 119.9-120.4°F. An acceptable range for the AVERAGE DRYWELL TEMPERATURE is 135.2-135.8°F.

EVALUATOR'S KEY

HANDOUT

Initial Conditions:

- **EPIC is out of service.**
- **ST-40C, Computer Out Of Service Surveillance, is complete up to step 8.3.4.**

Initiating Cue:

Complete ST-40C section 8.3, Drywell Temperature Check.

ATTACHMENT 3

DRYWELL TEMPERATURE CALCULATION Page 1 of 1

DRYWELL AREA	RTD 16-1RTD-	READING	WEIGHTING FACTOR	CORRECTED VALUE
0	(_) 101 (_) 120	None	~~0.1133~~	0
1	(_) 102 (x) 119	135	0.1652	
2	(_) 103 (x) 104	137	0.3560	
3	(_) 105 (x) 106	136	0.1313	
4	(_) 107 (x) 108	133	0.0470	
5	(_) 109 (x) 117	133	0.0534	
6	(_) 110 (x) 111	134	0.0715	
7	(_) 112 (x) 118	135	0.0621	
SUM OF USED WEIGHTING FACTORS:				
SUM OF CORRECTED VALUES:				
AVERAGE DRYWELL TEMPERATURE:				≤135°F

ADDITIONAL SRO ONLY HANDOUT

Initial Conditions:

- **The plant is operating at 100% power.**
- **You are the CRS.**

Initiating Cue:

Assess the results of ST-40C Step 8.3.

Determine any required actions.

Report your findings in the space below.

James A Fitzpatrick
JOB PERFORMANCE MEASURE

RO	NRC 20-1 RO EC	TASK TITLE:	Determine Tagout Boundary For RBCLC Pump Work
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.2.13 (4.1)

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

CANDIDATE NAME: _____

JPM Completion: Perform

Location: Classroom

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes

ERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

RO	NRC 20-1 RO EC	TASK TITLE:	Determine Tagout Boundary For RBCLC Pump Work
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-AA-109-101, Protective and Caution Tagging
B. ESK-6AC
C. FM-15A
D. OP-40, Reactor Building Closed Loop Cooling

III. TOOLS AND EQUIPMENT

- None

IV. SET UP REQUIREMENTS

A. Ensure copies of the following references are available:
   - OP-AA-109-101
   - ESK-6AC
   - FM-15A
   - OP-40

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. Maintenance is required on Reactor Building Closed Loop Cooling Pump A, 15P-2A.
B. The maintenance activity will be intrusive to the pump impeller casing.
C. eSOMS is unavailable.

VII. INITIATING CUE

Inform the candidate, "Generate a tagout isolation boundary for RBCLC Pump A, 15P-2A, maintenance. Record the devices to be tagged and their required positions on the worksheet provided."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain required references.	Obtains and utilizes required references, which may include: • OP-AA-109-101 • FM-15A • ESK-6AC • OP-40 **EVALUATOR NOTE:** Component names and Required Position terminology may vary slightly from what is written below due to unavailability of eSOMS.	SAT / UNSAT
2.	Determine RBCLC Pump A control switch tagged position.	Identifies RBCLC Pump A control switch should be tagged in the pull-to-lock position.	SAT / UNSAT
3.	Determine RBCLC Pump A breaker tagged position.	Identifies RBCLC Pump A breaker (71-11316) should be tagged in the racked out or removed position.	**CRITICAL STEP** SAT / UNSAT
4.	Determines RBCLC Pump A discharge isolation valve tagged position.	Identifies RBCLC Pump A discharge isolation valve (15RBC-2A) should be tagged in the closed position.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	Determines RBCLC Pump A suction isolation valve tagged position.	Identifies RBCLC Pump A suction isolation valve (15RBC-40A) should be tagged in the closed position.	**CRITICAL STEP** SAT / UNSAT
6.	Determines RBCLC Pump A venting path tagged position.	Identifies one or more of the following paths for venting RBCLC Pump A casing: • RBCLC Pump A Discharge Pressure Indicator Root Valve (15RBC-645) open with either the Test/Drain valve open or the Pressure Indicator removed/uninstalled. • RBCLC Pump A Suction Pressure Indicator Root Valve (15RBC-607) open with the Pressure Indicator removed/uninstalled. • RBCLC Pump A Casing Vent Valve open.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: Tagout isolation boundary for RBCLC pump A identified.

HANDOUT

- **Maintenance is required on Reactor Building Closed Loop Cooling Pump A, 15P-2A.**
- **The maintenance activity will be intrusive to the pump impeller casing.**
- **eSOMS is unavailable.**

Generate a tagout isolation boundary for RBCLC Pump A, 15P-2A, maintenance.

Record the components to be tagged and their required positions on the worksheet provided.

WORKSHEET

Component	Required Position

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

RO	NRC 20-1 RO EP	TASK TITLE:	Conduct Emergency Announcement and Site Evacuation
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.4.43 (3.2)

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: x

OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________

JPM Completion Perform

Location: Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ________ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

RO	NRC 20-1 RO EP	TASK TITLE:	Conduct Emergency Announcement and Site Evacuation
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EP-AA-112-F-09, Emergency Public Address Announcements
B. OP-63, Intra-Plant Communications System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Provide the candidate with a working copy of EP-AA-112-F-09 with appropriate check boxes selected (see JPM Attachment for example).

V. EVALUATOR NOTES

A. None

vI. TASK CONDITIONS

- A Site Area Emergency has been declared due to high Drywell radiation.
- This is the first emergency declared.

VII. INITIATING CUE

Inform the candidate, "The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency (with a Site Evacuation) per EP-AA-112-F-09."

Provide the candidate with a working copy of EP-AA-112-F-09 with appropriate check boxes selected (see JPM Attachment for example).

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of EP-AA-112-F-09.	Obtains a controlled copy of EP-AA-112-F-09. **EVALUATOR:** Provide working copy.	SAT / UNSAT
2.	SOUND the Station alarm.	Depresses STA alarm pushbutton.	**CRITICAL STEP** SAT / UNSAT
3.	WHEN alarm is to be terminated, perform one of the following: a. Depress OFF pushbutton. OR b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	SAT / UNSAT

TASK TITLE: Conduct Emergency Announcement And Site Evacuation

	STEP	STANDARD	EVALUATION / COMMENT
4.	Make announcement for Site Area Emergency a Site Evacuation.	"Attention, attention all personnel. This is a drill. The station is experiencing a Site Area Emergency due to high Drywell radiation. All Emergency Response Organization personnel are to report immediately to their Emergency Response Facilities. Attention all personnel, attention all personnel – A Site Evacuation has been ordered. All personnel not assigned emergency response duties shall evacuate the Site immediately and report to home. Emergency Response Organization personnel shall ensure they are accounted for at their assigned Emergency Response Facility."	**CRITICAL STEP** SAT / UNSAT
5.	SOUND the Evacuation alarm.	Depresses EVAC alarm pushbutton.	**CRITICAL STEP** SAT / UNSAT
6.	WHEN alarm is to be terminated, perform one of the following: a. Depress OFF pushbutton. OR b. Actuate and hold INSTR toggle switch. (Alarm will re-actuate when INSTR toggle switch is released.)	Depresses OFF pushbutton. OR Actuates and holds INSTR toggle switch.	SAT / UNSAT

TASK TITLE: Conduct Emergency Announcement And Site Evacuation

	STEP	STANDARD	EVALUATION / COMMENT
7.	Completes remainder of announcement.	"Personnel in protective clothing should leave the area using normal processes and procedures. I repeat this is a drill."	SAT / UNSAT
8.	Repeats SOUNDING the Station alarm.	Depresses STA alarm pushbutton.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: The announcement for Site Area Emergency with Site Evacuation is made per EP-AA-112-F-09. The Station Alarm and Evacuation Alarm are sounded and secured.

ATTACHMENT

EMERGENCY PUBLIC ADDRESS ANNOUNCEMENTS

INSTRUCTIONS: Check boxes to select appropriate announcement, consider crossing out rows / words not used. **If** an announcement has been made to perform accountability or evacuation for a lower classification, **then** it does **not** have to be repeated when classification changes.

NOTE: Peach Bottom and Limerick may use Attachment 1 for Site Specific Evacuation Alarm guidance.

1. **If** applicable to the station, **then SOUND** the Station alarm:

   ☒ Station Alarm

   ☐ N/A

Classification Announcement

2. **PROVIDE** short description of the reason for classification/announcement:

   a. *"Attention. Attention all personnel. This is ☒ a Drill ☐ an Actual Event ☒ The Station ☐ Unit ____ is experiencing:*

   ☐ *An Unusual Event due to:* _____"

   ☐ *An Alert due to:* _____"

   ☒ *A Site Area Emergency due to:* high Drywell radiation"

   ☐ *A General Emergency due to:* _____"

   ☐ _____ (other reasons)

   b. **If** this is the **first** announcement for an Alert or Higher *(or if staffing is desired at an Unusual Event)* **then ADD**:

   ☒ *"All Emergency Response Organization personnel are to report immediately to their Emergency Response Facilities."*

Security Announcement

3. For a credible insider security threat, **ADD**:

   ☐ *"Secure all non-essential activities in vital areas, two person line of sight vital area access rules are now in effect."*

Local Area Evacuation

4. For Local Area Evacuation (due to a hazard), **ADD**:

   ☐ *"An evacuation of: (Unit ___)* _____ *is being ordered due to:* _____. *All personnel are to leave the area and stay clear of: (Unit ____)* _____ *and report to:* _____"

Onsite Assembly and Accountability (prior to Site Area Evacuation)

5. For Onsite Assembly and Accountability, **ADD:**

   ☐ Attention All Personnel, Attention All Personnel – *"All personnel are to report to your designated assembly area, log in and remain at this location until further notice for accountability."*

EMERGENCY PUBLIC ADDRESS ANNOUNCEMENTS

Site Evacuation, Remote Assembly, and Accountability

6. For a Site Evacuation,
   a. **ADD** to the announcement:
      X *Attention All Personnel, Attention All Personnel – A Site Evacuation has been ordered. All personnel not assigned emergency response duties shall evacuate the Site immediately and report to:*
      ☐ *the designated Remote Assembly Area located at* _____
      (provide location).

      OR

      X *home"*

      Emergency Response Organization personnel shall ensure they are accounted for at their assigned Emergency Response Facility.

NOTE: Peach Bottom and Limerick may use Attachment 1 for Site Specific Evacuation Alarm guidance.

   b. **If** applicable to the station,
      X **SOUND** the Evacuation Alarm (for 2 minutes for MW Stations)

Radiological Announcement

7. For personnel in contaminated areas **ADD**:
   ☐ *"Personnel in protective clothing should:*
      X a. Leave the area using normal processes and procedures."

      OR

      ☐ b. Leave the area immediately and obtain Radiation Protection assistance at the Access Control Point."

8. For a Release in Progress **ADD**:

   ☐ "Attention ALL personnel, attention ALL personnel. A radioactive release is in progress from _____.
   (Brief description)

   ☐ *"There is no eating, drinking or smoking allowed until further notice."*

   ☐ *"Eating, drinking and smoking are now allowed."*

Conclusion

9. Always add:
   X *"I repeat this is a drill."*
   ☐ *"I repeat this is an actual event."*

10. **REPEAT** the alarm and entire announcement so that all specified steps of this specific announcement are made (2) two times.

HANDOUT

- **A Site Area Emergency has been declared due to high Drywell radiation.**
- **This is the first emergency declared.**

The Shift Manager directs you to sound the Station Alarm and make the announcement for a Site Area Emergency (with a Site Evacuation) per EP-AA-112-F-09.

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

SRO	NRC 20-1 SRO COO1	TASK TITLE:	Review Post Accident Monitoring Instrument
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.1.45 (4.3)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________________

JPM Completion Perform

Location: Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

SRO	NRC 20-1 SRO COO1	TASK TITLE: Review Post Accident Monitoring Instrument
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. ST-40N, POST ACCIDENT MONITORING (PAM) INSTRUMENT CHANNEL CHECK
B. Technical Specifications

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Provide the candidate with a completed working copy of ST-40N. Fill out all readings correctly except:
   a. Fuel Zone 02-3LI-91 on Panel 09-3 is recorded as 150.
   b. The following valves are not checked off:
      i. 10MOV-166A
      ii. 10MOV-166B
      iii. 10MOV-167A
      iv. 10MOV-167B

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

- The plant is operating at 100% power.
- ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, has been completed.

TASK TITLE: Perform Post Accident Monitoring Instrument Channel Check

VII. INITIATING CUE

Inform the candidate, "Perform the Management SRO Review for ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of ST-40N	Obtains a controlled copy of ST-40N. **EVALUATOR:** Provide working copy.	SAT / UNSAT
2.	Identifies 02-3LI-91 is reading too low.	Identifies 02-3LI-91 is reading too low. **Evaluator Cue:** When candidate identifies the issue with 02-3LI-91, direct them to determine and report the Technical Specification implications of this issue.	**CRITICAL STEP** SAT / UNSAT
3.	Identifies RHR heat exchanger vents have not been properly verified.	Identifies RHR heat exchanger vents (10MOV-166A, 166B, 167A, 167B) have not been properly verified. **Evaluator Cue:** When candidate identifies the issue with the RHR heat exchanger vents, report that an operator has now verified these valves closed.	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Perform Post Accident Monitoring Instrument Channel Check

	STEP	STANDARD	EVALUATION / COMMENT
4.	Determines Technical Specification implications of 02-3LI-91 reading low.	Determines Technical Specification 3.3.3.1 Condition A requires restoring 02-3LI-91 to operable within 30 days (function 2).	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: Management SRO Review for ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, completed. Out-of-spec value identified for 02-3LI-91. Lack of verification for 10MOV-166A, 166B, 167A, 167B identified. Technical Specification implications of 02-3LI-91 reading low identified.

HANDOUT

- **The plant is operating at 100% power.**
- **ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check, has been completed.**

Perform the Management SRO Review for ST-40N, Post Accident Monitoring (PAM) Instrument Channel Check.

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

SRO	NRC 20-1 SRO EC	TASK TITLE:	Perform Technical Specification Evaluation and LCO Tracking for Inoperable Turbine Bypass Valves
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.2.22 (4.7)

ESTIMATED COMPLETION TIME: 20 Minutes

SUBMITTED: x

OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________________

JPM Completion: Perform

Location: Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

____
SIGNATURE/PRINTED

SRO	NRC 20-1 SRO EC	TASK TITLE:	Perform Technical Specification Evaluation and LCO Tracking for Inoperable Turbine Bypass Valves
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. TS 3.7.6
B. COLR
C. AP-12.08

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Ensure sufficient copies of the referenced documents are available.
B. Ensure the candidate has access to normally available electronic procedure databases and search tools. All computer access must be monitored by an examiner or proctor to ensure access remains limited to official plant databases and documents (no personal study notes, email, etc.).

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

- The plant is operating at 28% power.
- An inspection determines that Turbine Bypass Valves 3 and 4 are NOT capable of opening if needed.

SRO **NRC 20-1 SRO EC**

TASK TITLE: Perform Technical Specification Evaluation and LCO Tracking for Inoperable Turbine Bypass Valves

VII. INITIATING CUE

Inform the candidate of the following:

"(Operator's name), determine the Technical Specification implications of the failure of Turbine Bypass Valves 3 and 4, and describe the required tracking of this failure. Report your findings on the provided worksheet."

EXAMINER NOTE: Provide Handout and Worksheet.

*** - CRITICAL STEP**

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain applicable reference documents	Obtains a copy of applicable reference documents: • ST-21Q • Tech Specs • COLR • AP-12.08 **EVALUATOR:** Ensure sufficient copies of these documents are available.	SAT / UNSAT

TASK TITLE: Perform Technical Specification Evaluation and LCO Tracking for Inoperable Turbine Bypass Valves

	STEP	STANDARD	EVALUATION / COMMENT
*2.	Determine the Technical Specification implications of the failure of Turbine Bypass Valves (TBVs) 3 and 4.	Determines the Main Turbine Bypass System is inoperable (<3 of 4 TBVs operable). **Evaluator Note:** Technical Specification 3.7.6 bases state that 3 of the 4 TBVs must be operable for the Main Turbine Bypass System to be operable. With TBVs 3 and 4 unable to be opened, they are inoperable, and only 2 of 4 TBVs remain operable. **Evaluator Note:** This may indicated by the candidate by saying LCO 3.7.6 is NOT met, or similar. Follow up questions may be necessary to clarify what is written on the worksheet.	**CRITICAL STEP** SAT / UNSAT
		Determines Technical Specification 3.7.6 Condition A must be entered (2 hours to restore operability or apply MCPR and LHGR penalties). **Evaluator Note:** The candidate is not required to determine the exact MCPR and LHGR penalties for the scope of this JPM. If they do research these penalties, COLR table 4-2 gives the MCPR penalties (TBVOOS with Reactor power between 25 and 29% power) and table 5-4 gives the LHGR penalties (TBVOOS with Reactor power between 25 and 29% power).	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Perform Technical Specification Evaluation and LCO Tracking for Inoperable Turbine Bypass Valves

	STEP	STANDARD	EVALUATION / COMMENT
*3.	Identify the administrative procedure that describes the means of tracking the Technical Specification implications of these failures.	Identifies AP-12.08, LCO Tracking and Safety Function Determination Program, is applicable for tracking this failure.	**CRITICAL STEP** SAT / UNSAT
*4.	Identify the mechanism(s) used to track the Technical Specification implications of these failures (i.e. form(s), database(s), etc.).	Identifies one or both of the following options: • LCO Tracking Record (in eSOMS) • LCO Tracking Sheet (AP-12.08 Attachment 1) **Evaluator Note:** The candidate also may identify the need to initiate notifications, an IR, etc., but these are not specifically required to be identified by this JPM.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task standard: Determines the Technical Specification implications of the failure of Turbine Bypass Valves 3 and 4. Describes the required tracking of this failure.

HANDOUT

- **The plant is operating at 28% power.**
- **An inspection determines that Turbine Bypass Valves 3 and 4 are NOT capable of opening if needed.**

Determine the Technical Specification implications of the failure of Turbine Bypass Valves 3 and 4, and describe the required tracking of these failures.

Report your findings on the provided worksheet.

Worksheet

Determine the Technical Specification implications of the failure of Turbine Bypass Valves 3 and 4.

Identify the administrative procedure that describes the means of tracking the Technical Specification implications of these failures.

Identify the mechanism(s) used to track the Technical Specification implications of these failures (i.e. form(s), database(s), etc.).

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

SRO	NRC 20-1 SRO RC	TASK TITLE:	Determine Visitor RCA Access Requirements
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 2.3.4 (3.7)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________________

JPM Completion Perform

Location: Classroom

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

SRO	NRC 20-1 SRO RC	TASK TITLE:	Determine Visitor RCA Access Requirements
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. NISP-RP-102

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Ensure sufficient copies of NISP-RP-102 are available.

B. Ensure the candidate has access to a computer to search EDMS and HPI if desired. The examiner shall monitor computer use to ensure unauthorized references are not accessed.

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. A Technical Representative from the Viking Valve Corporation Engineering Department is arriving tomorrow to perform visual inspections in preparation for replacing the Main Condenser Pit Foam Fire Suppression System.

B. Dose rates in the associated work area range from 0 – 2 mr/hr.

C. The inspection is expected to take approximately 3 hours.

D. The Operations Director has designated you as the visitor sponsor and visitor escort.

E. Security arrangements have already been completed for visitor access.

F. The individual has never been exposed to or monitored for Occupational Radiation Exposure.

G. The individual will NOT be trained as a Radworker and will NOT perform any work.

VII. INITIATING CUE

Inform the candidate, "Complete the provided worksheet to identify the requirements for allowing the individual to enter the RCA as a visitor."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of the correct procedure.	Obtains a copy of NISP-RP-102, as required.	SAT / UNSAT
2.	Identify the procedure(s) and applicable section(s) that contain the requirements for allowing the individual to enter the RCA as a visitor.	Identifies NISP-RP-102 and the following sections: • Section 6.1 • Attachment 1 (not critical) • Attachment 2 (not critical) **EVALUATOR NOTE:** See attached key to assist in grading the candidate's completed worksheet. The candidate's responses do not need to match the key exactly, but should include all major information.	**CRITICAL STEP** SAT / UNSAT
3.	Identify the individual's dose limit(s).	Identifies the following: • Expected to receive less than 10 mrem for the duration of the activity • Shall not receive more than 100 mrem annually per facility	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
4.	Identify any restrictions on the types of areas the individual may enter.	Identifies that the individual shall not enter into any: • posted contamination areas • high radiation areas • locked high radiation areas • very high radiation areas • airborne radioactivity areas	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: Procedural requirements for allowing an individual to access the RCA as a visitor are identified, including procedure and sections, dose limitations, and restrictions on areas that can be entered.

1. Identify the procedure(s) and applicable section(s) that contain the requirements for allowing the individual to enter the RCA as a visitor:

NISP-RP-102 and the following sections:

- **Section 6.1**
- **Attachment 1 (not critical)**
- **Attachment 2 (not critical)**

2. Identify the individual's dose limit(s):

- **Expected to receive less than 10 mrem for the duration of the activity**
- **Shall not receive more than 100 mrem annually per facility**

3. Identify any restrictions on the types of areas the individual may enter:

The individual shall not enter into any:

- **posted contamination areas**
- **high radiation areas**
- **locked high radiation areas**
- **very high radiation areas**
- **airborne radioactivity areas**

HANDOUT

- A Technical Representative from the Viking Valve Corporation Engineering Department is arriving tomorrow to perform visual inspections in preparation for replacing the Main Condenser Pit Foam Fire Suppression System.
- Dose rates in the associated work area range from 0 – 2 mr/hr.
- The inspection is expected to take approximately 3 hours.
- The Operations Director has designated you as the visitor sponsor and visitor escort.
- Security arrangements have already been completed for visitor access.
- The individual has never been exposed to or monitored for Occupational Radiation Exposure.
- The individual will NOT be trained as a Radworker and will NOT perform any work.

Complete the provided worksheet to identify the requirements for allowing the individual to enter the RCA as a visitor.

Note: EDMS / HPI access is available during the performance of this JPM.

WORKSHEET

1. Identify the procedure(s) and applicable section(s) that contain the requirements for allowing the individual to enter the RCA as a visitor:
2. Identify the individual's dose limit(s):
3. Identify any restrictions on the types of areas the individual may enter:

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

SRO (APPL. TO) | NRC 20-1 SRO EP (JPM NUMBER) | TASK TITLE: Determine Emergency Classification and Initiate Event Notification (Time Critical)

NRC K/A SYSTEM NUMBER: 2.4.40 (4.5)

ESTIMATED COMPLETION TIME: 30 Minutes

SUBMITTED: _____ OPERATIONS REVIEW: _____

APPROVED: _____

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CANDIDATE NAME: _____

JPM Completion: Perform

Location: Classroom

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

SRO	NRC 20-1 SRO EP	TASK TITLE:	Determine Emergency Classification and Initiate Event Notification (Time Critical)
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EP-AA-1014
B. EP-AA-111
C. EP-AA-114
D. EP-CE-114

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Ensure sufficient copies of the referenced documents are available, including extra copies of the Part 1 notification form.

V. EVALUATOR NOTES

A. None

SRO	NRC 20-1 SRO EP	TASK TITLE:	Determine Emergency Classification and Initiate Event Notification (Time Critical)
APPL. TO	JPM NUMBER		

VI. TASK CONDITIONS

A. The plant has been shutdown since noon yesterday.
B. Reactor pressure is 0 psig.
C. Reactor coolant temperature is 175°F.
D. Lines 3 and 4 de-energize.
E. EDGs A and C fail to start.
F. EDGs B and D start and re-energize the 10600 bus.
G. DC Bus B de-energizes.
H. DC Bus A voltage is 102 VDC.
I. All of these conditions persist for 30 minutes.
J. The following conditions exist now:
   - NO elevated radiation levels have been detected.
   - 200' elevation wind speed is 10 mph from 190°.
   - 30' elevation wind speed is 5 mph from 190°.
   - Stability class is E.
   - Nine Mile Point Units 1 and 2 and both operating at 100% power.

TASK TITLE: Determine Emergency Classification and Initiate Event Notification (Time Critical)

VII. INITIATING CUE

Inform the candidate of the following:

"Classify the event and complete the Part 1 Notification Fact Sheet. This is a time critical JPM. Your time clock starts once you acknowledge this task."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain applicable reference documents	Obtains a copy of applicable reference documents, as needed: • EP-AA-1014 • EAL Matrix • EP-CE-114-100-F-05 • EP-AA-114-F-08 • EP-CE-111-F-05 **EVALUATOR:** Ensure sufficient copies of these documents are available.	SAT / UNSAT
2.	Classify the event	Classifies the event as Unusual Event CU3 within 15 minutes of JPM start time JPM start time: _____ Time of classification: _____ Time difference: _____	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Determine Emergency Classification and Initiate Event Notification (Time Critical)

	STEP	STANDARD	EVALUATION / COMMENT
3.	Completes Part 1 Notification Fact Sheet.	Completes Part 1 Notification Fact Sheet per attached key within 15 minutes of classification time Time of classification: _____ Time of offsite notification: _____ Time difference: _____ **EVALUATOR NOTES:** • Only item 3, 4, 5, 6, and 7 of the Part 1 Notification Fact Sheet are deemed critical for this JPM. • These items are individually graded in the JPM steps below. • All other items are non-critical. • See attached key.	**CRITICAL STEP** SAT / UNSAT
4.	Completes Part 1 Notification step 3	Indicates "Unusual Event" in Part 1 Notification step 3 (see attached key)	**CRITICAL STEP** SAT / UNSAT
5.	Completes Part 1 Notification step 4	Records today's date and time of declaration in Part 1 Notification step 4 (see attached key)	**CRITICAL STEP** SAT / UNSAT
6.	Completes Part 1 Notification step 5	Indicates "No Release" in Part 1 Notification step 5 (see attached key)	**CRITICAL STEP** SAT / UNSAT

TASK TITLE: Determine Emergency Classification and Initiate Event Notification (Time Critical)

	STEP	STANDARD	EVALUATION / COMMENT
7.	Completes Part 1 Notification step 6	Indicates "No need for protective actions outside the site boundary" in Part 1 Notification step 6 (see attached key)	**CRITICAL STEP** SAT / UNSAT
8.	Completes Part 1 Notification step 7	Indicates EAL # "CU3" in Part 1 Notification step 7 (see attached key)	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: The emergency event is classified and the Part 1 Notification form is filled out correctly.

EVALUATOR'S KEY

Step Change	Step	
		"This is to report an Incident at _____ standby for roll call." ☐ **Nine Mile Point Unit 1** ☐ **Nine Mile Point Unit 2** ☐ **James A. Fitzpatrick**
		☐ NY State | ☐ Oswego County | ☐ James A. Fitzpatrick | ☐ NMP Unit 1 | ☐ NMP Unit 2 | **Notification #**
	1.	**This message is being transmitted on:** _____ (Date) at _____ (Time) via: **A.** RECS **B.** Other
	2.	**This is:** **A.** An actual emergency **(B.)** An Exercise
	3.	**The Emergency Classification / Condition is:** **(A.)** Unusual Event **B.** Alert **C.** Site Area Emergency **D.** General Emergency **E.** Recovery **F.** Termination
	4.	**This Emergency Classification / Condition was declared on:** (date) Today's date at (time) Now
	5.	**Release of radioactive materials due to the classified event:** **(A.)** No radiological release in-progress **B.** AIRBORNE radiological release in-progress **C.** LIQUID radiological release in-progress **D.** Radiological release TERMINATED
	6.	**The following Protective Actions are recommended to be implemented as soon as practical:** **(A.)** No need for protective actions outside the site boundary **B. EVACUATE and IMPLEMENT** the KI Plan for the following ERPAs **and** all remaining ERPAs monitor the Emergency Alert System. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 **C. SHELTER and IMPLEMENT** the KI Plan for the following ERPAs **and** all remaining ERPAs monitor the Emergency Alert System. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29
	7.	☐ NMP U1 / ☐ NMP U2 / X JAF — **EAL #** CU3 — **Brief event description and other significant information:** (Include any Security Related EAL's if applicable) (optional brief description)
	8.	**Reactor Status:** NMP U1: **(A.)** Operating **B.** Shutdown (date): _____ at (time): _____ NMP U2: **(A.)** Operating **B.** Shutdown (date): _____ at (time): _____ JAF: **A.** Operating **(B.)** Shutdown (date): Yesterday's date at (time): 1200
	9.	**A. Elevated wind speed** 10 miles/hr | **B. Ground wind speed** 5 miles/hr
	10.	**A. Elevated wind direction** (from) 190 deg | **B. Ground wind direction** (from) 190 deg
	11.	**A. Elevated Stability Class:** A B C D **(E)** F G | **B. Ground Stability Class:** A B C D **(E)** F G

EVALUATOR'S KEY

HANDOUT

Initial Conditions:

- The plant has been shutdown since noon yesterday.
- All control rods are in.
- Reactor pressure is 0 psig.
- Reactor coolant temperature is 175°F.
- Lines 3 and 4 de-energize.
- EDGs A and C fail to start.
- EDGs B and D start and re-energize the 10600 bus.
- DC Bus B de-energizes.
- DC Bus A voltage is 102 VDC.
- All of these conditions persist for 30 minutes.
- The following conditions exist now:
    - NO elevated radiation levels have been detected.
    - 200' elevation wind speed is 10 mph from 190°.
    - 30' elevation wind speed is 5 mph from 190°.
    - Stability class is E.
    - Nine Mile Point Units 1 and 2 and both operating at 100% power.

Initiating Cue:

Classify the event and complete the Part 1 Notification Fact Sheet.

This is a time critical JPM.

Your time clock starts once you acknowledge this task.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 A	TASK TITLE:	Manually Isolate Reactor Building Ventilation, Low Reactor Building D/P (Alt Path)
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 261000 A4.06 (3.3/3.6)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME:

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: TIME TO COMPLETE: Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO	NRC 20-1 A	TASK TITLE: SGT Initiation Verification (Alt Path)
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-51A, Reactor Building Ventilation and Cooling System
B. OP-20, Standby Gas Treatment System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset to a power operating IC (IC-211).
B. Ensure the following simulator programming:
- Malfunction HV03, Secondary Containment Leakage, 50%
- Malfunction HV03, Secondary Containment Leakage, 10%, on event trigger 2
- Event Trigger 2: zdi11sgta04(3)==1&zdi11sgtb04(3)==1
- Preset: set ypo:rp02:a=1
- Preset: set ypo:rp02:b=1

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. A radioactive steam leak has developed in the Reactor Building.

VII. INITIATING CUE

Inform the candidate, "Manually isolate the Reactor Building per OP-51A section G.1 and OP-20 Posted Attachment 3."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-51A.	Obtains a controlled copy of OP-51A. Refers to section G.1.	SAT / UNSAT
2.	Ensure SBGT is running per OP-20.	Obtains a controlled copy of OP-20. Refers to section D.1 or D.2 or Posted Attachment 3. **EVALUATOR ROLE PLAY:** If asked which train of SBGT to start, tell the candidate that either train is fine. **EVALUATOR NOTE:** The subsequent JPM steps are written for use of OP-20 sections D.1 or D.2. If the Posted Attachment is used, slightly different verifications will be performed, but there will be no impact on Critical Steps.	SAT / UNSAT
3.	Ensure open ABOVE(BELOW) EL 369' SUCT 01-125MOV-11(12)	Opens ABOVE(BELOW) EL 369' SUCT 01-125MOV-11(12) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
4.	Ensure open TRAIN A(B) INLET 01-125MOV-14A(B)	Opens TRAIN A(B) INLET 01-125MOV-14A(B) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	Verify the following: • White light for AIR HTR 01-125E-5A(B) is on	Observes white light for AIR HTR 01-125E-5A(B) is on.	SAT / UNSAT
6.	• Red light for AIR HTR 01-125E-5A(B) is on	Observes red light for AIR HTR 01-125E-5A(B) is on.	SAT / UNSAT
7.	• TRAIN A(B) CLG VLV 01-125MOV-100A(B) is closed	Observes TRAIN A(B) CLG VLV 01-125MOV-100A(B) green light on, red light off.	SAT / UNSAT
8.	• FN DISCH 01-125MOV-15A(B) is open	Observes FN DISCH 01-125MOV-15A(B) green light is off, red light is on.	SAT / UNSAT
9.	• TRAIN A(B) FN 01-125FN-1A(B) is running	Observes TRAIN A(B) FN 01-125FN-1A(B) green light is off, red light is on.	SAT / UNSAT
10.	IF SGT Train B(A) is shutdown, THEN perform the following: • Verify open TRAIN B(A) CLG VLV 01-125MOV-100B(A).	Observes TRAIN B(A) CLG VLV 01-125MOV-100B(A) green light off, red light on.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
11.	• Verify flow rate is 6000 to 5800 scfm on SGT FLOW 01-125FI-106A.	Observes SGT flow rate.	SAT / UNSAT
12.	IF standby gas treatment is being placed in service to support any of the following...	Determines step is N/A.	SAT / UNSAT
13.	IF RB DIFF PRESS 01-125DPI-100A or B indicates less negative than -0.25 inches water, THEN ensure SGT Train B is in service per Subsection D.2.	Observes Reactor Building D/P is more negative than -0.25 inches water. **EVALUATOR NOTE:** Reactor Building D/P is SAT at this point in the JPM because normal Reactor Building ventilation has not yet been isolated. Once the Reactor Building isolation is performed, Reactor Building D/P will be UNSAT. **EVALUATOR NOTE:** The candidate will proceed back to OP-51A step G.1.2.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
14.	Depress the following pushbuttons at panel 09-75: • RB VENT ISOL A • RB VENT ISOL B	Depresses RB VENT ISOL A pushbutton. **EVALUATOR NOTE:** The candidate may hold the pushbutton for a while as the isolation occurs.	**CRITICAL STEP** SAT / UNSAT
		Depresses RB VENT ISOL B pushbutton. **EVALUATOR NOTE:** The candidate may hold the pushbutton for a while as the isolation occurs. **EVALUATOR NOTE:** If the candidate notices low Reactor Building D/P early, they may skip JPM steps 15-27 and proceed directly to JPM step 28. In this case, it is acceptable to terminate the JPM without completing JPM steps 15-27. **EVALUATOR NOTE:** The verifications below may be done in any order.	**CRITICAL STEP** SAT / UNSAT
15.	Verify isolation per Subsection G.2.	Proceeds to OP-51A section G.2.	SAT / UNSAT
16.	Verify the following: • INBD SUPP ISOL 66AOV-100A – Closed	Observes 66AOV-100A green light on, red light off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
17.	• OUTBD EXH ISOL 66AOV-101A – Closed	Observes 66AOV-101A green light on, red light off.	SAT / UNSAT
18.	• BELOW EL 369' RECIRC 66AOD-105 – Open	Observes 66AOD-105 green light off, red light on.	SAT / UNSAT
19.	• EL 369' RECIRC 66AOD-108 – Open	Observes 66AOD-108 green light off, red light on.	SAT / UNSAT
20.	• OUTBD SUPP ISOL 66AOV-100B – Closed	Observes 66AOV-100B green light on, red light off.	SAT / UNSAT
21.	• INBD EXH ISOL 66AOV-101B – Closed	Observes 66AOV-101B green light on, red light off.	SAT / UNSAT
22.	• SUPP FN 66FN-5A, 5B, 5C (two of three) – On	Observes 2 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-5A • 66FN-5B • 66FN-5C	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
23.	• BELOW EL 369' EXH FN 66FN-12A OR 66FN-12B – On	Observes 1 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-12A • 66FN-12B	SAT / UNSAT
24.	• EL 369' EXH FN 66FN-13A AND 66FN-13B – Off	Observes 66FN-13A green light on, red light off. Observes 66FN-13B green light on, red light off.	SAT / UNSAT
25.	• TK EXH FN 66FN-35 – Off	Observes 66FN-35 green light on, red light off.	SAT / UNSAT
26.	• CRESC SUPP FN 66FN-26A OR 66FN-26B – On	Observes 1 of the following fans have green light off, red light on and 1 of the following fans has green light on, red light off: • 66FN-26A • 66FN-26B	SAT / UNSAT
27.	• Standby Gas Treatment – Running per OP-20	Determines SBGT is still running per OP-20.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
Evaluator Note: The alternate path becomes apparent to the candidate at this point in the JPM (once normal Reactor Building Ventilation is isolated and the procedure requires them to observe Reactor Building D/P.			
28.	• Reactor Building to atmosphere differential pressure – (-)0.25 to (-) 2.50 in. water gauge	Observes Reactor Building to atmosphere differential pressure is less negative than 0.25 in. water gauge. **EVALUATOR NOTE:** The candidate will now proceed to OP-20 section D.1 or D.2 to start the second train of SBGT.	SAT / UNSAT
29.	Ensure open BELOW(ABOVE) EL 369' SUCT 01-125MOV-12(11).	Opens BELOW(ABOVE) EL 369' SUCT 01-125MOV-12(11) by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
30.	Ensure open TRAIN B(A) INLET 01-125MOV-14B(A).	Opens TRAIN B(A) INLET 01-125MOV-14B(A) by rotating control switch clockwise to open. **EVALUATOR CUE:** Another operator has verified proper response of Standby Gas Treatment Train B(A).	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: The Reactor Building is isolated and Reactor Building differential pressure is restored with two trains of Standby Gas Treatment in service.

HANDOUT

- **A radioactive steam leak has developed in the Reactor Building.**

Manually isolate the Reactor Building per OP-51A section G.1 and OP-20 Posted Attachment 3.

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 B	TASK TITLE: Emergency Main Turbine Shutdown
APPL. TO	JPM NUMBER	

NRC K/A SYSTEM NUMBER: 245000 A4.06 (2.7/2.6)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME:

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: TIME TO COMPLETE: Minutes

ERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 B	TASK TITLE:	Emergency Main Turbine Shutdown
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-9, Main Turbine

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Initialize simulator to an IC with the Main Turbine running at near 1800 rpm immediately following a Reactor scram from <25% power, without a Turbine trip present (IC-212).

B. Place the EPIC alarm list on Slave 1 and screen TGB on Slave 2.

EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. A small oil leak has developed from the Main Turbine.

B. The Reactor has just been scrammed from approximately 20% power.

C. The Main Turbine is running at 1800 rpm.

D. The Main Generator is NOT synchronized to the grid.

VII. INITIATING CUE

Perform an emergency Main Turbine shutdown per OP-9 section G.3.

*** - CRITICAL STEP**

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-9, Main Turbine, and proceeds to section G.3.	Obtains a controlled copy of OP-9 and proceeds to section G.3.	SAT \ UNSAT
*2.	Perform any of the following to trip turbine: a. Depress both TRIP pushbuttons at panel 09-5 (preferred). b. Rotate (counter clockwise), then pull red MANUAL TRIP handle at front standard.	Depresses both TRIP pushbuttons at panel 09-5. **Evaluator cue:** If the candidate dispatches an operator to trip the Main Turbine at the front standard, tell them that the operator cannot access the front standard due to the oil leak.	**CRITICAL STEP** SAT \ UNSAT
3.	Verify the following valves close: • TCV 1, 2, 3, and 4 • TSV 1, 2, 3, and 4 • ISV 1, 2, 3, and 4 • IV 1, 2, 3, and 4	Observes downscale meter indication for: • TCV 1, 2, 3, and 4 • TSV 1, 2, 3, and 4 • ISV 1, 2, 3, and 4 • IV 1, 2, 3, and 4	SAT \ UNSAT
4.	Verify main turbine bypass valves open as necessary to control RPV pressure at pressure setpoint.	Observes main turbine bypass valves controlling Reactor pressure (at least one valve partially open periodically, as seen by green light off, red or white light on)	SAT \ UNSAT
5.	Verify open the following 345 KV breakers: • GEN BKR 10042 • GEN BKR 10052	Observes green light on, red light off for: • GEN BKR 10042 • GEN BKR 10052	SAT \ UNSAT
6.	Verify open 345 KV MOD 10031.	Observes green light on, red light off for 345 KV MOD 10031.	SAT \ UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	Ensure EXCITER FIELD BKR is tripped.	Observes green light on, red light off for EXCITER FIELD BKR. **EVALUATOR NOTE:** There is a discrepancy between the procedure and the component label. The component is now labeled EXCITATION 71-1-1 EXCN 02 due to a recent plant mod.	SAT \ UNSAT
8.	Verify closed the following FDWTR HTR STRING NON RETURN VLVS: 31NRV-112A 31NRV-112B 31NRV-113A 31NRV-113B 31NRV-114A 31NRV-114B 31NRV-115A 31NRV-115B 31NRV-116A 31NRV-116B	Observes green light on, red light off for the following valves (panel 09-4): 31NRV-112A 31NRV-112B 31NRV-113A 31NRV-113B 31NRV-114A 31NRV-114B 31NRV-115A 31NRV-115B 31NRV-116A 31NRV-116B	SAT \ UNSAT
9.	Verify open the following FDWTR HTR STRING EXTRACT BYP VLVS: 41FCV-111A 41FCV-111B 41FCV-112A 41FCV-112B 41FCV-113A 41FCV-113B 41FCV-114A 41FCV-114B 41FCV-116A 41FCV-116B	Observes green light off, red light on for the following valves (panel 09-4): 41FCV-111A 41FCV-111B 41FCV-112A 41FCV-112B 41FCV-113A 41FCV-113B 41FCV-114A 41FCV-114B 41FCV-116A 41FCV-116B	SAT \ UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
10.	Ensure the following lube oil pumps are running: • TURN GEAR OIL PMP 94P-1 • MTR SUCT PMP 94P-5	Observes green light off, red light on for the following pumps: • TURN GEAR OIL PMP 94P-1 • MTR SUCT PMP 94P-5 **Evaluator Note:** 94P-1 and 94P-5 will eventually auto-start. If the candidate gets to this step before the pump(s) start, they may manually start the pumps.	SAT \ UNSAT
11.	IF an emergency condition requires the turbine be brought to rest as quickly as possible, THEN perform the following…	Determines step is N/A and moves on in procedure **Evaluator note:** If the candidate asks if it is desired to bring turbine to rest as quickly as possible, tell them that it is NOT desired.	SAT \ UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
*12.	WHEN main turbine speed is approximately 900 rpm, start the following bearing lift pumps: • BRG LIFT PMP 94P-4A • BRG LIFT PMP 94P-4B • BRG LIFT PMP 94P-4C • BRG LIFT PMP 94P-4D • BRG LIFT PMP 94P-4E • BRG LIFT PMP 94P-4F	Observes Main Turbine speed. **Evaluator cue:** If desired, tell the operator that time compression is in effect and that Main Turbine speed is now 900 rpm.	SAT \ UNSAT
		When Main Turbine speed is approximately 900 rpm (by indication or cue), starts the following bearing lift pumps by rotating control switches clockwise to START: • BRG LIFT PMP 94P-4A • BRG LIFT PMP 94P-4B • BRG LIFT PMP 94P-4C • BRG LIFT PMP 94P-4D • BRG LIFT PMP 94P-4E • BRG LIFT PMP 94P-4F	**CRITICAL STEP** SAT \ UNSAT
	EVALUATOR Terminate the task at this point.		

Task Standard: Main Turbine is tripped. Bearing Lift pumps are started.

Handout

- **A small oil leak has developed from the Main Turbine.**
- **The Reactor has just been scrammed from approximately 20% power.**
- **The Main Turbine is running at 1800 rpm.**
- **The Main Generator is NOT synchronized to the grid.**

Perform an emergency Main Turbine shutdown per OP-9 section G.3.

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

S/RO
APPL. TO

NRC 20-1 C
JPM NUMBER

TASK TITLE: Shutdown EDGs, EDG Phase Overload (Alt Path)

NRC K/A SYSTEM NUMBER: 2640000 A4.04 3.7/3.7

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x

OPERATION REVIEW: x

APPROVED: x

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CANDIDATE NAME: _____

JPM Completion: ( ) Simulated (x) Performed

Location: ( ) Plant (x) Simulator

DATE PERFORMED: _____ TIME TO COMPLETE: ____ Minutes

PERFORMANCE EVALUATION: ( ) Satisfactory ( ) Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: _____
SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO NRC 20-1 C TASK TITLE: Shutdown EDGs, EDG Phase
PPL. TO JPM NUMBER Overload (Alt Path)

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-22, DIESEL GENERATOR EMERGENCY POWER

III. TOOLS AND EQUIPMENT

A. Synchronizing Switch

IV. SET UP REQUIREMENTS

A. Initialize the simulator to IC-213.
B. Ensure EDGs B and D are running and loaded per OP-22 section D.2.
C. Place annunciator "EDG D PHASE OVERLOAD", 09-8-4-30, on Trigger 1 (to be activated automatically when EDG B LOAD BKR 10602 is tripped, with a 10 second delay).
D. Override EDG D GOV switch in the neutral position.

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. EDGs B and D are running per OP-22 section D.2.

VII. INITIATING CUE

Inform the candidate, "Shutdown EDGs B and D per OP-22 section F.2."

NOTE: All controls and indications located on panel 09-8 unless otherwise stated.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of procedure OP-22	Obtains a controlled copy of OP-22. Proceeds to section F.2.	SAT / UNSAT
2.	IF either of the following breakers are open, • BUS 10400 10600 TIE BKR 10614 OR • BUS 10400 10600 TIE BKR 10404 THEN shut down EDG B and D per Subsection G.4.	Observes breakers 10614 and 10404 are closed and proceeds to next step.	SAT / UNSAT
3.	Adjust EDG B GOV to lower EDG B load to approximately 150 kW over 3 to 5 minutes in approximately 800 kW increments.	Adjusts EDG B GOV to lower EDG B load to approximately 150 kW over 3 to 5 minutes in approximately 800 kW increments. **EVALUATOR**: State,"2 minutes have passed", after each load adjustment.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
4.	Trip EDG B LOAD BKR 10602.	Trips EDG B LOAD BKR 10602 by rotating control switch counterclockwise. **SIMULATOR OPERATOR**: After the candidate trips EDG B LOAD BKR 10602, Trigger 1 automatically activates.	**CRITICAL STEP** SAT / UNSAT
5.		**Alternate Path begins here**	
6.	Acknowledges EDG D PHASE OVERLOAD annunciator 09-8-4-30.	Acknowledges EDG D PHASE OVERLOAD annunciator 09-8-4-30. **EVALUATOR NOTE:** If the candidate misses the alarm, direct them to review panel 09-8-4 alarms. **EVALUATOR NOTE:** The candidate may attempt to unload EDG D before tripping the breaker, per OP-22 step F.2.4, but this will be unsuccessful due to a failure of the switch. The candidate will execute guidance in the ARP to trip the load and tie breakers instead.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	Ensure open breakers 10612 and 10604.	Trips Breaker 10612 by rotating control switch counterclockwise.	**CRITICAL STEP** SAT / UNSAT
		Observes Breaker 10604 is open (green light on, red light off).	SAT / UNSAT
8.	Place control switches for 10612 and 10604 in PULL TO LOCK.	Places control switch for 10612 in PULL TO LOCK.	SAT / UNSAT
		Places control switch for 10604 in PULL TO LOCK.	SAT / UNSAT
EVALUATOR: Terminate the task at this point			

Task standard: EDG B unloaded and separated from Bus 10600. EDG D phase overload condition detected. EDG D separated from Bus 10600.

HANDOUT

- **EDGs B and D are running per OP-22 section D.2.**

Shutdown EDGs B and D per OP-22 section F.2

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 D	TASK TITLE:	Reset an RPS Scram with Scram Valve Failure to Close
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 212000 A4.14 (3.8/3.8)

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: x ____________________ OPERATIONS REVIEW: x ____________________

APPROVED: x ____________________

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CANDIDATE NAME: ____________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

RFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 D	TASK TITLE:	Reset an RPS Scram with Scram Valve Failure to Close
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. AOP-1, Reactor Scram, Current Revision

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Initialize the simulator to any full power IC (IC-214).
B. Insert a manual scram by placing the Mode Switch to SHUTDOWN.
C. Ensure ARI is reset.
D. Stabilize RPV level above 177 inches.
E. Manually override the blue scram lights "ON" for control rods 14-39, 30-19, 06-19, 42-07.
F. Verify the blue scram lights for control rods 14-39, 30-19, 06-19, 42-07 are visibly lit.

V. EVALUATOR NOTES

A. The candidate should, at a minimum, observe the change in equipment status light indication when equipment is operated.
B. If simulating this task, then inform the candidate that the conditions of each step need only be properly identified and not actually performed.
C. The candidate should demonstrate proper use of HU tools such as procedure use, self checking, place keeping and three-point communication.

VI. TASK CONDITIONS

A. The Reactor was scrammed 1 hour ago due to a Feedwater malfunction.
B. The scram condition has been identified and cleared.
C. All Reactor scram signals are now clear with the exception of the scram discharge volume high level signal.

VII. INITIATING CUE

Inform the candidate, "Reset the scram per AOP-1."

NOTE: All actions performed at Panel 09-5

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of AOP-1, Reactor Scram.	Obtain a controlled copy of AOP-1. Refers to section F.1.	SAT / UNSAT
2.	IF ARI actuated, THEN reset ARI.	Observes that ARI is reset.	SAT / UNSAT
3.	Verify annunciator 09-5-1-33 MODE SW IN SHUTDOWN TRIP BYPASSED is in alarm.	Observes that the annunciator window for annunciator 09-5-1-33 is in alarm.	SAT / UNSAT
4.	Place the SDIV HI LVL TRIP keylock switch in BYPASS.	Places the SDIV HI LVL TRIP switch in BYPASS. (09-5-1-11 Alarm)	**CRITICAL STEP** SAT / UNSAT
5.	Place RX SCRAM RESET switch to Group 2 & 3, then to 1 & 4, spring return to NORM.	Places the REACTOR SCRAM RESET selector switch, (5A-S5), momentarily to the GP2 and GP3 position then back thru "NORM" to the GP1 and GP4 position then back to "NORM".	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
6.	Verify RPS A and B SCRAM GROUPS 1, 2, 3 and 4 lights are on.	Verifies the scram has been reset by ensuring that the following lights are lit: A. RPS A Scram Groups 1, 2, 3 and 4 on Panel 09-5 B. RPS B Scram Groups 1, 2, 3 and 4 on Panel 09-5	SAT / UNSAT
7.	Verify closed all scram inlet and outlet valves using one or a combination of the following methods: Blue scram lights or local indication.	Recognizes/reports that several control rod scram inlet and outlet valves have failed to close by observing that blue scram lights are lit. **EVALUATOR**: If Candidate asks about local indication, ask Candidate, "which HCU's"? The Candidate should reply: 14-39, 30-19, 06-19, 42-07 Inform Candidate that local indication is consistent with the blue lights, the valves are open.	SAT / UNSAT
8.	IF any scram inlet or outlet valve fails to close, then perform the following: A. Depress the following pushbuttons: • MANUAL SCRAM A • MANUAL SCRAM B	Depresses the both manual scram pushbuttons.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
	B. Investigate cause	States that they would initiate action (condition report, work order request or discussion with supervision) to identify the cause of the scram valves failing to close.	SAT / UNSAT
		EVALUATOR: Terminate the task at this point.	

Task Standard: The Reactor scram is reset. Then, failure of scram valves to close is detected and the Reactor is re-scrammed.

HANDOUT

- **The Reactor was scrammed 1 hour ago due to a Feedwater malfunction.**
- **The scram condition has been identified and cleared.**
- **All Reactor scram signals are now clear with the exception of the scram discharge volume high level signal.**

Reset the scram per AOP-1

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 E	TASK TITLE:	Start HPCI for Injection, Low Bearing Oil Pressure Develops
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 206000 A4.05 (4.4/4.4)

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

ERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 E	TASK TITLE:	Start HPCI for Injection, Low Bearing Oil Pressure Develops
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-15, High Pressure Coolant Injection System

B. ARP 09-3-3-35, HPCI TURB BRG OIL PRESS LO

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Initialize simulator to an IC with the Reactor scrammed and the MSIVs closed (IC-215).

B. Ensure Reactor water level is >126.5" but <177".

C. Ensure Reactor pressure is being controlled 600-900 psig on SRVs.

D. Ensure CRD is running and HPCI is in a standby lineup.

E. Ensure simulator is programmed to insert annunciator 09-3-3-35, HPCI Turb Brg Oil Press Lo, when the 23MOV-19 green light turns off.

F. Ensure simulator is programmed to fail the HPCI auto-start.

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. The plant has scrammed.

B. Reactor water level is approximately 165".

C. Reactor pressure is approximately 850 psig and being controlled by another operator with SRVs.

D. HPCI spuriously isolated.

E. The cause of the isolation has been corrected.

F. OP-15 section G.1 has been completed up to step G.1.10 to restore HPCI to service.

VII. INITIATING CUE

"Start HPCI for injection per OP-15 starting at step G.1.10. Restore and maintain Reactor water level in a band of 180-220."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-15 and proceed to step G.1.10.	Obtains a controlled copy of OP-15 and proceeds to step G.1.10	SAT / UNSAT
2.	IF HPCI operation is desired, THEN perform the following: IF a HPCI auto initiation condition is present, THEN start up HPCI as follows...	Determines a HPCI auto initiation condition is NOT present and continues to next step	SAT / UNSAT
3.	IF a HPCI auto initiation condition is not present, THEN start up HPCI as follows: Depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton.	Depresses INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton	**CRITICAL STEP** SAT / UNSAT
4.	Start HPCI per Section D.	Proceeds to OP-15 section D.1	SAT / UNSAT
5.	Ensure any SGT is running per OP-20.	**Evaluator cue:** Standby Gas Treatment is running and aligned to HPCI per OP-20. Acknowledges evaluator cue	SAT / UNSAT
6.	Ensure open any of the following valves: • HPCI GLAND SEAL SUCT 01-125MOV-13A • HPCI GLAND SEAL SUCT 01-125MOV-13B	Acknowledges evaluator cue	SAT / UNSAT
7.	Verify RPV water level is LESS THAN the high level trip value as indicated on 02-3LI-283D.	Observes Reactor water level is below high level trip value (222.5")	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	IF amber RX HI LVL SIG 23A-DS65 light is on at panel 09-3, THEN reset high water level trip as follows...	Observes amber RX HI LVL SIG 23A-DS65 light is off	SAT / UNSAT
9.	Verify HPCI is lined up to one of the following suction paths: • CST SUCT VLV 23MOV-17 open for suction from CSTs OR • The following valves open for suction from torus: o OUTBD TORUS SUCT VLV 23MOV-57 o INBD TORUS SUCT VLV 23MOV-58	Observes 23MOV-17 is open	SAT / UNSAT
10.	Ensure open OUTBD STM SUPP VLV 23MOV-16.	Opens 23MOV-16 by rotating control switch clockwise to OPEN	**CRITICAL STEP** SAT / UNSAT
11.	Ensure GLAND SEAL CNDSR BLOWER 23-140 is running.	Observes 23P-140 is running	SAT / UNSAT
12.	Ensure open TURB STM SUPP VLV 23MOV-14.	Observes 23MOV-14 is open	SAT / UNSAT
13.	Perform the following steps without unnecessary delay: IF annunciator 09-3-3-28 HPCI TURB TRIP SOLENOID ENERGIZED is in alarm, THEN depress INITIATION SIG/MAN TURB TRIP RESET 23A-S17 pushbutton.	Observes 09-3-3-28 is not in alarm	SAT / UNSAT
14.	IF HPCI turbine is not running, THEN start AUX OIL PMP 23P-150.	Observes 23P-150 is running	SAT / UNSAT
15.	Ensure open INJ VLV 23MOV-19.	Opens 23MOV-19 by rotating control switch clockwise to OPEN	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
	Alternate Path Starts Here The low oil pressure malfunction is inserted when the 23MOV-19 green light goes off. Additional steps in OP-15 may be read / completed based on timing (in gray below).		
16.	Verify the following HPCI parameters: • Flow is approximately 4250 gpm. • Discharge pressure is GREATER THAN RPV pressure.	Observes the following HPCI parameters: • Flow is approximately 4250 gpm. • Discharge pressure is GREATER THAN RPV pressure.	SAT / UNSAT / NA
17.	Ensure closed the following valves: • MIN FLOW VLV 23MOV-25 • STM LINE DRAIN TO RADW 23AOV-42 • STM LINE DRAIN TO RADW 23AOV-43	Observes closed the following valves: • MIN FLOW VLV 23MOV-25 • STM LINE DRAIN TO RADW 23AOV-42 • STM LINE DRAIN TO RADW 23AOV-43	SAT / UNSAT / NA
18.	Restore and maintain Reactor water level in a band of 180-220".	Establishes Reactor water level in a band of 180-220" by adjusting HPCI flow controller.	SAT / UNSAT / NA

	STEP	STANDARD	EVALUATION / COMMENT
19.	Recognize / report annunciator 09-3-3-35, HPCI TURB BRG OIL PRESS LO	Recognize / report annunciator 09-3-3-35, HPCI TURB BRG OIL PRESS LO **Evaluator cue:** If asked to investigate, report that a significant oil leak has developed from HPCI and that the system is abnormally noisy. **Evaluator cue:** If ask how to proceed, as the candidate for a recommendation and then tell them to carry out that recommendation. **Evaluator cue:** If specifically asked if HPCI operation is required by the EOPs, state that it is not required.	SAT / UNSAT
20.	Trip HPCI	Trips HPCI by depressing TURB TRIP 23A-S19 pushbutton	**CRITICAL STEP** SAT / UNSAT
	EVALUATOR Terminate the task at this point.		

Task Standard: HPCI started in injection mode and HPCI then tripped due to low bearing oil pressure.

Handout

- **The plant has scrammed.**
- **Reactor water level is approximately 165".**
- **Reactor pressure is approximately 850 psig and being controlled by another operator with SRVs.**
- **HPCI spuriously isolated.**
- **The cause of the isolation has been corrected.**
- **OP-15 section G.1 has been completed up to step G.1.10 to restore HPCI to service.**

Start HPCI for injection per OP-15 starting at step G.1.10. Restore and maintain Reactor water level in a band of 180-220.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 F	TASK TITLE:	Perform Emergency Rod In Functional Test, Rod Double Notches
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 201002 A4.01 (3.5/3.5)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x ______ OPERATIONS REVIEW: x ______

APPROVED: x ______

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CANDIDATE NAME: ______

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: ______ TIME TO COMPLETE: ______ Minutes

PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 F	TASK TITLE:	Perform Emergency Rod In Functional Test, Rod Double Notches
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-65, Startup and Shutdown Procedure

B. OP-26, Control Rod Drive Manual Control System

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Initialize simulator to a shutdown IC with all control rods inserted (IC-211).

B. Ensure simulator is programmed to have control rod 30-51 double notch to 08 when moving to 06:

- Insert malfunction RD08:30:51 on event 1
- Event Trigger 1: rdreed(4) == 4
- Insert malfunction RD08:30:51 on event 3 delete in 1
- Event Trigger 3: rdreed(4) == 7

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. The plant is shutdown in Mode 4.

B. Preparations are underway for a startup.

VII. INITIATING CUE

Perform the Emergency Rod In Functional Test per OP-65 section G.7. Complete the test using control rod 30-03. Then repeat the test using control rod 30-51.

EVALUATOR NOTE: For this JPM, if the candidate asks for peer checks, provide them with a verbal peer check, agreeing with whatever manipulation they indicate.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-65 and proceed to section G.7.	Obtains a controlled copy of OP-65 and proceeds to section G.7.	SAT / UNSAT
2.	Perform emergency rod in functional test as follows: Depress select pushbutton for any control rod in RWM Group 1 on ROD SEL matrix.	Depresses select pushbutton for control rod 30-03 on ROD SEL matrix.	**CRITICAL STEP** SAT / UNSAT
3.	Verify Annunciator 09-5-2-2 ROD WITHDRAWAL BLOCK is clear.	Observes Annunciator 09-5-2-2 ROD WITHDRAWAL BLOCK is clear.	SAT / UNSAT
4.	Verify white ROD OUT PERM light is on.	Observes white ROD OUT PERM light is on.	SAT / UNSAT
5.	Withdraw selected control rod from position 00 to position 06 per OP-26.	Obtains a controlled copy of OP-26 and proceeds to section E.1. **Evaluator Role Play:** If candidate asks whether to use notch or continuous withdrawal, direct them to use notch withdrawal.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
6.	WHILE withdrawing control rod, perform the following: Monitor the following: • Nuclear instrumentation; To include SRM/IRM meters/recorders, reactor period meters and APRM recorders as appropriate • Control rod position indication on four rod display	Monitors nuclear instrumentation and control rod position indication during rod movement.	SAT / UNSAT
7.	IF control rod withdraws GREATER THAN two notches...	Reads conditional step and moves on in procedure.	SAT / UNSAT
8.	IF control rod double notches...	Reads conditional step and moves on in procedure.	SAT / UNSAT
9.	Ensure ROD SEL PWR switch is in ON.	Observes ROD SEL PWR switch is in ON.	SAT / UNSAT
10.	Ensure control rod to be moved is selected by depressing rod select pushbutton on ROD SEL matrix, if necessary.	Observes control rod is already selected.	SAT / UNSAT
11.	Verify the following: • Select pushbutton is brightly backlit • Control rod indicating light is on (light with coordinates on FULL CORE DISPLAY) • ROD OUT PERM light is on	Observes the following: • Select pushbutton is brightly backlit • Control rod indicating light is on (light with coordinates on FULL CORE DISPLAY) • ROD OUT PERM light is on	SAT / UNSAT
12.	Perform one of the following: IF control rod at position 46...	Reads conditional step and moves on in procedure.	SAT / UNSAT
13.	Single notch as follows: Place ROD MOVEMENT CNTRL switch to OUT NOTCH, spring return to OFF.	Places ROD MOVEMENT CNTRL switch to OUT NOTCH, spring return to OFF.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
14.	Verify control rod latches in the expected even numbered position BEFORE ROD SETTLE light goes off.	Observes control rod settles at even numbered position.	SAT / UNSAT
15.	Verify ROD SETTLE light is off.	Observes ROD SETTLE light is off.	SAT / UNSAT
16.	IF control rod is withdrawn to position 48...	Reads conditional step and moves on in procedure.	SAT / UNSAT
17.	IF additional control rod notch withdrawal is desired, THEN return to Step E.1.5.	Repeats notch withdrawal until control rod is at position 06.	**CRITICAL STEP** SAT / UNSAT
18.	Insert selected control rod from position 06 to position 00 using ROD EMERG IN NOTCH OVERRIDE switch.	Places ROD EMERG IN NOTCH OVERRIDE switch to EMERG ROD IN and moves control rod 30-03 to position 00. **Evaluator Note:** The candidate may take action per ARP 09-5-2-3 to reset the control rod drift annunciator. **Evaluator Note:** The candidate may repeat this step if the control rod is not yet at position 00.	**CRITICAL STEP** SAT / UNSAT
19.	Perform emergency rod in functional test as follows: Depress select pushbutton for any control rod in RWM Group 1 on ROD SEL matrix.	Depresses select pushbutton for control rod 30-51 on ROD SEL matrix.	**CRITICAL STEP** SAT / UNSAT
20.	Verify Annunciator 09-5-2-2 ROD WITHDRAWAL BLOCK is clear.	Observes Annunciator 09-5-2-2 ROD WITHDRAWAL BLOCK is clear.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
21.	Verify white ROD OUT PERM light is on.	Observes white ROD OUT PERM light is on.	SAT / UNSAT
22.	Withdraw selected control rod from position 00 to position 06 per OP-26.	Obtains a controlled copy of OP-26 and proceeds to section E.1. **Evaluator Role Play:** If candidate asks whether to use notch or continuous withdrawal, direct them to use notch withdrawal. **Evaluator Note:** If candidate does not ask and uses continuous withdrawal, that is acceptable and some steps below will be slightly different.	SAT / UNSAT
23.	WHILE withdrawing control rod, perform the following: Monitor the following: • Nuclear instrumentation; To include SRM/IRM meters/recorders, reactor period meters and APRM recorders as appropriate • Control rod position indication on four rod display	Monitors nuclear instrumentation and control rod position indication during rod movement.	SAT / UNSAT
24.	IF control rod withdraws GREATER THAN two notches...	Reads conditional step and moves on in procedure.	SAT / UNSAT
25.	IF control rod double notches...	Reads conditional step and moves on in procedure.	SAT / UNSAT
26.	Ensure ROD SEL PWR switch is in ON.	Observes ROD SEL PWR switch is in ON.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
27.	Ensure control rod to be moved is selected by depressing rod select pushbutton on ROD SEL matrix, if necessary.	Observes control rod is already selected.	SAT / UNSAT
28.	Verify the following: • Select pushbutton is brightly backlit • Control rod indicating light is on (light with coordinates on FULL CORE DISPLAY) • ROD OUT PERM light is on	Observes the following: • Select pushbutton is brightly backlit • Control rod indicating light is on (light with coordinates on FULL CORE DISPLAY) • ROD OUT PERM light is on	SAT / UNSAT
29.	Perform one of the following: IF control rod at position 46...	Reads conditional step and moves on in procedure.	SAT / UNSAT
30.	Single notch as follows: Place ROD MOVEMENT CNTRL switch to OUT NOTCH, spring return to OFF.	Places ROD MOVEMENT CNTRL switch to OUT NOTCH, spring return to OFF.	**CRITICAL STEP** SAT / UNSAT
31.	Verify control rod latches in the expected even numbered position BEFORE ROD SETTLE light goes off.	Observes control rod settles at even numbered position.	SAT / UNSAT
32.	Verify ROD SETTLE light is off.	Observes ROD SETTLE light is off.	SAT / UNSAT
33.	IF control rod is withdrawn to position 48...	Reads conditional step and moves on in procedure.	SAT / UNSAT
34.	IF additional control rod notch withdrawal is desired, THEN return to Step E.1.5.	Repeats notch withdrawal	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
Alternate Path Starts Here Control rod 30-51 will double notch from position 04 to position 08.			
35.	IF control rod double notches, AND is not in the rod sequence final intended position, THEN perform the following: 1) Insert control rod one notch. 2) Notify Shift Manager. 3) Stop all further control rod withdrawals until Shift Manager reviews event and approves continued rod withdrawal.	Observes control rod 30-51 double notches from position 04 to position 08.	SAT / UNSAT
		Inserts control rod 30-51 one notch to position 06.	**CRITICAL STEP** SAT / UNSAT
		Notifies Shift Manager of control rod 30-51 double notching.	SAT / UNSAT
EVALUATOR Terminate the task at this point.			

Task Standard: Emergency Rod In functional test completed for control rod 30-03. Emergency Rod In functional test commenced for control rod 30-51. Control rod 30-51 inserted back to position 06 after double notching to position 08.

Handout

- **The plant is shutdown in Mode 4.**
- **Preparations are underway for a startup.**

Perform the Emergency Rod In Functional Test per OP-65 section G.7. Complete the test using control rod 30-03.

Then repeat the test using control rod 30-51.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 G	TASK TITLE:	Secure Drywell and Torus Spray
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 226001 A4.03 (3.5/3.4)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

ERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 G	TASK TITLE: Secure Drywell and Torus Spray
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-13B, RHR – Containment Control

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Initialize simulator to an IC where the Reactor has been scrammed and RHR loop A is operating in both Torus and Drywell spray, and sprays are ready to be secured (IC-214).

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. The plant is shutdown following a steam leak in the Drywell.

B. RHR A is operating in Torus and Drywell spray.

VII. INITIATING CUE

Secure RHR Loop A Torus Spray per OP-13B section F.3. Then secure RHR Loop A Drywell Spray per OP-13B section F.5. Then continue the RHR Loop A shutdown per OP-13B section F.7.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-13B and proceed to sections F.3 and F.5.	Obtains a controlled copy of OP-13B and proceeds to section F.3 and F.5.	SAT / UNSAT
2.	Close TORUS SPRAY INBD VLV 10MOV-38A.	Closes TORUS SPRAY INBD VLV 10MOV-38A by rotating control switch counterclockwise to CLOSE.	**CRITICAL STEP** SAT / UNSAT
3.	IF RHR Loop A flow is LESS THAN 1500 gpm, THEN ensure open MIN FLOW VLV 10MOV-16A.	Determines RHR Loop A flow is still >1500 gpm and moves on in procedure.	SAT / UNSAT
4.	IF RHR Loop A operation is not required, THEN shut down RHR Loop A per Subsection F.7.	Determines RHR Loop A is still operating in Drywell spray and moves on to section F.5.	SAT / UNSAT
5.	Close DW SPRAY INBD VLV 10MOV-31A.	Closes DW SPRAY INBD VLV 10MOV-31A by rotating control switch counterclockwise to CLOSE.	**CRITICAL STEP** SAT / UNSAT
6.	IF RHR Loop A flow is LESS THAN 1500 gpm, THEN ensure open MIN FLOW VLV 10MOV-16A.	Observes MIN FLOW VLV 10MOV-16A is closed (red light off, green light on).	SAT / UNSAT
7.	IF RHR Loop A operation is not required, THEN shut down RHR Loop A per Subsection F.7	Proceeds to section F.7.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	Ensure one of the RHR Loop A keep-full systems is in service as follows: • RHR KEEP-FULL PMP 10P-2A is running, OR • 10RHR-274 (RHR loop A containment spray keep-full cond xfer connection valve) is throttled open.	Determines RHR Loop A keep-full system is in service. **Evaluator Role Play:** If asked, report that RHR keep-full is in service.	SAT / UNSAT
9.	Close RHR TEST & TORUS CLG 10MOV-34A by holding the control switch in the CLOSED position for 5 seconds AFTER full closed indication.	Closes RHR TEST & TORUS CLG 10MOV-34A by rotating the control switch counterclockwise to CLOSE.	**CRITICAL STEP** SAT / UNSAT
10.	Ensure closed the following valves: • TORUS SPRAY INBD VLV 10MOV-38A • DW SPRAY INBD VLV 10MOV-31A	Observes 10MOV-38A is closed (red light off, green light on). Observes 10MOV-31A is closed (red light off, green light on).	SAT / UNSAT
11.	Ensure the following RHR pumps are stopped: • RHR PMP 10P-3A • RHR PMP 10P-3C	Stops RHR PMP 10P-3A by rotating control switch counterclockwise to STOP. Stops RHR PMP 10P-3C by rotating control switch counterclockwise to STOP.	**CRITICAL STEP** SAT / UNSAT
12.	Ensure closed the following valves: • RHR TEST TORUS CLG & SPRAY 10MOV-39A • DW SPRAY OUTBD VLV 10MOV-26A	Closes RHR TEST TORUS CLG & SPRAY 10MOV-39A by rotating the control switch counterclockwise to CLOSE. Closes DW SPRAY OUTBD VLV 10MOV-26A by rotating the control switch counterclockwise to CLOSE.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
13.	Ensure open MIN FLOW VLV 10MOV-16A.	Observes MIN FLOW VLV 10MOV-16A is open (red light on, green light off).	SAT / UNSAT
14.	Ensure open HX A BYP VLV 10MOV-66A.	Opens HX A BYP VLV 10MOV-66A by rotating control switch clockwise to open.	**CRITICAL STEP** SAT / UNSAT
15.	IF RHRSW Loop A operation is not required, THEN shut down RHRSW Loop A as follows: Close RHRSW DISCH VLV FROM HX A 10MOV-89A.	Closes RHRSW DISCH VLV FROM HX A 10MOV-89A by rotating the control switch counterclockwise to CLOSE.	**CRITICAL STEP** SAT / UNSAT
16.	Ensure the following RHRSW pumps are stopped: • RHRSW PMP 10P-1A • RHRSW PMP 10P-1C	Stops RHRSW PMP 10P-1A by rotating control switch counterclockwise to STOP. Stops RHRSW PMP 10P-1C by rotating control switch counterclockwise to STOP.	**CRITICAL STEP** SAT / UNSAT
	EVALUATOR Terminate the task at this point.		

Task Standard: RHR loop A Torus and Drywell sprays are secured in accordance with OP-13B.

Handout

- **The plant is shutdown following a steam leak in the Drywell.**
- **RHR A is operating in Torus and Drywell spray.**

Secure RHR Loop A Torus Spray per OP-13B section F.3.

Then secure RHR Loop A Drywell Spray per OP-13B section F.5.

Then continue the RHR Loop A shutdown per OP-13B section F.7.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO — APPL. TO

NRC 20-1 H — JPM NUMBER

TASK TITLE: Supply Ventilation Loads with Emergency Service Water

NRC K/A SYSTEM NUMBER: 400000 A4.01 (3.1/3.0)

ESTIMATED COMPLETION TIME: 10 Minutes

SUBMITTED: x

OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________

JPM Completion ☐ Simulated ☒ Performed

Location: ☐ Plant ☒ Simulator

DATE PERFORMED: __________ TIME TO COMPLETE: ______ Minutes

ℸFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 H	TASK TITLE:	Supply Ventilation Loads with Emergency Service Water
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. AOP-11, Loss of RBCLC

B. OP-21, Emergency Service Water

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Reset the simulator to an IC with a loss of all RBCLC pumps, the Reactor scrammed, and RWR pumps tripped (IC-215).

B. Have malfunctions preset to prevent ESW pump auto-starts.

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. A complete loss of Reactor Building Closed Loop Cooling (RBCLC) has occurred.

B. AOP-11 (Loss of RBCLC) is being executed.

C. A loss of coolant accident (LOCA) has NOT occurred.

D. Emergency Service Water (ESW) is necessary for drywell cooling.

VII. INITIATING CUE

Inform the candidate, "Supply ESW to all Drywell Coolers per AOP-11 Section F.2.4."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of AOP-11.	Obtains a controlled copy of AOP-11.	SAT / UNSAT
2.	Select the correct section to perform the task.	Selects Section F.2.4.	SAT / UNSAT
3.	CAUTION: Supplying ESW or re-injecting RBC to drywell loads during a LOCA could cause failure of the RBCLC piping due to water hammer and jeopardize primary containment integrity. During LOCA conditions, this lineup is prohibited.	Candidate reads CAUTION.	SAT / UNSAT
4.	IF ESW is necessary for drywell cooling as determined by the CRS, THEN perform the following:	Determines ESW is necessary for drywell cooling.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	Verify a LOCA has not occurred.	Determines a LOCA condition does NOT exits per Initiating Cue and/or observing Plant parameters.	SAT / UNSAT
6.	To supply Drywell Cooler A, perform the following: 1) Ensure 46P-2B (ESW Pump B) in service.	1) Starts 46P-2B by rotating its control switch on Panel 09-6 clockwise to ON, spring return to normal, red flag.	**CRITICAL STEP** SAT / UNSAT
7.	2) Open ESW TO DW CLR 15MOV-102.	2) Opens 15MOV-102 by rotating its control switch on Panel 09-75 clockwise to ON, spring return to normal, red flag.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	To supply Drywell Cooler B, perform the following: 1) Ensure 46P-2A (ESW Pump A) in service.	1) Starts 46P-2A by rotating its control switch on Panel 09-6 clockwise to ON, spring return to normal, red flag.	**CRITICAL STEP** SAT / UNSAT
9.	2) Open ESW TO DW CLR 15MOV-103.	2) Opens 15MOV-103 by rotating its control switch on Panel 09-75 clockwise to ON, spring return to normal, red flag.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: ESW is being supplied to Drywell Coolers A and B.

HANDOUT

Initial Conditions:

- **A complete loss of Reactor Building Closed Loop Cooling (RBCLC) has occurred.**
- **AOP-11 (Loss of RBCLC) is being executed.**
- **A loss of coolant accident (LOCA) has NOT occurred.**
- **Emergency Service Water (ESW) is necessary for drywell cooling.**

Initiating Cue:

The CRS directs you supply ESW to all Drywell Coolers per AOP-11 Section F.2.4.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 I	TASK TITLE: Vent the Scram Air Header
APPL. TO	JPM NUMBER	

NRC K/A SYSTEM NUMBER: 201001 A2.04 (3.8/3.9)

ESTIMATED COMPLETION TIME: 13 Minutes

SUBMITTED: x ____________ OPERATIONS REVIEW: x ____________

APPROVED: x ____________

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CANDIDATE NAME: ____________

JPM Completion ☒ Simulated ☐ Performed

Location: ☒ Plant ☐ Simulator

DATE PERFORMED: ____________ TIME TO COMPLETE: ________ Minutes

ɿFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ____________________________

SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE
REQUIRED TASK INFORMATION

S/RO	NRC 20-1 I	TASK TITLE: Vent the Scram Air Header
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. EP-3, Backup Control Rod Insertion

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. None

EVALUATOR NOTES

A. None

VI. INITIAL CONDITIONS

A. A failure to scram has occurred.
B. Numerous control rods have failed to insert.
C. EOP-3, Failure to Scram, is being executed.
D. Scram Air Header pressure is 70 psig and steady.
E. EP-3 (Backup Control Rod Insertion) success path is to vent the Scram Air Header.

VII. INITIATING CUE

Inform the candidate, "Vent the Scram Air Header per EP-3 section 5.3."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of EP-3.	Applicant would obtain a controlled copy of EP-3 from the Control Room or CRD venting rig equipment box or Relay Room equipment box or MERLIN. **EVALUATOR:** Provide a working copy of EP-3.	SAT / UNSAT
2.	Select the correct section to perform the task.	Selects Section 5.3 of EP-3. **EVALUATOR NOTE:** All remaining actions of this JPM are simulated performed on Reactor Building elevation 272' in the southwest corner.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
3.	**(Step 5.3.1)** Ensure open the following valves: • 03CRD-2028 (control rod drive system inlet instrument air filter 27B outlet isol valve) • 03CRD-2029 (control rod drive system inlet instrument air filter 27A outlet isol valve)	Ensures open 03CRD-2028 and 03CRD-2029 by: • For initially closed valve, simulates rotating handwheel counterclockwise until it reaches a hard stop. • For initially open valve, simulates rotating handwheel to check position. **EVALUATOR NOTE:** One of these valves is initially open and one is initially closed. **EVALUATOR CUE:** For the closed valve, the indicated handwheel is turned in the indicated direction and reaches a hard stop. For the open valve, the indicated handwheel will not move counterclockwise, but will move clockwise.	SAT / UNSAT
4.	**(Step 5.3.2)** Close the following valves: • 03CRD-2030 (control rod drive system inlet instrument air filter 27A inlet isol valve) • 03CRD-2031 (control rod drive system inlet instrument air filter 27B inlet isol valve)	Closes the following valves by simulating rotating handwheel clockwise until it reaches a hard stop: • 03CRD-2030 • 03CRD-2031 **EVALUATOR NOTE:** If only one filter is aligned to the scram air header based on the candidate's actions in JPM step 3, then it is only critical for that filter's inlet valve to be closed. **EVALUATOR CUE:** For each valve, the indicated handwheel is turned in the indicated direction and reaches a hard stop.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	**(Step 5.3.3)** Open scram air filter drain valve on both scram air filters (valve located on bottom of filter).	Opens scram air filter drain valves by simulating rotating valve operators counterclockwise. **EVALUATOR NOTE**: Valve 03F-27A is a ball valve and valve 03F-27B is a petcock valve. **EVALUATOR NOTE:** It is only critical for one drain valve to be opened. If only one filter is aligned to the scram air header based on the candidate's actions in JPM step 3, then it is only critical for that filter's drain valve to be opened. **EVALUATOR CUE:** For each valve, the indicated handwheel is turned in the indicated direction and reaches a hard stop. Flow noise is heard through the valve(s).	**CRITICAL STEP** SAT / UNSAT
6.	**(Step 5.3.4)** Verify scram air header pressure lowers to zero psig on 03PI-229 (HCU scram pilot valve air hdr press indic).	Observes indication on 03PI-229. **EVALUATOR CUE:** Indicate 0 psig on 03PI-229. If asked, no more flow noise is heard through the drain valves. **EVALUATOR CUE:** The control room reports that all control rods are full in. If asked, it is desired to restore the scram air header.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
7.	**(Step 5.3.5)** WHEN control rods no longer move inward, restore scram air header as follows: • Close scram air filter drain valve on both scram air filters.	Closes both scram air filter drain valves by simulating rotating valve operators clockwise. **EVALUATOR NOTE:** It is only critical that any drain valve that was opened in JPM step 5 be closed. **EVALUATOR CUE:** For each valve, the indicated valve operator is turned in the indicated direction and reaches a hard stop.	**CRITICAL STEP** SAT / UNSAT
8.	**(Step 5.3.5.B)** Open the following valves: • 03CRD-2030 • 03CRD-2031	Opens both of the following valves by simulating rotating the handwheel counterclockwise. **EVALUATOR NOTE:** It is only critical that one of these valves be opened. **EVALUATOR CUE:** For each valve, the indicated handwheel is turned in the indicated direction and reaches a hard stop.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
9.	**(Step 5.3.5.C)** Close one of the following valves: • 03CRD-2028 OR • 03CRD-2029	Closes one of the following valves by simulating rotating the handwheel clockwise: • 03CRD-2028 OR • 03CRD-2029 **EVALUATOR CUE:** The indicated handwheel is turned in the indicated direction and reaches a hard stop.	SAT / UNSAT
EVALUATOR: Terminate the task at this point.			

Task Standard: All control rods inserted with scram air header vented.

HANDOUT

Initial Conditions:

- A failure to scram has occurred.
- Numerous control rods have failed to insert.
- EOP-3, Failure to Scram, is being executed.
- Scram Air Header pressure is 70 psig and steady.
- EP-3 (Backup Control Rod Insertion) success path is to vent the Scram Air Header.

Initiating Cue:

Vent the Scram Air Header per EP-3 section 5.3.

James A. Fitzpatrick

JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 J	TASK TITLE:	Supply Fire Protection Water to EDGs B & D
APPL. TO	JPM NUMBER		

NRC K/A SYSTEM NUMBER: 286000 K1.09 (3.2/3.3)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

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CANDIDATE NAME: ______________________

JPM Completion ☒ Simulated ☐ Performed

Location: ☒ Plant ☐ Simulator

DATE PERFORMED: ____________ TIME TO COMPLETE: ______ Minutes

RFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

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COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR: ______________________________
SIGNATURE/PRINTED

JOB PERFORMANCE MEASURE

REQUIRED TASK INFORMATION

S/RO	NRC 20-1 J	TASK TITLE: Supply Fire Protection Water to EDGs B & D
APPL. TO	JPM NUMBER	

I. SAFETY CONSIDERATIONS

A. None

II. REFERENCES

A. OP-22, Diesel Generator Emergency Power

III. TOOLS AND EQUIPMENT

A. Equipment located in cabinet 76CAB-1 on West wall of North Emergency Service Water Room.

IV. SET UP REQUIREMENTS

A. Provide a working copy of OP-22, including Section G.24

V. EVALUATOR NOTES

A. None

VI. TASK CONDITIONS

A. The plant has sustained a loss of off-site power.

B. The A and C EDGs have failed to start.

C. Upon initiation of the B and D EDGs, the B ESW System failed due to a fault in the supply breaker to the B ESW pump.

VII. INITIATING CUE

Inform the candidate, "Supply cooling water to EDGs B and D from the Fire Protection System per OP-22 section G.24."

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of OP-22.	The candidate determines where to obtain a controlled copy of OP-22. (Control Room, Merlin) **EVALUATOR:** Provide candidate a current copy of OP-22.	SAT / UNSAT
2.	Select the correct section to perform the task.	The candidate selects Section G.24 of OP-22.	SAT / UNSAT
3.	BEFORE cross connecting safety systems, review system status to ensure failure of one system will not result in common-cause failure.	Reviews procedure step regarding cross-connecting safety systems. **EVALUATOR CUE:** If asked, inform the candidate that the review is complete and a single failure of one system will NOT result in common-cause failure.	SAT / UNSAT
4.	Verify ESW Pump 46P-2B is not available.	Determines ESW pump 46P-2B is not available based on initial conditions.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	**CAUTION** Fire Protection Pumps 76P-1, 76P-2, and 76P-4 are designed to operate with screenwell forebay water level GREATER THAN or equal to 239 feet, 6 inches.	Review procedure caution. **EVALUATOR CUE:** If asked for forebay level, state that forebay level is normal.	SAT / UNSAT
6.	Ensure AT LEAST one of the following pumps is running: • ELEC FIRE PMP 76P-2 • DIESEL FIRE PMP 76P-1 • DIESEL FIRE PMP 76P-4	Ensures AT LEAST one of the following pumps is running: • ELEC FIRE PMP 76P-2 • DIESEL FIRE PMP 76P-1 • DIESEL FIRE PMP 76P-4 **EVALUATOR CUE:** Candidate may visually ensure one pump is running by using local indications or by contacting the Control Room. If necessary, respond to Control Room communication and report to the candidate that Diesel Fire Pumps P1 and P4 are running.	SAT / UNSAT
7.	Verify closed AT LEAST one of the following valves: • 46ESW-2A (ESW loop A supply to EDG cross-tie isol valve) • 46ESW-2B (ESW loop B supply to EDG cross-tie isol valve) (Need ladder)	Verifies closed AT LEAST one of the following valves by simulating rotating valve handwheel clockwise: • 46ESW-2A • 46ESW-2B **EVALUATOR CUE:** The indicated handwheel does not rotate.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
8.	Line up cross-tie between fire protection and ESW as follows: NOTE: Locking devices (red detents) must be depressed in order to remove caps. Remove caps from the following valves: • 46ESW-2000 (ESW/FPS cross-tie isol valve)	Simulates removing cap from 46ESW-2000 by pushing red detent. **EVALUATOR CUE:** The indicated cap is removed.	**CRITICAL STEP** SAT / UNSAT
9.	• 76FPS-2000 (FPS/ESW cross-tie isol valve)	Simulates removing cap from 76FPS-2000 by pushing red detent. **EVALUATOR CUE:** The indicated cap is removed.	**CRITICAL STEP** SAT / UNSAT
10.	Connect short length of hose (stored in cabinet 76CAB-1 on west wall of north emergency service water room) between the following valves: • 46ESW-2000 (N1 key for cabinet) (spanner wrench available in cabinet, if needed)	Simulates connecting hose to 46ESW-2000.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
11.	• 76FPS-2000 (spanner wrench available in cabinet, if needed)	Simulates connecting hose to 76FPS-2000.	**CRITICAL STEP** SAT / UNSAT
12.	Unlock and open 76FPS-2000. (P5 key)	Simulates unlocking and then opening 76FPS-2000 by rotating handwheel counterclockwise. **EVALUATOR CUE:** The indicated valve handwheel has rotated fully counterclockwise.	**CRITICAL STEP** SAT / UNSAT
13.	Unlock and open 46ESW-2000. (P5 key)	Simulates unlocking and then opening 46ESW-2000 by rotating handwheel counterclockwise. **EVALUATOR CUE:** The indicated valve handwheel has rotated fully counterclockwise.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
14.	Line up ESW motor-operated valves as follows: NOTE: If the ESW lockout matrix is activated, operation of 46MOV-101B will be blocked. IF the ESW lockout matrix is activated, THEN perform the following: Open circuit breaker 71MCC-262-OD1 (46MOV-101B ESW loop B supply header isol valve).	**EVALUATOR CUE:** If asked about ESW lockout matrix, inform the Candidate that the ESW lockout matrix is activated. Indicates need to open circuit breaker 71MCC-262-OD1. **EVALUATOR CUE:** Inform the Candidate that circuit breaker 71MCC-262-OD1 has been opened by another operator.	**CRITICAL STEP** SAT / UNSAT
15.	Declutch and manually close 46MOV-101B (emergency service water loop B supply header isol valve).	Simulates de-clutching and then closing 46MOV-101B by rotating handwheel fully clockwise. **EVALUTOR CUE:** When the de-clutch mechanism is pulled downward and the handwheel is turned clockwise, inform the Candidate that the handwheel has been turned in the indicated direction and stopped.	**CRITICAL STEP** SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
16.	Ensure closed the following valves: • ESW SYS B INJ VLV 46MOV-101B	Determines 46MOV-101B is closed. **EVALUATOR CUE:** 46MOV-101B is closed. **EVALUATOR NOTE:** Valve position is known based on actions taken in the previous JPM step.	SAT / UNSAT
17.	• ESW SYS B TEST VLV 46MOV-102B	Determines 46MOV-102B is closed. **EVALUATOR CUE:** 46MOV-102B is closed or "as you observe it", based on what candidate does. **EVALUATOR NOTE:** Valve position may be determined based on local indications or by calling Control Room.	SAT / UNSAT
	EVALUATOR: Terminate the task at this point.		

Task Standard: Cooling water has been supplied to EDGs B and D from the Fire Protection System per OP-22 section G.24

HANDOUT

- **The plant has sustained a loss of off-site power.**
- **The A and C EDGs have failed to start.**
- **Upon initiation of the B and D EDGs, the B ESW System failed due to a fault in the supply breaker to the B ESW pump.**

Supply cooling water to EDGs B and D from the Fire Protection System per OP-22 section G.24.

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

S/RO (APPL. TO) | NRC 20-1 K (JPM NUMBER) | TASK TITLE: Vent Torus to Lower Primary Containment Pressure

NRC K/A SYSTEM NUMBER: 223001 A2.01 (4.3/4.4)

ESTIMATED COMPLETION TIME: 15 Minutes

SUBMITTED: x OPERATIONS REVIEW: x

APPROVED: x

CANDIDATE NAME: _____

JPM Completion Location: ☒ Simulated ☒ Plant ☐ Performed ☐ Simulator

DATE PERFORMED: _____ TIME TO COMPLETE: _____ Minutes
PERFORMANCE EVALUATION: ☐ Satisfactory ☐ Unsatisfactory

~~~~~~

COMMENTS: (MANDATORY FOR UNSATISFACTORY PERFORMANCE)

EVALUATOR:

_____
SIGNATURE/PRINTED
~~~~~~

James A. Fitzpatrick
JOB PERFORMANCE MEASURE

S/RO	NRC 20-1 K	TASK TITLE:	Vent Torus to Lower Primary Containment Pressure
APPL. TO	JPM NUMBER		

I. SAFETY CONSIDERATIONS

A. Ensure proper safety equipment and safety procedures are observed.

II. REFERENCES

A. EP-6, POST ACCIDENT CONTAINMENT VENTING AND GAS CONTROL

III. TOOLS AND EQUIPMENT

A. None

IV. SET UP REQUIREMENTS

A. Current copy of EP-6 including Attachments 1 and 2.

V. EVALUATOR NOTES

A. None

I. INITIAL CONDITIONS

A. An event has occurred which requires venting the containment.

B. The EOPs have been entered.

C. Action to preclude the failure of containment must be completed.

D. One train of SGT is in service. The other train of SGT is secured.

E. Containment purge is NOT in progress.

VII. INITIATING CUE

Inform the candidate, "Vent the Torus using EP-6, Section 5.7. Start at step 5.7.6."

NOTE: Unless otherwise noted, all controls are located on Panel 27PCP in the Relay Room.

	STEP	STANDARD	EVALUATION / COMMENT
1.	Obtain a controlled copy of procedure EP-6.	Applicant obtains a controlled copy of procedure EP-6 from: the Relay Room equipment box or Control Room or MERLIN. **EVALUATOR**: Evaluator to provide working copy.	SAT / UNSAT
2.	Reviews prerequisites, precautions and special instructions associated with the procedure.	Reviews applicable portions of procedure.	SAT / UNSAT
3.	Selects section 5.7, Venting Containment.	Selects the correct section of the procedure to be performed.	SAT / UNSAT
4.	**NOTE:** Steps 5.7.6 and 5.7.7 may be performed and repeated in any order to alternate between torus and drywell venting. Torus venting is preferred.	Reviews Note and selects step 5.7.6 to perform as directed.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5.	**(Step 5.7.6)** **IF** Torus will be vented **THEN** perform the following: • Verify torus pressure is **LESS THAN** PCPL • Verify primary containment water level is LESS THAN 29.5 feet. • While venting torus, frequently monitor torus pressure and primary containment water level. • **IF** primary containment water level reaches 29.5 feet while venting the torus, **THEN** vent drywell per Step 5.7.7.	Verifies Torus pressure is less than PCPL and Torus level is less than 29.5 ft. **EVALUATOR CUE:** If/when candidate inquires about pressure and level, inform the candidate that Torus Pressure is 50 psig and Primary Containment Water Level is 29.0 ft.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
5. cont.	**(Step 5.7.6.D)** • Open TORUS EXH INNER BYP VLV 27MOV-117.	Candidate places TORUS EXH INNER BYP VLV 27MOV-117 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
	(Step 5.7.6.E) • Open TORUS EXH OUTER BYP VLV 27MOV-123.	Candidate places TORUS EXH OUTER BYP VLV 27MOV-123 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
	(Step 5.7.6.F) • Ensure closed the following valves: o DW EXH OUTER BYP VLV 27MOV-113. o DW EXH INNER BYPASS VLV 27MOV-122. o DW EXH INNER ISOL VLV 27AOV-113. o DW EXH OUTER ISOL VLV 27AOV-114.	For each valve, candidate locates its red/green position lights and indicates it should be closed. **EVALUATOR CUE:** When candidate inquires about light status, inform the candidate the green light is on, red light is off.	SAT / UNSAT

	STEP	STANDARD	EVALUATION / COMMENT
6.	**(Step 5.7.6.G)** IF it becomes necessary to raise vent rate, AND primary containment pressure is LESS THAN PCPL, THEN attempt to open the following valves: • TORUS EXH INNER ISOL VLV 27AOV-117 • TORUS EXH OUTER ISOL VLV 27AOV-118 IF either valve fails to open, THEN consider opening valve per Subsection 5.14, based on radiation levels near the valve.	**EVALUATOR CUE:** The Control Room has requested that you raise the vent rate. Candidate places TORUS EXH INNER ISOL VLV 27AOV-117 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
		Candidate places TORUS EXH OUTER ISOL VLV 27AOV-118 control switch to the OPEN position. **EVALUATOR CUE:** When candidate indicates placing the control switch to open, inform the candidate that the green light is off, red light is on.	**CRITICAL STEP** SAT / UNSAT
EVALUATOR: Terminate the JPM at this point.			

Task Standard: Valving is repositioned to support the Containment vented in accordance with EP-6.

HANDOUT

Initial Conditions:

- An event has occurred which requires venting the containment.
- The EOPs have been entered.
- Action to preclude the failure of containment must be completed.
- One train of SGT is in service. The other train of SGT is secured.
- Containment purge is NOT in progress.

Initiating Cue:

Vent the Torus using EP-6 Section 5.7. Start at step 5.7.6.

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 20-1 NRC EXAMINATION SCENARIO 1

TITLE: LOI 20-1 NRC EXAMINATION SCENARIO 1

SCENARIO NUMBER: NRC 1

PATH: STAND ALONE

Validation: _____x_____ Training: _____x_____ Operations: _____x_____

	CANDIDATES
CRS	
ATC	
BOP	

A. **TITLE:** LOI 20-1 NRC EXAMINATION SCENARIO 1

B. **SCENARIO SETUP:**

1. IC-201

2. Special Instructions:

   a. The plant is operating at approximately 85% power.
   b. TBCLC pump C is out of service (yellow tag).
   c. CRD pump A is in service and B is in standby.

3. Preset Conditions:

<SCHEDULE>

<ITEM row = "1">
<TIME>0</TIME>
<ACTION>Insert remote RH43:A to OPEN on event 1</ACTION>
<DESCRIPTION>RHR 10-MOV-26A BREAKER</DESCRIPTION>
</ITEM>

<ITEM row = "2">
<TIME>0</TIME>
<ACTION>Insert malfunction TU04:E from 21.00000 to 26.00000 in 300 on event 2</ACTION>
<DESCRIPTION>MAIN TURBINE HIGH BEARING #5 VIBRATION</DESCRIPTION>
</ITEM>

<ITEM row = "3">
<TIME>0</TIME>
<ACTION>Insert malfunction TU04:F from 21.00000 to 27.00000 in 300 on event 2</ACTION>
<DESCRIPTION>MAIN TURBINE HIGH BEARING #6 VIBRATION</DESCRIPTION>
</ITEM>

<ITEM row = "4">
<TIME>0</TIME>
<ACTION>Insert malfunction TU04:E to 14.00000 in 60 on event 21</ACTION>
<DESCRIPTION>MAIN TURBINE HIGH BEARING #5 VIBRATION</DESCRIPTION>
</ITEM>

<ITEM row = "5">
<TIME>0</TIME>
<ACTION>Insert malfunction TU04:F to 14.00000 in 60 on event 21</ACTION>
<DESCRIPTION>MAIN TURBINE HIGH BEARING #6 VIBRATION</DESCRIPTION>
</ITEM>

<ITEM row = "6">
<TIME>0</TIME>
<ACTION>Insert malfunction PC05:J to 27.00000 on event 3 delete in 3</ACTION>
<DESCRIPTION>DRYWELL PRESS XMTR 05PT-12A FAILS</DESCRIPTION>
</ITEM>

```
        <ITEM row = "7">
                <TIME>0</TIME>
                <ACTION>Insert malfunction AD06:G on event 4</ACTION>
                <DESCRIPTION>RX PRESS RELIEF VALVE (2E-RV-71G) INADVERTENTLY
                OPENS</DESCRIPTION>
        </ITEM>

        <ITEM row = "8">
                <TIME>0</TIME>
                <ACTION>Insert malfunction AD08:G on event 4</ACTION>
                <DESCRIPTION>RX PRESS RELIEF VALVE (2E-RV2-71G) STUCK
                OPEN</DESCRIPTION>
        </ITEM>

        <ITEM row = "9">
                <TIME>0</TIME>
                <ACTION>Insert remote AD07:G to LOCAL on event 29</ACTION>
                <DESCRIPTION>&aposG&apos SRV ISOLATION SWITCH AT REMOTE PANEL
                25ASP-5</DESCRIPTION>
        </ITEM>

        <ITEM row = "10">
                <TIME>0</TIME>
                <ACTION>Insert remote AD02:G to OUT on event 30</ACTION>
                <DESCRIPTION>&aposG&apos SRV FUSE PULL OUT</DESCRIPTION>
        </ITEM>

        <ITEM row = "11">
                <TIME>0</TIME>
                <ACTION>Insert malfunction MS16:G after 60 to 100.00000 in 1200 on event
        5</ACTION>
                <DESCRIPTION>ADS DISCHARGE LINE (2E-RV2-71G) BREAK ABOVE TORUS
                WATER LEV</DESCRIPTION>
        </ITEM>

        <ITEM row = "12">
                <TIME>0</TIME>
                <ACTION>Insert remote RH43:B to OPEN on event 6</ACTION>
                <DESCRIPTION>RHR 10-MOV-26B BREAKER</DESCRIPTION>
        </ITEM>

        <ITEM row = "13">
                <TIME>0</TIME>
                <ACTION>Event Events/20-1 NRC/Scenario 1.evt</ACTION>
                <DESCRIPTION></DESCRIPTION>
        </ITEM>

</SCHEDULE>



<EVENT>

        <TRIGGER id="5" description="SCRAM full scram">(zlo5ads8a == 0) &amp (zlo5ads8b ==
```

0)</TRIGGER>
<TRIGGER id="6" description="10MOV26B red light on">zlo10as9b(2)==1</TRIGGER>
<TRIGGER id="21" description="ycx07nmaprmaf&lt80">ycx07nmaprmaf&lt80</TRIGGER>

</EVENT>

C. SCENARIO SUMMARY:

The scenario will begin at approximately 85% power with TBCLC pump C out of service for maintenance. The crew will begin the shift by starting CRD pump B and securing CRD pump A. Then, the crew will raise Reactor power using Recirculation flow.

Next, the breaker will trip for Drywell spray valve (10MOV-26A). The SRO will determine the Technical Specification impact of this failure.

Main Turbine high vibrations will develop. The crew will enter AOP-66 to address the vibrations. The crew will first lower Main Generator reactive loading, then Reactor power. The vibrations will subside as Reactor power is lowered.

Drywell pressure transmitter 05PT-12A will fail momentarily high, then low. This will cause a half scram on RPS A. The crew will reset the half scram. The SRO will determine the Technical Specification impact.

Safety Relief Valve G opens and sticks open. The crew will execute AOP-36, Stuck Open Relief Valve, and determine the valve cannot be closed. The SRO will direct a Reactor scram before Torus temperature reaches 110°F.

The SRO will enter EOP-RC, Hot RPV Control, and EOP-PC, Hot Primary Containment Control. Following the scram, the tailpipe of the stuck open SRV will break. This causes Primary Containment pressure to rapidly rise.

The SRO will direct the Torus and Drywell to be sprayed using RHR loop B. However, the RHR loop B Drywell spray valve 10MOV-26B will fail to open. Combined with the earlier failure of 10MOV-26A, this will prevent spraying the Drywell using either RHR or RHRSW. This will result in Pressure Suppression Pressure (PSP) being violated, which requires an Emergency RPV Depressurization. The SRO will direct an Emergency RPV Depressurization and the crew will open 7 SRVs.

The scenario will be terminated when all control rods are inserted, Emergency RPV Depressurization is in progress, and Reactor water level is controlled above 0".

The plant is operating at approximately 85% power.

TBCLC pump C is out of service for maintenance.

After assuming the Shift:

1. Start CRD pump B and secure CRD pump A per OP-25 section G.10. The procedure is in progress up to step G.10.2.

2. Raise Reactor power using Recirculation flow per the provided reactivity instructions.

Critical Tasks/Standards	
Critical Task #1:	Given a stuck open SRV, the crew will scram the Reactor before Torus water temperature exceeds the Boron Injection Initiation Temperature, in accordance with AOP-36 and EOP-PC.
Critical Task #2:	Given the inability to maintain Primary Containment conditions inside the Pressure Suppression Pressure, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-PC. Emergency RPV Depressurization must be initiated within 15 minutes of Pressure Suppression Pressure being exceeded.

D. TERMINATION CUES:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 **Swap CRD Pumps**	SRO	• Perform Crew Brief • Direct BOP to start CRD pump B and secure CRD pump A per OP-25 section G.10 starting at step G.10.2	
	BOP	• Adjust CRD FLOW CNTRL 03FIC-301 to establish 20 to 30 gpm on 03FIC-301 or 03FI-310. • Start CRD pump B. • Stop CRD pump A. • Adjust CRD FLOW CNTRL 03FIC-301 to establish 59 to 61 gpm on 03FI-310 or 03FIC-301. • Verify normal operating values on the following indicators at panel 09-5: o CHG WTR PRESS 03PI-302: **BETWEEN** 1400 and 1575 psig, not to exceed 1650 psig o DRV WTR DIFF PRESS 03DPI-303: 260 to 270 psid o CLG WTR DIFF PRESS 03DPI-304: approximately 10 to 26 psid o DRV WTR FLOW 03FI-305: zero when no CRD is being driven o CLG WTR FLOW 03FI-306: 59 to 61 gpm	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 2 **Raise Reactor Power with Recirculation Flow**	SRO	• Direct ATC to raise power to 90% with Recirc flow • Provide oversight of reactivity manipulation	
	ATC	• Raise Recirc flow alternately with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level, Core Map	
Event 3 **Drywell Spray Valve (10MOV-26A) Power Loss** (On Lead Instructor cue, insert Trigger 1)	BOP/ATC	• Recognize \ report Annunciator 09-3-1-03 (RHR A VLV OVERLOAD OR PWR LOSS) • Report 10MOV-26A indicating lights off • Dispatch operator to investigate	
Role Play: If dispatched to investigate 10MOV-26A, wait 2 minutes, then report that the supply breaker (71MCC-152-OF1) is tripped.	SRO	• Acknowledge report of 10MOV-26A breaker trip • Ensure ARP execution • Declare RHR loop A inoperable for Containment Spray • Determine Technical Specification 3.6.1.9 Condition A requires restoring to operable status within 7 days • Determine Technical Specification 3.6.1.3 Condition A requires verifying the valve closed within 4 hours, but already met with valve closed and de-activated by breaker trip	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 4 **Main Turbine Vibration** (On Lead Instructor cue, insert Trigger 2)	ATC / BOP	• Recognize / report high Turbine vibrations • Monitor Turbine vibrations • Report vibrations on bearing 5 & 6 are greater than 9 mils but less than 12 mils	
Note: A Reactor scram is required if vibrations exceeded 12 mils or if vibrations exceeded 9 mils for more than 15 minutes. Neither of these conditions are expected in this event.	SRO	• Acknowledge report • Enter AOP-66 (Main Turbine High Vibration) • Notify crew of Reactor scram criteria • Ensure Main Turbine system engineer is notified • Direct rapid power reduction with Recirc flow	
Role Play: If dispatched to investigate vibrations, wait 2 minutes, then report you can feel vibrations on the Turbine Deck but do not see any obvious cause.	BOP	• Execute AOP-66 • Lower MVARs to minimum (OP-11A Attachment 3) • Coordinate with ATC to lower Recirc flow with RWR MG A(B) SPEED CNTRL • Monitor Turbine vibrations • Report Turbine vibrations are less than 9 mils	
Note: Once Reactor power is <~80%, Triggers 21 activates to lower the Turbine vibrations.	ATC	• Lower Recirc flow with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level • Reviews updated 3D Monicore case, as time permits	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 5 **Drywell Pressure Transmitter Fails High, then Low** (On Lead Instructor cue, insert Trigger 3)	ATC	• Recognize / report ½ scram RPS 'A' side • Recognize / report annunciators: o 09-5-1-21, RPS HI DW PRESS TRIP o 09-5-1-3, RPS A AUTO SCRAM o EPIC alarm 1217, 05PT-12A Hi-Hi	
Role Play: If asked as management whether to reset half scram or leave in, direct resetting half scram.	SRO	• Acknowledge reports • Direct ARP response • Determine Technical Specification 3.3.1.1 Condition A is applicable (place channel in trip condition within 12 hours) • Determine Technical Specification 3.3.6.1 Condition A is applicable (place channel in trip condition within 12 hours) • Determine Technical Specification 3.3.6.2 Condition A is applicable (place channel in trip condition within 12 hours) • Direct resetting half scram	
Role Play: If dispatched to investigate Relay Room, wait 1 minute and report MTU for 05PT-12A indicates downscale.	ATC	• Reset half scram per ARP 09-5-1-3: • Place RX SCRAM RESET switch to GROUP 2 & 3, then to GROUP 1 & 4, spring return to NORM • Verify RPS A SCRAM GROUPS 1, 2, 3, and 4 lights are on	
Role Play: If dispatched to investigate Instrument Rack, wait 1 minute and report nothing abnormal for 05PT-12A.	BOP	• Assist analyzing cause of ½ scram • Utilize ARP and\or EPIC to determine 05PT-12A failed • May observe Alarm typer printout of DW pressure spiked to 10 psig	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Events 6-7 **SRV G Fails Open; SRV G Tailpipe Break in Torus Airspace; RHR Drywell Spray Valve 10MOV-26B Fails to Open** (on Lead Examiner Cue: insert TRIGGER 4)	All	• Recognize / report annunciators: o 09-4-1-16, SRV Leaking o 09-4-2-6, SRV Sonic Mon Alarm Hi • Recognize / report SRV G open	
	SRO	• Acknowledge report • Enter AOP-36, Stuck Open Relief Valve • May enter AOP-32, Unplanned Power Change, as time permits • If Torus water temperature exceeds 95°F or Torus water level exceeds 14.25 feet, enter EOP-PC, Hot Primary Containment Control • Direct initiation of Torus Cooling, as time permits	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: When directed to place SRV G isolation switch in LOCAL, wait 1 minute, insert **Trigger 29**, wait approximately 15 seconds, and then report task complete. If directed to pull SRV G fuses, insert **Trigger 30**, then report task completion. When directed to place SRV G isolation switch in REMOTE, re-insert remote **AD07:G** in **remote**, wait approximately 15 seconds, then report task completion.	BOP	• Execute AOP-36 o Identify open SRV o Determine annunciator 09-4-2-37 is NOT in alarm o Determine annunciator 09-4-3-3 is NOT in alarm o Cycle SRV G control switch at panel 09-4 o Direct Operator to place SRV G isolation switch in LOCAL at panel 25ASP-5 o Determine SRV G not closed o Direct Operator to place SRV G isolation switch in REMOTE at panel 25ASP-5 o Monitor Torus water temperature	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	BOP cont.	• Initiate Torus Cooling per OP-13B posted attachment, if time permits: o Ensure at least one of the RHR pumps is running o Open RHR TEST TORUS CLG & SPRAY 10MOV-39A(B) o Throttle RHR TEST & TORUS CLG 10MOV-34A(B) to establish desired/flow o WHEN RHR Loop A(B) flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A(B) o Establish RHRSW flow and temperature control	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Critical Task #1 **Critical Task #1 Standard:**		**Given a stuck open SRV, the crew will scram the Reactor before Torus water temperature exceeds the Boron Injection Initiation Temperature (BITT), in accordance with AOP-36 and EOP-PC.** **The Reactor is scrammed.**	**Pass / Fail**
Critical Task #2 **Critical Task #2 Standard:**		**Given the inability to maintain Primary Containment conditions inside the Pressure Suppression Pressure, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-PC. Emergency RPV Depressurization must be initiated within 15 minutes of Pressure Suppression Pressure being exceeded.** **7 SRVs are open.**	**Pass / Fail**
Notes: Ensure Trigger 5 automatically goes active when the Reactor scrams to cause the SRV tailpipe break.	SRO	• Acknowledges SRV G will NOT close • Enters EOP-PC, Hot Primary Containment Control on high Torus water temperature when Torus temp >95F • May direct rapid Reactor power reduction with Recirculation flow and/or CRAM rods • **Before Torus water temperature exceeds 110°F, direct Reactor scram** • Enter AOP-1, Reactor Scram • Enter EOP-RC, Hot RPV Control, on low Reactor water level • Direct Reactor water level controlled 180-220" using Feedwater • May direct Reactor pressure band of 800-1000 psig (will be unable to maintain pressure due to stuck open SRV)	**Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: The Pressure Suppression Pressure is approximately 26-28 psig at the Torus water level expected during this scenario.	SRO cont.	• Direct preventing injection from Core Spray and RHR as Reactor pressure lowers • May direct closing MSIVs (prior to 500 psig is a common benchmark) • Acknowledge degrading Primary Containment conditions • Re-enter EOP-RC on high Drywell pressure • Re-enter EOP-PC on high Drywell pressure and temperature • Enters AOP-39 (Loss of Coolant), as time permits • When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 13.5 psig, direct initiation of Torus Spray • When Torus pressure exceeds 13.5 psig, direct initiation of Drywell Spray • Acknowledge failure of 10MOV-26B and inability to spray the Drywell • Monitor Primary Containment conditions on Pressure Suppression Pressure curve • **When Torus pressure cannot be maintained below the Pressure Suppression Pressure, enter EOP-ED and direct opening 7 ADS valves** • Acknowledge 7 SRVs open	**Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Enter AOP-1 • **Depress MANUAL SCRAM A and MANUAL SCRAM B pushbuttons** • **Place RX MODE switch in SHUTDOWN** • Fully insert IRMs and SRMs • Observe Reactor power lowering • Verify all rods in • Ensure closed SDIV vent and drain valves • Verify Main Turbine trips • Verify 4KV loads transfer to reserve power	**Critical Task #1**
	ATC / BOP	• Initiate Torus spray with RHR loop B: o Place SPRAY CNTRL 10A-S17B switch to MANUAL, spring return to normal o Verify white SPRAY PERM 10A-DS67B light is on o Open RHR TEST TORUS CLG & SPRAY 10MOV-39B o Throttle TORUS SPRAY INBD VLV 10MOV-38B to establish desired torus spray flow rate o WHEN RHR Loop B flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16B o Throttle RHR TEST & TORUS CLG 10MOV-34B to divert excess flow to the torus to maintain GREATER THAN OR EQUAL TO 13,000 gpm RHR Loop B flow with two RHR pumps	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP cont.	• Establish RHRSW flow and temperature control: o Start RHRSW pump B or D o Throttle RHRSW DISCH VLV FROM HX B 10MOV-89B to establish 2500 to 4000 gpm o Start the second RHRSW pump if desired o Throttle RHRSW DISCH VLV FROM HX B 10MOV-89B to establish 4000 gpm per pump o Close HX B BYP VLV 10MOV-66B • Terminate and prevent low pressure injection: o Core Spray Loop A o Place 14MOV-11A AUTO ACTUATION BYPASS SW 14A-S16A switch in bypass o Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on o Ensure closed OUTBD INJ VLV 14MOV-11A o Ensure PMP 14P-1A is stopped o Core Spray Loop B o Place 14MOV-11B AUTO ACTUATION BYPASS SW 14A-S16B switch in bypass o Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on o Ensure closed OUTBD INJ VLV 14MOV-11B o Ensure PMP 14P-1B is stopped	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Plays: If asked, wait 2 minutes and report the breaker for 10MOV-26B is tripped but there is nothing else obviously wrong. If asked to manually open 10MOV-26B, wait 2 minutes and report the valve cannot be manually opened.	ATC / BOP cont.	○ RHR Loop A ○ Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A ○ Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on ○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27A ○ RHR Loop B ○ Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B ○ Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on ○ Ensure closed LPCI OUTBD INJ VLV 10MOV-27B • Attempt to initiate Drywell Spray: ○ Trip RWR pumps, if still running ○ Place SPRAY CNTRL 10A-S17B switch to MANUAL, spring return to normal ○ Verify white SPRAY PERM 10A-DS67B light is on ○ Attempt to open DW SPRAY OUTBD VLV 10MOV-26B ○ Recognize / report failure of DW SPRAY OUTBD VLV 10MOV-26B to open	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC / BOP	• May close MSIVs, as directed • Verify isolations per AOP-15, as time permits • **Open 7 SRVs** • Restore and maintain Reactor water level 180-220" using available injection systems	**Critical Task #2**

Termination Criteria:

- All control rods are inserted
- Emergency RPV Depressurization is in progress
- Reactor water level is controlled above 0"

Shift Turnover

The plant is operating at approximately 85% power.

TBCLC pump C is out of service for maintenance.

After assuming the Shift:

1. Start CRD pump B and secure CRD pump A per OP-25 section G.10. The procedure is in progress up to step G.10.2.
2. Raise Reactor power using Recirculation flow per the provided reactivity instructions.

Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Ascension

Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Raise power to 90% RTP	-	-	-	RWR	NA	-	

Prepared By: *Joe Allen*
(RxEng)

SM Approval: *Dave Roe*
(Shift Manager)

Reviewed By: *Bob Jones*
(RxEng or SRO)

Stamps

CONTROL ROOM OPERATOR

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Ascension

Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Raise power to 90% RTP	-	-	-	RWR	NA	-	

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

INDEPENDENT VERIFIER

Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Ascension

Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Raise power to 90% RTP	-	-	-	RWR	NA	-	

Prepared By: *Joe Allen*
(RxEng)

SM Approval: *Dave Roe*
(Shift Manager)

Reviewed By: *Bob Jones*
(RxEng or SRO)

Stamps

UNIT SUPERVISOR

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 20-1 NRC EXAMINATION SCENARIO 2

TITLE: LOI 20-1 NRC EXAMINATION SCENARIO 2

SCENARIO NUMBER: NRC 2

PATH: STAND ALONE

Validation: _____x_____ **Training:** _____x_____ **Operations:** _____x_____

	CANDIDATES
CRS	
ATC	
BOP	

A. **TITLE:** LOI 20-1 NRC EXAMINATION SCENARIO 2

B. **SCENARIO SETUP:**

1. IC-202

2. Special Instructions:

   a. The plant is operating at approximately 90% power.
   b. TBCLC pump C is in PTL with yellow tag.

3. Preset Conditions:

<SCHEDULE>

<ITEM row = "1">
<TIME>0</TIME>
<ACTION>Insert remote ED23 to OPEN on event 1</ACTION>
<DESCRIPTION>LPCI AC INPUT BKR &aposA&apos (71-INV-3A-1CB1) CNTRL SWTCH</DESCRIPTION>
</ITEM>

<ITEM row = "2">
<TIME>0</TIME>
<ACTION>Insert malfunction RR04:A to 20.00000 in 30 on event 2</ACTION>
<DESCRIPTION>RWR PMP A #1 SEAL FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "3">
<TIME>0</TIME>
<ACTION>Insert malfunction RR05:A after 180 to 30.00000 in 10 on event 2</ACTION>
<DESCRIPTION>RWR PMP A #2 SEAL FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "4">
<TIME>0</TIME>
<ACTION>Insert malfunction EG11 on event 3</ACTION>
<DESCRIPTION>H2 SEAL OIL SYSTEM, MAIN SEAL OIL PUMP TRIP</DESCRIPTION>
</ITEM>

<ITEM row = "5">
<TIME>0</TIME>
<ACTION>Insert malfunction EG12</ACTION>
<DESCRIPTION>H2 SEAL OIL SYSTEM, EMERGENCY SEAL OIL PUMP FAILS TO AUTOSTART</DESCRIPTION>
</ITEM>

<ITEM row = "7">

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        <TIME>0</TIME>
        <ACTION>Insert malfunction EP01 on event 4</ACTION>
        <DESCRIPTION>EARTHQUAKE - MAJOR</DESCRIPTION>
</ITEM>

<ITEM row = "8">
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        <ACTION>Insert malfunction MS02:A to 4.00000 in 480 on event 4</ACTION>
        <DESCRIPTION>(MSL A) STM LEAKAGE INSIDE PRIM
        CONTNMT</DESCRIPTION>
</ITEM>

<ITEM row = "9">
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        <ACTION>Insert malfunction RH10:A to 20.00000 in 30 on event 6</ACTION>
        <DESCRIPTION>RHR LOOP A SUCTION LINE PIPE FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "10">
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        <ACTION>Insert override RH-ZDI10AS4C after 5 to OPEN on event 16</ACTION>
        <DESCRIPTION>TORUS SUCT VLV 10MOV-13C</DESCRIPTION>
</ITEM>

<ITEM row = "11">
        <TIME>0</TIME>
        <ACTION>Insert override RH-ZLO10AS4C(1) after 5 to OFF on event 16</ACTION>
        <DESCRIPTION>RHR PUMP 10P-3C SUCT VALVE 10MOV-13C
        (GREEN)</DESCRIPTION>
</ITEM>

<ITEM row = "12">
        <TIME>0</TIME>
        <ACTION>Insert override RH-ZLO10AS4C(2) after 5 to OFF on event 16</ACTION>
        <DESCRIPTION>RHR PUMP 10P-3C SUCT VALVE 10MOV-13C
        (RED)</DESCRIPTION>
</ITEM>

<ITEM row = "13">
        <TIME>0</TIME>
        <ACTION>Insert malfunction MS02:A to 40.00000 in 600 on event 5</ACTION>
        <DESCRIPTION>(MSL A) STM LEAKAGE INSIDE PRIM CONTNMT</DESCRIPTION>
</ITEM>

<ITEM row = "14">
        <TIME>0</TIME>
        <ACTION>Insert malfunction RH10:A to 100.00000 in 300 on event 7</ACTION>
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</ITEM>
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```
<ITEM row = "15">
        <TIME>0</TIME>
        <ACTION>Insert override TC-ZDIPNIBVOJI to NORMAL on event 10</ACTION>
        <DESCRIPTION>BYPASS VALVE OPENING JACK SELECTOR
        INCREASE</DESCRIPTION>
</ITEM>

<ITEM row = "16">
        <TIME>0</TIME>
        <ACTION>Event Events/20-1 NRC/Scenario 2.evt</ACTION>
        <DESCRIPTION></DESCRIPTION>
</ITEM>

<ITEM row = "17">
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        <ACTION>Insert malfunction AN931_03 after 5 to On on event 16</ACTION>
        <DESCRIPTION>RHR A VLV OVERLOAD OR PWR LOSS</DESCRIPTION>
</ITEM>

<ITEM row = "18">
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        <ACTION>Insert remote RR09 to 0 on event 30</ACTION>
        <DESCRIPTION>RECIRC PUMP A SEAL PURGE FLOW REGULATOR
        46A</DESCRIPTION>
</ITEM>

<ITEM row = "19">
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        <ACTION>Insert remote RH47 to 100.00000 on event 25</ACTION>
        <DESCRIPTION>RHR KEEPFULL NORMAL LINEUP VALVE (260)</DESCRIPTION>
</ITEM>

<ITEM row = "20">
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        <ACTION>Insert remote RH46 to 100.00000 on event 26</ACTION>
        <DESCRIPTION>RHR KEEPFULL NORMAL LINEUP VALVE (274)</DESCRIPTION>
</ITEM>

</SCHEDULE>



<EVENT>

        <TRIGGER id="5" description="SCRAM full scram">(zlo5ads8a == 0) &amp;amp (zlo5ads8b ==
        0)</TRIGGER>
        <TRIGGER id="6" description="Torus spray in service">rhftorsprya&amp;lt-10 | rhftorspryb&amp;lt-
        10</TRIGGER>
        <TRIGGER id="7" description="Attempted closure of RHR pump C suction
        valve">zdi10as4c==0</TRIGGER>
```

<TRIGGER id="10" description="BOJM open 5%">zaopnibvoj&gt0.04</TRIGGER>
<TRIGGER id="16" description="RHR pump C suction valve switch to close">zdi10as4c==0</TRIGGER>

</EVENT>

C. SCENARIO SUMMARY:

The scenario will begin at approximately 90% power with TBCLC pump C out of service for maintenance. The crew will begin the shift by performing an EHC pump auto start capability test per OP-8. Then, the crew will perform a control rod pattern adjustment.

The AC input to the A LPCI inverter will fail. The crew will transfer the A LPCI inverter to the alternate AC supply. The SRO will determine the Technical Specification impact.

RWR pump A will develop a dual seal failure. This will require the crew to manually trip and isolate RWR loop A. Technical Specifications will be addressed by the SRO.

The Main Seal Oil pump will trip and the Emergency Seal Oil pump will fail to auto-start. The crew will respond to ARP 09-7-3-41 by starting the Emergency Seal Oil pump and normalizing the Seal Oil system for the loss.

A Seismic event will occur. This will cause a steam leak inside of the Primary Containment. Degrading Drywell conditions will require a manual scram to be initiated.

EOP-RC (Hot RPV Control) and EOP-PC (Hot Primary Containment Control) will be executed. Primary Containment parameters will require the Torus to be sprayed. When Torus spray is placed in service, the suction pipe from the Torus to the RHR system breaks. This break is un-isolable and results in Torus water level lowering. If the crew attempts to lower Reactor pressure using the BOJM, a failure will prevent opening TBVs past 5% open. The crew will determine that Torus water level cannot be maintained above 10.75 feet and a HPCI trip will be required. The crew will determine that Torus water level cannot be maintained above 9.58 feet and an Emergency Depressurization will be required.

The scenario will be terminated when all control rods are inserted, an Emergency Depressurization is in progress, and Reactor water level is controlled above 0".

Shift Turnover

The plant is operating at approximately 90% power.

TBCLC pump C is out of service for maintenance.

When you take the shift:

1. Test EHC pump B auto-start capability per OP-8 section G.2.
2. Secure EHC pump A following the test.
3. Perform a control rod pattern adjustment per the provided reactivity instructions.

Critical Tasks/Standards	
Critical Task #1:	**Given an un-isolable Torus water leak and the inability to maintain Torus water level above 10.75 feet, the crew will initiate a manual HPCI turbine trip, in accordance with EOP-PC. HPCI must be tripped before Torus water level lowers below 9.58 feet.**
Critical Task #2:	**Given an un-isolable Torus water leak and the inability to maintain Torus water level above 9.58 feet, the crew will perform an Emergency RPV Depressurization, in accordance with EOP-ED. The depressurization must be initiated before Torus water level lowers below 5.5 feet.**

D. TERMINATION CUES:

- All control rods are inserted
- An Emergency Depressurization is in progress
- Reactor water level is controlled above 0"

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 **EHC B Auto start test** (OP-8)	SRO	• Perform Crew Brief • Direct OP-8 section G.2 performed	
	BOP	• Depress and hold EHC PMP 94P-7B TEST pushbutton • Verify EHC PMP 94P-7B starts • Verify red light above EHC PMP 94P-7B TEST pushbutton is on • Verify annunciator 09-7-3-17 EHC HYD FLUID PMP B AUTO START is in alarm • Release EHC PMP 94P-7B TEST pushbutton • Verify annunciator 09-7-3-17 EHC HYD FLUID PMP B AUTO START is clear • Verify red light above EHC PMP 94P-7A TEST pushbutton is on • Place control switch for EHC PMP 94P-7B to CLOSE, spring return to normal • Stop EHC PMP 94P-7A by placing its control switch to TRIP, spring return to normal	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 2 **Perform Control Rod Pattern Adjustment**	SRO	• Direct ATC to position control rods per provided instructions • Provide oversight of reactivity manipulation	
Note: The reactivity instructions require moving control rods 10-27, 26-43, 42-27, and 26-11 from 16 to 12.	ATC	• While inserting control rods, monitor the following: o Nuclear instrumentation o Control rod position indication • Ensure ROD SEL PWR switch is in ON • Ensure control rod to be moved is selected by depressing rod select pushbutton on ROD SEL matrix, if necessary • Verify the following: o Select pushbutton is brightly backlit o Control rod indicating light is on o Annunciator 09-5-2-1 RWM ROD BLOCK RPIS INOP is clear • Momentarily place ROD MOVEMENT CNTRL switch to IN, spring return to OFF • Verify control rod latches in the expected even numbered position before ROD SETTLE light goes off • Verify ROD SETTLE light is off • Repeat as necessary	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 3 **LPCI Inverter Trips** (on Lead Examiner cue, insert Trigger 1)	BOP / ATC	• Recognize / report annunciator 09-8-3-02, LPCI MOV IPS A 71INV-3A AC INPUT LOSS	
Role Play: If dispatched to check LPCI inverter breaker, wait 2 minutes and then report that the LPCI inverter AC input breaker is tripped, but there are no other abnormal indications.	SRO	• Acknowledge report • Direct ARP response • Determine Technical Specification 3.8.4 Condition D requires LPCI A to be declared inoperable immediately • Declare LPCI A inoperable (TS 3.5.1 Condition A)	
	BOP	• Execute ARP 09-8-3-02: o IF alarm is not anticipated, AND LPCI MOV A PWR SUPP control switch is not in ALT PULL TO LOCK at panel 09-8, THEN place LPCI MOV Bus A on alternate feed as follows: ▪ Verify L-15 is energized at panel 09-8 ▪ Place LPCI MOV A PWR SUPP switch in ALT PULL TO LOCK at panel 09-8	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 4 **RWR Pump A Seal Failure** (on Lead Examiner cue, insert Trigger 2)	BOP / ATC	• Recognize / report RWR pump A seal degradation • Recognize / report rising Drywell leak rate, pressure, and temperature	
	SRO	• Direct shutdown and isolation of RWR pump A • Enter AOP-8 (Loss or Reduction of Reactor Coolant Flow) • Enter AOP-39 (Loss of Coolant) • Recognize Single Loop requirements of OP-27 or AOP-8 • Determine TS 3.4.1 Condition B entry is required (24 hours) • Determine TRO 3.3.B entry is required (1 hour)	
Role Play: When dispatched to close 02-2RWR-39A, wait 2 minutes, insert trigger 30, and then report task completion. **Note:** It is not expected for the crew to have time to establish single-loop scram and rod-block settings during the course of this scenario. Prior to these actions, the next event should be inserted.	BOP	• Shutdown and isolate RWR pump A per OP-27 section G.2 o Close RWR PMP A DISCH 02MOV-53A o Verify RWR PMP 02-2P-1A is tripped o Place RWR PMP 02-2P-1A control switch in PULL TO LOCK. o Verify open RWR MG A GEN FIELD BKR o Dispatch operator to close 02-2RWR-39A (RWR pump A seal purge upstr isol valve) o Close RWR PMP A SUCT 02MOV-43A o Ensure RWR MG DC LUBE OIL PMP 02-184P-3A is stopped	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Execute AOP-8 o Monitor for onset of thermal-hydraulic instability per OP-16 o Ensure RPV water level returns to normal and stabilizes o Determine operating point on the applicable Power-Flow Map o As time permits, coordinate with BOP to insert control rods due to position on Power-Flow Map o Demand a 3D Monicore case and review margin to core thermal limits	
	BOP	• Execute AOP-39 o May direct Operator to Vent the Torus per OP-37 as necessary to maintain primary containment pressure less than 2.7 psig o Direct Operator to isolate Control Room Ventilation per OP-55B section G.1 within 30 minutes o Direct Operator to isolate Relay Room Ventilation per OP-56 Section G within 30 minutes o Direct Operator to startup TSC Ventilation within 60 min	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 5 **Main Seal Oil Pump Trip** (on Lead Examiner cue, insert Trigger 3)	BOP / ATC	• Recognize / report trip of Main Seal Oil pump • Recognize / report low Seal Oil pressure	
Note: A preset malfunction prevents the Emergency Seal Oil pump from automatically starting.	SRO	• Acknowledge report • Direct ARP response	
Role Play: If dispatched to investigate alarm, wait 3 minutes and then report that the breaker for the Main Seal Oil Pump is tripped. **Role Play:** If dispatched as operator to close seal oil valves, wait 3 minutes and then report task completion.	BOP	• Execute ARP 09-7-3-41 • Start EMERG SEAL OIL PMP 94P-13 at panel 09-7 • Stop/green flag the following pumps at panel 09-7: o MAIN SEAL OIL PMP 94P-11 o SEAL OIL VAC PMP 94P-14 o RECIRC SEAL OIL PMP 94P-12 • Dispatch operator to close: o 94GSO-H-09 (vacuum tank inlet stop valve) o 94GSO-H-13 (hydrogen seal oil main pump P-11 disch check valve) • Monitor seal oil differential pressure • May dispatch operator to throttle 94GSO-H-21 (hydrogen seal oil 94GSO-H-19 bypass valve) to maintain 6 to 10 psig differential pressure)	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 6 **Seismic with Steam Leak in Drywell** (on Lead Examiner cue, insert Trigger 4)	BOP / ATC	• Recognize / report seismic alarm • Recognize / report numerous tank/water level alarms • Recognize / report high RB floor drain levels • Recognize / report rising Drywell pressure	
Role Play: When directed to place Control Room, Relay Room, and/or TSC filtered ventilation in service, acknowledge direction. **Note:** When Torus spray is established, Trigger 6 will automatically activate to start the Torus water leak.	SRO	• Acknowledge reports • Direct execution of AOP-14, Earthquake • Enter EOP-SC (Hot Secondary Containment Control) on high RB floor drain level • Enter AOP-39 (Loss of Coolant) • Direct a manual Reactor scram • Enter AOP-1, Reactor Scram • Enter EOP-RC (Hot RPV Control) on low Reactor water level, high Drywell pressure, and high Drywell temperature (as occur) • Enter EOP-PC (Hot Primary Containment Control) on high Drywell pressure and high Drywell temperature (as they occur) • Direct Reactor water level control 180-220" using Condensate/Feedwater • Direct Reactor pressure control 800-1000 psig using TBVs • Direct Control Room and Relay Room Ventilation isolated per OP-55B Section G within 30 minutes • Direct TSC filtered ventilation started per Section D of OP-59B within 60 minutes • May direct Core Spray and RHR injection prevented per EP-5 • When Primary Containment pressure exceeds 2.7 psig and before Torus pressure exceeds 15 psig, direct Torus Spray	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	ATC	• Enter AOP-1 • Depress MANUAL SCRAM A and MANUAL SCRAM B pushbuttons • Place RX MODE switch in SHUTDOWN • Fully insert IRMs and SRMs • Observe Reactor power lowering • Ensure closed SDIV vent and drain valves • Verify Main Turbine trips • Verify 4KV loads transfer to reserve power	
Role Plays: If asked about seismic indications in Relay Room, wait one minute, then report that the Seismic Relay Alarm light is lit, but the OBE Exceeded light is NOT lit. If asked about position of CAD valves, report 27SOV-129A is open (may also be determined using EPIC). If contacted as Nine Mile Point about seismic event, report that you have also felt a seismic event and had actuation of seismic alarms.	BOP	• Execute AOP-14 (Earthquake) o Ensure open one of the following valves at Panel 27CAD: ▪ 27SOV-129A, 27SOV-129B o Confirm seismic event using any of the following sources: ▪ JAF seismic instrumentation (Any TRIGGER LED on seismic indicator panel), NMP 2 seismic instrumentation, National Earthquake Information Center • Enter AOP-1 • Control Reactor water level 180-220" using Feedwater, HPCI, RCIC, and/or CRD • Verify Group 2 isolation per AOP-15	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: When Torus spray is established, Trigger 6 will automatically activate to start the Torus water leak.	ATC / BOP	• Initiate Torus spray: o IF RPV water level is LESS THAN 10 inches on fuel zone water level indication, AND the EOPs permit diverting LPCI flow, THEN place DW & TORUS SPRAY VLV OVERRIDE OF FUEL ZONE LVL 10A-S18A(B) keylock switch in MANUAL OVERRD o Place SPRAY CNTRL 10A-S17A(B) switch to MANUAL, spring return to normal o Verify white SPRAY PERM 10A-DS67A(B) light is on o Ensure available RHR pumps in RHR Loop A(B) are running o Open RHR TEST TORUS CLG & SPRAY 10MOV-39A(B) o Throttle TORUS SPRAY INBD VLV 10MOV-38A(B) to establish desired torus spray flow rate o WHEN RHR Loop A flow is GREATER THAN 1500 gpm, ensure closed MIN FLOW VLV 10MOV-16A(B) o Throttle RHR TEST & TORUS CLG 10MOV-34A(B) to divert excess flow to the torus to maintain > 6,500 gpm RHR Loop A(B) flow with one RHR pump operating or > 13,000 gpm RHR Loop A(B) flow with two RHR pumps operating • Establish RHRSW flow and temperature control: ▪ Start one of the RHRSW pumps ▪ Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm ▪ Start the second RHRSW pump if desired ▪ Throttle RHRSW DISCH VLV FROM HX A(B) 10MOV-89A(B) to establish 2500 to 4000 gpm per RHRSW pump • IF drywell or torus sprays are in service, THEN establish 4000 gpm per RHRSW pump • Close HX A(B) BYP VLV 10MOV-66A(B)	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
		• May terminate and prevent low pressure injection: o Core Spray Loop A o Place 14MOV-11A AUTO ACTUATION BYPASS SW 14A-S16A switch in bypass o Verify white 14MOV-11A AUTO ACTUATION BYPASS LT 14A-DS35A light is on o Ensure closed OUTBD INJ VLV 14MOV-11A o Ensure PMP 14P-1A is stopped o Core Spray Loop B o Place 14MOV-11B AUTO ACTUATION BYPASS SW 14A-S16B switch in bypass o Verify white 14MOV-11B AUTO ACTUATION BYPASS LT 14A-DS35B light is on o Ensure closed OUTBD INJ VLV 14MOV-11B o Ensure PMP 14P-1B is stopped o RHR Loop A o Place 10MOV-27A AUTO CONTROL BYPASS 10A-S23A o Verify white light above 10MOV-27A AUTO CONTROL BYPASS 10A-S23A is on o Ensure closed LPCI OUTBD INJ VLV 10MOV-27A o RHR Loop B o Place 10MOV-27B AUTO CONTROL BYPASS 10A-S23B o Verify white light above 10MOV-27B AUTO CONTROL BYPASS 10A-S23B is on o Ensure closed LPCI OUTBD INJ VLV 10MOV-27B	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 7 **RHR Suction Piping Leak; RHR Suction Fails to Isolate; Bypass Opening Jack Fails to Open Beyond 5%**	ALL	• Recognize / report lowering Torus water level	
Critical Task #1 **Critical Task #1 Standard:**		**Given an un-isolable Torus water leak and the inability to maintain Torus water level above 10.75', the crew will initiate a manual HPCI turbine trip, in accordance with EOP-PC. HPCI must be tripped before Torus water level lowers below 9.58 feet.** **Insert manual HPCI trip signal**	**Pass / Fail**
Critical Task #2 **Critical Task #2 Standard:**		**Given an un-isolable Torus water leak and the inability to maintain Torus water level above 9.58', the crew will perform an Emergency RPV Depressurization, in accordance with EOP-ED. The depressurization must be initiated before Torus water level lowers below 5.5 feet.** **Open 7 SRVs.**	**Pass / Fail**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
	SRO	• Enter EOP-PC on low Torus water level • Enter EOP-SC on high sump / area water levels o Ensure sumps are running • Direct leak isolation • Acknowledge inability to isolate leak • Direct make-up water to the Torus using OP-13B, as time permits • Monitor for 10.75 feet and 9.58 feet Torus water level • Determine Torus water level cannot be maintained > 10.75 feet • **Direct HPCI turbine tripped** • Enter EOP-RC • May direct rapid depressurization using TBVs • Acknowledge failure of BOJM to open TBVs past 5% • Determine Torus water level cannot be maintained > 9.58 feet • Determine Emergency Depressurization required • Enter EOP-ED • **Direct opening of all 7 ADS valves**	**Critical Task #1** **Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: When dispatched as operator to investigate Torus leak, wait 3 minutes, then report that there is a large leak on RHR pump C suction between the pump and the suction valve. If requested to close MOV-13C, wait 2 more minutes, then report that MOV-13C is stuck open. If requested to close MOV-151A, wait 2 more minutes, then report that MOV-151A is stuck open. **Role Play:** When dispatched to open 10RHR-260/274, wait 1 minute and insert Remotes to open directed valve (Triggers 25/26).	ATC / BOP	• Attempt to close RHR pump C suction valve • Recognize / report failure of RHR pump C suction valve (10MOV-13C) to close • Attempt to lineup Torus makeup per OP-13B section G.3(4), as time permits o Ensure open 10RHR-274(260) (RHR loop A(B) containment spray keep-full cond xfer connection valve) o Open HX A INBD VENT VLV 10MOV-166A(B) o Open HX A OUTBD VENT VLV 10MOV-167A(B) • **Insert manual HPCI trip signal prior to 10.75 feet** • **Open 7 SRVs**	**Critical Task #1** **Critical Task #2**

Termination Criteria:

- All control rods are inserted
- Emergency Depressurization is in progress
- Reactor water level is controlled above 0"

Shift Turnover

The plant is operating at approximately 90% power.

TBCLC pump C is out of service for maintenance.

When you take the shift:

1. Test EHC pump B auto-start capability per OP-8 section G.2.
2. Secure EHC pump A following the test.
3. Perform a control rod pattern adjustment per the provided reactivity instructions.

Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Control Rod Pattern Adjustment

Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Insert	**10-27**	16	12	Notch	NA	-	
	2	Insert	**26-43**	16	12	Notch	NA	-	
	3	Insert	**42-27**	16	12	Notch	NA	-	
	4	Insert	**26-11**	16	12	Notch	NA	-	

Prepared By: *Joe Allen*
(RxEng)

SM Approval: *Dave Roe*
(Shift Manager)

Reviewed By: *Bob Jones*
(RxEng or SRO)

Stamps

CONTROL ROOM OPERATOR

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Control Rod Pattern Adjustment

Today

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Insert	**10-27**	16	12	Notch	NA	-	
	2	Insert	**26-43**	16	12	Notch	NA	-	
	3	Insert	**42-27**	16	12	Notch	NA	-	
	4	Insert	**26-11**	16	12	Notch	NA	-	

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

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Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Control Rod Pattern Adjustment

Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Insert	**10-27**	16	12	Notch	NA	-	
	2	Insert	**26-43**	16	12	Notch	NA	-	
	3	Insert	**42-27**	16	12	Notch	NA	-	
	4	Insert	**26-11**	16	12	Notch	NA	-	

Prepared By: *Joe Allen*
(RxEng)

SM Approval: *Dave Roe*
(Shift Manager)

Reviewed By: *Bob Jones*
(RxEng or SRO)

Stamps

UNIT SUPERVISOR

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

LOI 20-1 NRC EXAMINATION SCENARIO 3

TITLE:	**LOI 20-1 NRC EXAMINATION SCENARIO 3**
SCENARIO NUMBER:	**NRC 3**
PATH:	**STAND ALONE**

Validation: _____x_____ Training: _____x_____ Operations: _____x_____

	CANDIDATES
CRS	
ATC	
BOP	

A. **TITLE:** LOI 20-1 NRC EXAMINATION SCENARIO 3

B. **SCENARIO SETUP:**

1. IC-203

2. Special Instructions:

   a. The plant is operating at approximately 100% power.
   b. EHC pump B is out of service for maintenance.
   c. Fitz-Scriba Line 10 is out of service.

3. Preset Conditions:

<SCHEDULE>

<ITEM row = "1">
<TIME>0</TIME>
<ACTION>Insert override RR-ZAID218416B from 64.00000 to 35.00000 in 180 on event 1</ACTION>
<DESCRIPTION>MG SET B DIGITAL SPEED CONTROL</DESCRIPTION>
</ITEM>

<ITEM row = "2">
<TIME>0</TIME>
<ACTION>Insert malfunction ED18:B on event 2</ACTION>
<DESCRIPTION>4.16KV BUS 10600 FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "3">
<TIME>0</TIME>
<ACTION>Insert malfunction RX01 to 5.00000 in 60 on event 3</ACTION>
<DESCRIPTION>FUEL CLADDING FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "4">
<TIME>0</TIME>
<ACTION>Insert remote DG23:B to MAINT on event 20</ACTION>
<DESCRIPTION>EDG-B LOCAL MAINTENANCE SWITCH</DESCRIPTION>
</ITEM>

<ITEM row = "5">
<TIME>0</TIME>
<ACTION>Insert remote DG23:D to MAINT on event 21</ACTION>
<DESCRIPTION>EDG-D LOCAL MAINTENANCE SWITCH</DESCRIPTION>
</ITEM>

<ITEM row = "6">
<TIME>0</TIME>
<ACTION>Insert malfunction HP06 after 120 from 0.10000 to 0.40000 in 300 on

```
event 4</ACTION>
        <DESCRIPTION>HPCI STEAM LINE BREAK</DESCRIPTION>
</ITEM>

<ITEM row = "7">
        <TIME>0</TIME>
        <ACTION>Insert malfunction HP11</ACTION>
        <DESCRIPTION>HPCI 23MOV-15 AUTO ISOLATION FAILURE</DESCRIPTION>
</ITEM>

<ITEM row = "8">
        <TIME>0</TIME>
        <ACTION>Insert remote HP03 to OPEN on event 16</ACTION>
        <DESCRIPTION>23-MOV-15 CIRCUIT BREAKER</DESCRIPTION>
</ITEM>

<ITEM row = "9">
        <TIME>0</TIME>
        <ACTION>Insert malfunction AD07:C</ACTION>
        <DESCRIPTION>RX PRESS RELIEF VLV (2E-RV2-71C) FAILS TO
                OPEN</DESCRIPTION>
</ITEM>

<ITEM row = "10">
        <TIME>0</TIME>
        <ACTION>Insert malfunction AD07:D</ACTION>
        <DESCRIPTION>RX PRESS RELIEF VLV (2E-RV2-71D) FAILS TO
                OPEN</DESCRIPTION>
</ITEM>

<ITEM row = "11">
        <TIME>0</TIME>
        <ACTION>Insert malfunction AD07:E</ACTION>
        <DESCRIPTION>RX PRESS RELIEF VLV (2E-RV2-71E) FAILS TO
                OPEN</DESCRIPTION>
</ITEM>

<ITEM row = "12">
        <TIME>0</TIME>
        <ACTION>Insert malfunction AD07:G</ACTION>
        <DESCRIPTION>RX PRESS RELIEF VLV (2E-RV2-71G) FAILS TO
        OPEN</DESCRIPTION>
</ITEM>

<ITEM row = "13">
        <TIME>0</TIME>
        <ACTION>Insert malfunction AD07:H</ACTION>
        <DESCRIPTION>RX PRESS RELIEF VLV (2E-RV2-71H) FAILS TO
                OPEN</DESCRIPTION>
</ITEM>
```

```
        <ITEM row = "14">
                <TIME>0</TIME>
                <ACTION>Insert malfunction HP06 to 2.0000 in 300 on event 16</ACTION>
                <DESCRIPTION>HPCI STEAM LINE BREAK</DESCRIPTION>
        </ITEM>

        <ITEM row = "15">
                <TIME>0</TIME>
                <ACTION>Event Events/20-1 NRC/Scenario 3.evt</ACTION>
                <DESCRIPTION></DESCRIPTION>
        </ITEM>

</SCHEDULE>



<EVENT>

        <TRIGGER id="1" description="Recirc B flow below threshold">rrfpa(2) &lt=
        4125</TRIGGER>
        <TRIGGER id="4" description="SCRAM full scram">(zlo5ads8a == 0) &amp (zlo5ads8b ==
        0)</TRIGGER>
        <TRIGGER id="16" description="HPCI MOV-15 green light
        on">zlo23as1(1)==1</TRIGGER>

 /EVENT>
```

C. SCENARIO SUMMARY:

The scenario will begin at approximately 100% power with a down-power scheduled to support water box cleaning. EHC pump B is out of service for maintenance. Fitz-Scriba Line 10 is out of service. The crew will begin the shift by restoring Fitz-Scriba Line 10 to service per OP-45.

Next, the crew will begin a down-power with Recirculation (RWR) flow. During the flow reduction, the RWR Pump B controller will drift low. The crew will execute AOP-8 (Unexpected Change in Core Flow), AOP-32 (Unplanned Power Change), and OP-27 (Recirculation System). The SRO will determine the Technical Specification impact due to this condition.

An electrical fault on the 4160 VAC 10600 bus will occur. The crew will execute AOP-19 (Loss of 10600 Bus) and AOP-60 (Loss of RPS Bus B). The SRO will address Technical Specifications.

Fuel clad damage will occur and radiation levels in the Turbine Building will begin to rise. The crew will enter AOP-3 (High Activity in Reactor Coolant or Off-gas) and attempt to minimize the rise in radiation levels. A manual scram will be required.

Following the scram, a steam leak will develop from HPCI into the Reactor Building. The crew will attempt to isolate HPCI but the leak will be unisolable. Reactor Building area temperatures and radiation levels will rise. The crew will enter EOP-SC (Hot Secondary Containment Control). Two Reactor Building area temperatures will exceed Max Safe, requiring the crew to perform an Emergency RPV Depressurization.

The scenario will be terminated when all control rods are inserted, an Emergency Depressurization is in progress, and RPV level is controlled above zero inches.

Shift Turnover

The plant is operating at approximately 100% power.

EHC pump B is out of service for maintenance.

Fitz-Scriba Line 10 is out of service.

When you take the shift:

1. Restore Fitz-Scriba Line 10 to service per OP-45 section G.6. The procedure is in progress up to step G.6.6.

2. Lower Reactor power using Recirculation flow per the provided reactivity instructions.

Critical Tasks/Standards	
Critical Task #1:	**Given a fuel failure, the crew will scram the Reactor, in accordance with AOP-3. The scram must be inserted within 20 minutes of when the Off Gas radiation timer initiates.**
Critical Task #2:	**Given an un-isolable primary system discharging into Secondary Containment and two areas exceeding Maximum Safe Temperatures, the crew will perform an emergency RPV depressurization, in accordance with EOP-SC. The emergency RPV depressurization must be initiated within 15 minutes of when the second Maximum Safe Temperature is exceeded.**

D. TERMINATION CUES:

- All control rods inserted, an Emergency Depressurization is in progress, and RPV level is controlled above zero inches.

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Simulator in RUN Recorder and Alarm Power ON Simulator Checklist Complete			
Provide Turnover (Attach. 1)			
After the shift turnover, allow no more than five minutes for panel walkdown	All	• Walkdown the control panels and assume the watch	
Event 1 **Restore Fitz-Scriba Line 10 to Service**	SRO	• Perform crew brief • Direct BOP to restore Fitz-Scriba Line 10 to service per OP-45 section G.6, starting at step G.6.6	
Note: If breaker 10042 fails to close, tell the crew as an electrical maintenance supervisor to re-attempt closing the breaker by holding the control switch longer (until closed indications are obtained).	BOP	• Restore Fitz-Scriba Line 10 to service per OP-45 section G.6, starting at step G.6.6: • Ensure closed MOD 10041 • Ensure closed MOD 10043 • Place BKR 10042 SYNCH SW in ON • Verify the following at panel 09-7: o Voltages are approximately the same on INCOMING and RUNNING voltmeters o GEN BKRS 10042 & 10052 synchroscope is stopped • Close GEN BKR 10042 • Place BKR 10042 SYNCH SW in OFF and remove handle	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 2 **Lower Reactor Power with Recirculation Flow**	SRO	• Direct ATC to lower power to 90% with Recirc flow • Provide oversight for reactivity manipulation	
	ATC	• Lower Recirc flow alternately with RWR MG A(B) SPEED CNTRL • Monitor APRMs, CTP, Recirc flow, Reactor water level	
	BOP	• Assist ATC with peer checks and plant monitoring	
Event 3 **RWR B speed drifts low** (automatically occurs after RWR B flow is lowered)	ATC	• Recognize / report RWR B speed controller is malfunctioning	
Note: The decision to restore loop flow mismatch may be made from OP-27 precaution C.2.14 or Tech Specs. **Role Play:** If asked as Reactor Engineering how to respond, recommend restoring loop flow mismatch by rapidly lowering RWR loop A flow.	SRO	• Acknowledge report • Direct lock-up of RWR B scoop tube per OP-27 Section G.6 • Enter AOP-8 (Unexpected Change in Core Flow) • Enter AOP-32 (Unexplained/Unanticipated Reactivity Change) • Direct lowering RWR A flow to restore loop flow mismatch (has 24 hr to perform) – TS 3.4.1 Condition B	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: The allowable mismatch is 3.85 Mlbm/hr, as indicated on RWR jet pump loop flow meters 02-3FI-92A and B.	ATC	• Place RWR B SCOOP TUBE control switch to TRIP • Place SCOOP TUBE B AUTO UNLOCK control switch in ON • Lower RWR A flow to restore loop flow mismatch less than or equal to either 5% of rated core flow (if >70% flow) or 10% of rated core flow (if <70% flow) • Monitor for Thermal Hydraulic Instabilities o May select control rod(s) to monitor LPRMs	
	BOP	• Monitor Feedwater response	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 4 **Electrical Fault on 10600 Bus** (on Lead Examiner Cue: ACTIVATE TRIGGER 2)	ALL	• Recognize / report loss of Bus 10600 • Recognize / report start of EDGs B and D • Recognize / report half scram	
	SRO	• Acknowledge reports • Enter AOP-19 (Loss of 10600 Bus) • Enter AOP-60 (Loss RPS B) • Determine Technical Specification 3.8.7 Condition A requires restoring Bus 10600 within 8 hours	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Note: Drywell Cooling and ventilation task are performed on Panel 09-75. **Role Play:** If dispatched to investigate Bus 10600, wait two minutes, then report that the normal supply breaker (10614) is tripped and appears to have some damage to the cubicle door (no smoke, no fire). **Role Play:** As NPO when dispatched to 93ECP-B(D), use REMOTE **Triggers 20 and 21** to place EDG B(D) control switch to MAINT, report completed. **Role Play:** If dispatched to restore RPS power, report preparations / briefs will begin.	BOP	• Execute AOP-19 • Dispatch NPO to EDGs • Shutdown EDG B and D: o Ensure EDG B LOAD BKR 10602 (612) is tripped and placed in PULL TO LOCK o Ensure EDG B & D TIE BKR 10604 is tripped o Place EDG B(D) CONTROL SWITCH in MAINT at panel 93ECP-B(D) o Place EDG B(D) CNTRL control switch to STOP at panel 09-8 • Ensure all available Drywell Cooling Assembly Fans (68FN-2A, -2C, -4A, and -4C) are running • Isolate Reactor Building Ventilation as follows: • Ensure Standby Gas Treatment Filter Train A is running per OP-20: o Ensure open ABOVE EL 369' SUCT 01-125MOV-11 o Ensure open TRAIN A INLET 01-125MOV-14A o Verify the following: ▪ White light for AIR HTR 01-125E-5A is on ▪ Red light for AIR HTR 01-125E-5A is on ▪ TRAIN A CLG VLV 01-125MOV-100A is closed ▪ FN DISCH 01-125MOV-15A is open ▪ TRAIN A FN 01-125FN-1A is running	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
		○ If SGT Train B is shutdown, then verify flow rate on SGT FLOW 01-125FI-106B: ▪ RB un-isolated – Approximately 6000 scfm ▪ RB isolated – Approximately 5600 to 5800 scfm • Depress RB VENT ISOL A pushbutton at panel 09-75 • Verify reactor building isolation per Section G of OP-51A with the following exceptions: ○ OUTBD SUPP ISOL 66AOV-100B ○ INBD EXH ISOL 66AOV-101B • Executes AOP-60 (Loss of RPS Bus B Power)	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Event 5 **Fuel Failure** (on Lead Examiner Cue: ACTIVATE TRIGGER 3)	BOP / ATC	• Recognize / report annunciators: o 09-3-2-27, OFF GAS RAD MON HI o 09-3-2-10, OFF GAS TIMER INITIATED o 09-3-2-38, OFF GAS RAD MON HI-HI • Recognize / report rising Offgas and Main Steam Line rad monitors • Recognize / report Turbine Building and Reactor Building radiation monitor alarms	
Critical Task #1		**Given a fuel failure, the crew will scram the Reactor, in accordance with AOP-3.** **The scram must be inserted within 20 minutes of when the Off Gas radiation timer initiates.**	**Pass / Fail**
	SRO	• Acknowledge reports • Enter AOP-3 (High Activity in Reactor Coolant or Off-gas) • Enter EOP-SC (Hot Secondary Containment Control) • Direct power reduction • Direct evacuation of affected areas • **Direct Reactor scram** • Enter AOP-1 (Reactor Scram) • Enter EOP-RC (Hot RPV Control) on low RPV water level • Direct RPV water level restored and maintained 180-220" using Feedwater, CRD, HPCI, and/or RCIC • Direct RPV pressure controlled 800-1000 psig using Turbine Bypass Valves and/or SRVs • May direct closure of MSIVs • Enter AOP-15 (Isolation Verification and Recovery)	**Critical Task #1**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: If directed to lower RWR B flow in the field, use Remotes RR06 and RR08 as required.	ATC	• May coordinate with operator in the field to lower RWR flow • Insert CRAM rods • May continue inserting control rods per shutdown sequence • **Depress manual scram pushbuttons** • Place Mode Switch to Shutdown • Report all control rods have inserted • Enter AOP-1 o Fully insert IRMs and SRMs o Observe Reactor power downscale on APRMs o Observe SDIV vent and drain valves closed o Ensure Main Turbine is tripped o Verify 4 KV loads transfer to reserve power o Transfer APRM/IRM recorders to IRMs o Down-range IRMs	**Critical Task #1**
	BOP	• Execute AOP-3 • Direct Chemistry to sample reactor coolant and off-gas • Direct Radiation Protection to survey for changing radiation levels throughout the plant • Make evacuation announcement • Enter AOP-1 • Control Reactor water level 180-220" using Feedwater, HPCI, RCIC, and/or CRD • Verify Group 2 isolation per AOP-15 • Close MSIVs, as directed • May control pressure on SRVs, as directed	

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION

Events 6 & 7
HPCI Steam Leak; HPCI Fails to Isolate; Five ADS Valves Fail to Open
 	
Note:
The steam leak automatically inserts approximately 2 minutes after the scram.
	BOP / ATC	• Recognize / report rising RB pressure
		• Recognize / report rising HPCI area temperatures
		• Recognize / report HPCI alarms
		  o 09-3-3-2 DIV I AMBIENT TEMP HI
		  o 09-3-3-33 HPCI ISOL TRIP INITIATED	

Critical Task #2		**Given an un-isolable primary system discharging into Secondary Containment and two areas exceeding Maximum Safe Temperatures, the crew will perform an emergency RPV depressurization, in accordance with EOP-SC.** **The emergency RPV depressurization must be initiated within 15 minutes of when the second Maximum Safe Temperature is exceeded.**	**Pass / Fail**
	SRO	• Acknowledge reports • Direct maximizing Reactor Building area cooling • Direct local area evacuation of Reactor Building • May direct a Reactor depressurization • Monitor for two Max Safe values (radiation and temperature) • Recognize / acknowledge two area temperatures above Max Safe Value • Enter EOP-ED • **Direct 7 ADS valves opened** • Acknowledge 5 ADS SRVs fail to open • **Direct opening additional SRVs** • Acknowledge 6 SRVs are open	**Critical Task #2**

INSTRUCTOR ACTIVITY	POSITION	OPERATOR ACTIONS/STANDARD	COMMENTS/EVALUATION
Role Play: If dispatched to Reactor Building, wait 2 minutes and then report that there is a lot of steam in the Reactor Building and you have exited the building.	BOP / ATC	• Dispatch NPO to inspect drywell entrance • Recognize / report 23MOV-15 (INBD STM SUPP VLV) does not isolate automatically • Manually attempt to close 23MOV-15 • Report 23MOV-15 cannot be closed due to MOV being de-energized • Report two area temperatures above Max Safe Value • **Attempt to open 7 ADS valves** • Report 5 ADS valves failed to open • **Open additional SRVs** • Report a total of 6 SRVs are open	**Critical Task #2**

Termination Criteria:

All control rods inserted, an Emergency Depressurization is in progress, and RPV level is controlled above zero inches.

Shift Turnover

The plant is operating at approximately 100% power.

EHC pump B is out of service for maintenance.

Fitz-Scriba Line 10 is out of service.

When you take the shift:

1. Restore Fitz-Scriba Line 10 to service per OP-45 section G.6. The procedure is in progress up to step G.6.6.
2. Lower Reactor power using Recirculation flow per the provided reactivity instructions.

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Reduction Today

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Lower power to 90% RTP	-	-	-	RWR	NA	-	
	2	Wait for Rx Engineering analysis	-	-	-	-	-	-	

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

CONTROL ROOM OPERATOR

Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Reduction Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Lower power to 90% RTP	-	-	-	RWR	NA	-	
	2	Wait for Rx Engineering analysis	-	-	-	-	-	-	

Prepared By: Joe Allen
(RxEng)

SM Approval: Dave Roe
(Shift Manager)

Reviewed By: Bob Jones
(RxEng or SRO)

Stamps

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Sheet 1 of 1

Reactivity/monitoring Steps – (site specific RWR control sheet format is to be used)

Power Reduction Today

Page 1 of 1

Init	Step	Action	Rod	From Notch	To Notch	Method	Cplg Chk	RSCS Grp	Notes
	1	Lower power to 90% RTP	-	-	-	RWR	NA	-	
	2	Wait for Rx Engineering analysis	-	-	-	-	-	-	

Prepared By: *Joe Allen*
(RxEng)

SM Approval: *Dave Roe*
(Shift Manager)

Reviewed By: *Bob Jones*
(RxEng or SRO)

Stamps

UNIT SUPERVISOR