

# ADMINISTRATIVE JOB PERFORMANCE MEASURE

A1JPM-RO-HTBAL2

Page 1 of 4

UNIT: 1 REVISION # 0 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-HTBAL2

SYSTEM: A.1 – Conduct of Operations

TASK: Perform a Manual Heat Balance Calculation

JTA: ANO-RO-ADMIN-NORM-182

KA VALUE RO 2.9 SRO 4.0 KA REFERENCE: 2.1.12

APPROVED FOR ADMINISTRATION TO: RO X SRO \_\_\_\_\_

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUTED: RO X SRO \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: PLANT SITE: \_\_\_\_\_ SIMULATOR: X LAB: \_\_\_\_\_

ACTUAL TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: X

APPROXIMATE COMPLETION TIME IN MINUTES: 45 MINUTES

REFERENCES: 1103.016 Heat Balance Calculation

EXAMINEE'S NAME: \_\_\_\_\_ SSN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS: \_\_\_\_\_

START TIME: \_\_\_\_\_ STOP TIME: \_\_\_\_\_ TOTAL TIME: \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARTED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** It is desired to verify the accuracy of the PMS calculated Rx Thermal Power (XPP)  
in order to ensure compliance with Technical Specification SR 3.3.1.2.  
All data has been recorded and 1103.016, Att. 2 has been started.

**TASK STANDARD:** The examinee has correctly calculated Secondary Side Heat Balance in Att. 2, step 2.4 and  
Best Estimate of Reactor Power, step 2.6.

**TASK PERFORMANCE AIDS:** Copies of partially completed 1103.016.

**INITIATING CUE:**

The CRS requests that you complete the remainder of 1103.016, Attachment 2, Manual Heat Balance, beginning with step 9.2.

**CRITICAL ELEMENTS (C):** 1

(C)	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
<b>NOTE: Provide examinee with a copy of partially completed 1103.016.</b>					
(C)	1. Perform calculations in Attachment 2.	<p>Examinee calculated %FP<sub>SEC</sub> as 99.989% per step 2.4 in Att. 2. Accept answers between 99.7 and 100.2%.</p> <p>Examinee calculated %FP as 99.989% per step 2.4 in Att. 2. Accept answers between 99.7 and 100.2%.</p>			

**END**

**JPM INITIAL TASK CONDITIONS:**

- It is desired to verify the accuracy of the PMS calculated Rx Thermal Power (XPP) in order to ensure compliance with Technical Specification SR 3.3.1.2.
- All data has been recorded and 1103.016, Att. 2 has been started.

**INITIATING CUE:**

- The CRS requests that you complete the remainder of 1103.016, Attachment 2, Manual Heat Balance, beginning with step 9.2.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-DWG1

Page 1 of 4

UNIT: 1 REV # 0 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-DWG1

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC – CONDUCT OF OPERATIONS

TASK: DETERMINE ISOLATION BOUNDARY USING DRAWINGS AND/OR PRINTS

JTA#: ENS-OPER-PTAG-ADMIN-1

KA VALUE RO: 2.8 SRO: 3.1 KA REFERENCE: 2.1.24

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: X PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 10 MINUTES

REFERENCE(S): 1107.001, M-213 sh. 2

EXAMINEE'S NAME: \_\_\_\_\_ SSN \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

## **ADMINISTRATIVE JOB PERFORMANCE MEASURE**

TUOI: A1JPM-RO-DWG1

Page 2 of 4

### **EXAMINEE'S COPY**

#### **JPM INITIAL TASK CONDITIONS:**

- The WCO reports the Laundry Drain pump (P-45) has a severe seal leak.

#### **INITIATING CUE:**

The CRS directs you to determine the isolation boundary (electrical and mechanical) for Laundry Drain pump (P-45) in accordance with approved drawings and procedures.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-DWG1

Page 3 of 4

### THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** The WCO reports the Laundry Drain pump (P-45) has a severe seal leak.

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**TASK STANDARD:** The examinee has correctly identified the isolation boundary for Laundry Drain pump (P-45)  
using controlled drawings and procedures.

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**TASK PERFORMANCE AIDS:** Simulator drawings and procedures

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## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-DWG1

Page 4 of 4

### INITIATING CUE:

The CRS directs you to determine the isolation boundary (electrical and mechanical) for Laundry Drain pump (P-45) in accordance with approved drawings and procedures.

**CRITICAL ELEMENTS (C)**\_\_\_\_\_ 1 \_\_\_\_\_

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
<b>NOTE:</b> <i>Inform examinee that this task is to identify the isolation boundary only, a tagout will not be prepared.</i>					
(C)	1. Determine isolation boundaries.	Examinee determined proper boundary isolations to include: <ul style="list-style-type: none"><li>• B3134, power supply</li><li>• LZ-2A, Suction from T-19</li><li>• LZ-2B, Suction from T-19</li><li>• LZ-4411A, Suction from T-109</li><li>• LZ-4411B, Suction from T-109</li><li>• LZ-4, Discharge</li><li>• Open ABS-25 casing drain(not required for full credit)</li></ul> (Note: Examinee should determine boundary isolations using controlled procedures and drawings, specifically 1107.001 and M-213 sh. 2).			

**END**



## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-SURV3

Page 1 of 4

UNIT: 1 REV # 2 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-SURV3

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC – EQUIPMENT CONTROL

TASK: PERFORM SURVEILLANCE TESTS

JTA#: ANO-RO-ADMIN-NORM-23

KA VALUE RO: 3.0 SRO: 3.4 KA REFERENCE: 2.2.12

APPROVED FOR ADMINISTRATION TO: RO: X SRO: \_\_\_\_\_

TASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 10 MINUTES

REFERENCE(S): 1104.036, Emergency Diesel Generator Operation

EXAMINEE'S NAME: \_\_\_\_\_ SSN \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

## **ADMINISTRATIVE JOB PERFORMANCE MEASURE**

TUOI: A1JPM-RO-SURV3

Page 2 of 4

### **EXAMINEE'S COPY**

#### **JPM INITIAL TASK CONDITIONS:**

- A surveillance test of DG1 Fuel Transfer Pump P-16A is in progress.
- Supplement 5 of 1104.036 up to step 2.6 is completed.

#### **INITIATING CUE:**

The CRS directs you to complete the surveillance test of P-16A in accordance with 1104.036, Supplement 5.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-SURV3

Page 3 of 4

### THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** A surveillance test of DG1 Fuel Transfer Pump P-16A is in progress.

Data gathering of Supplement 5 of 1104.029 up to step 2.6 is completed.

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**TASK STANDARD:** The examinee calculates pump flow rate correctly on Supplement 5 of 1104.036 and

determines the data is below the minimum in the acceptance criteria.

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**TASK PERFORMANCE AIDS:** 1104.036, Supplement 5, completed to step 2.6.

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## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-SURV3

Page 4 of 4

### INITIATING CUE:

The CRS directs you to complete the surveillance test of P-16A in accordance with 1104.036, Supplement 5.

**CRITICAL ELEMENTS (C)** 2, 3, 4

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Review 1104.036, Supplement 5.	Examinee reviewed 1104.036, Supplement 5.	—	—	—
<b>NOTE: Inform examinee that the stopwatch reads 9:41.36 (9 minutes, 41.36 seconds).</b>					
(C)	2. Calculate pump flow rate.	Examinee correctly calculated pump flow rate.  Per note, 41.36 seconds equals .68 minutes.  $(200 - 105) / 9.68 = 9.81 \text{ gpm}$	—	—	—
(C)	3 Record flow rate in Section 3.0.	Examinee recorded flow rate in Section 3.0.	—	—	—
(C)	4 Evaluate flow rate, compare to "LIMITING RANGE FOR OPERABILITY" value.	Examinee circled "NO" in column titled "IS DATA WITHIN LIMITING RANGE".  Examinee discussed declaring pump inoperable, notifying SM, writing Condition Report, initiating corrective action, and referring to Tech Specs.	—	—	—
<p style="text-align: center;"><b>NOTE:</b>  <i>The SM or CRS will consult Tech Specs to determine operability, it is the RO's responsibility to report the inoperability of P-16A only. Diesel operability will be determined by the SM/CRS.</i>  <i>Inform examinee that steps 2.8 through 2.11 have been completed.</i></p>					

END

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: 1/12/2004

TUOI NUMBER: A1JPM-RO- DOSE-XX

System/Duty Area: Administrative Topic-Radiation Control

Task: Calculate Stay times for yourself and another operator

JA#

KA Value RO 2.6 SRO 3.3 KA Reference G 2.3.10

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☐ Outside CR: ☐ Both: ☒

Suggested Testing Environment And Method (Perform Or Simulate): Simulate

Plant Site:  Simulator:  Perform  Lab:

Position Evaluated: RO: X SRO: X

Actual Testing Environment: Simulator:  Plant Site:  Lab

Testing Method: Simulate:  Perform:

Approximate Completion Time In Minutes: 10 Minutes

Reference(S): HP Survey Map of P36C, Pump Room 54.

Examinee's Name:  SSN:

Evaluator's Name:

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory:  Unsatisfactory:

Performance Checklist Comments:

Start Time  Stop Time  Total Time

Signed  Date:

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

You are an AO with the plant at full power. A hot spot has developed on Makeup PUMP P36C. You and another AO will be working in the vicinity of the reduction gear assembly in order to flush the lines reduce the hot spot radiation field.

Using the supplied survey map, determine the individual stay times **for yourself AND the other AO** without exceeding the annual administrative dose limit (Ignore dose received during transit). You have an accumulated annual Whole Body dose of 1805 mR (ANO records). The other AO has an accumulated annual Whole Body dose of 1820 mR (ANO records). No additional dose has been received at any other site.

**Also**, calculate stay time if the air in the pump room was contaminated with a level of 0.29 DAC (stochastic) assuming no respirators are used.

Calculations should be based on ANO Unit 1 Administrative dose limits. **Provide answers with 3 significant figures (example 4.50)**. Do not consider ALARA task requirements. Any required dose extensions have been processed and approved.

**TASK STANDARD:**

The examinee has correctly determined the stay times for himself and the other AO on the assignment.

**TASK PERFORMANCE AIDS:**

HP Survey map of P36C Pump Room, Room number 54.

**SIMULATOR SETUP:**

N/A

INITIATING CUE: Determine the Stay time for you and the other AO on the job. Also determine the stay time if the air in the pump room was contaminated with a level of 0.29 DAC (stochastic) assuming no respirators are used. **Provide answers with 3 significant figures (example 4.50).**

CRITICAL ELEMENTS (c): 1,2, and 3

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
C	1. Determine the HIGHEST general area dose rate in the area of the reduction gear assembly to be used from the survey map.	Examinee has determined the HIGHEST general area dose rate in the area of the reduction gear assembly to be used from the survey map of P36C pump room.  (60 mR/hr)	_____	_____	_____
C	2. Determine Stay time (to 3 significant figures) with no airborne contamination for both operators.	Examinee has determined that the stay time for him/her is 3.25 hrs and the stay time for the other AO is 3.00 hrs plus or minus 0.01 hours.	_____	_____	_____
C	3. Determine Stay time( to 3 significant figures) WITH airborne contamination for both operators.	Examinee has determined that the stay time for him/her is 3.21hrs and the stay time for the other AO is 2.96 hrs plus or minus 0.01 hours.	_____	_____	_____
<b>EXAMINER'S CUE: This concludes the JPM.</b>					

END

## EXAMINEE'S COPY

### INITIAL CONDITIONS:

You are an AO with the plant at full power. A hot spot has developed on Makeup PUMP P36C. You and another AO will be working in the vicinity of the reduction gear assembly in order to flush the lines reduce the hot spot radiation field.

Using the supplied survey map, determine the individual stay times and another AO without exceeding the annual administrative dose limit (Ignore dose received during transit). You have an accumulated annual Whole Body dose of 1810 mR (ANO records). The other AO has an accumulated annual Whole Body dose of 1820 mR (ANO records). No additional dose has been received at any other site.

Also calculate stay time if the air in the pump room was contaminated with a level of 0.29 DAC (stochastic) assuming no respirators are used.

Calculations should be based on ANO Unit 1 Administrative dose limits. **Provide answers with 3 significant figures (example 4.50).** Do not consider ALARA task requirements. Any required dose extensions have been processed and approved.

### INITIATING CUE:

Determine the Stay time for you and the other AO on the job. Also determine stay time if the air in the pump room was contaminated with a level of 0.29 DAC (stochastic) assuming no respirators are used. **Provide answers with 3 significant figures (example 4.50).**



TUOI NUMBER:  
A1JPM-RO-EP-XX

**Administrative Questions**  
**Page 1 of 4**

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: 1/12/2004

TUOI NUMBER: A1JPM-RO- EP-XX

System/Duty Area: Administrative Topic-Emergency Plan

Task: Answer two questions regarding RO responsibilities in Emergency Plan implementation

JA#

KA Value RO 3.3 SRO 3.1 KA Reference G 2.4.39

Approved For Administration To: RO ☒ SRO ☐

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate): Perform

Plant Site:  Simulator: Perform Lab:

Position Evaluated: RO: X SRO:

Actual Testing Environment: Simulator:  Plant Site:  Lab

Testing Method: Simulate:  Perform:

Approximate Completion Time In Minutes: 10 Minutes

Reference(S): 1903.030, change 024-03-0, step 6.2.2c.  
1903.011, change 024-03-0, form YY.

Examinee's Name:  SSN:

Evaluator's Name:

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory:  Unsatisfactory:

Performance Checklist Comments:

Start Time  Stop Time  Total Time

Signed  Date:

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**Type: Closed Reference**

**Completion Time: 10 minutes**

**Question 1**: You are attending requal training in the RETC. A plant evacuation is announced. What is your assembly area?

**Q1 Answer** : The Operations Support Center (OSC).

**Reference**: 1903.030, change 024-03-0, step 6.2.2c.

**Comments:**

**Question 2**: After declaring an emergency, how soon must the ADH be notified?

**Q2 Answer** : 15 minutes

**Reference**: 1903.011, change 024-03-0, form YY.

**Comments:**

**TASK STANDARD:**

The examinee has correctly answered both questions.

**EXAMINEE'S COPY**

**Type: Closed Reference**

**Completion Time: 10 minutes**

**Question 1:** You are attending requal training in the RETC. A plant evacuation is announced. What is your assembly area?

**Comments:**

**Question 2:** After declaring an emergency, how soon must the ADH be notified?

**Comments:**

# ADMINISTRATIVE JOB PERFORMANCE MEASURE

A1JPM-SRO-HTBAL1

Page 1 of 4

UNIT: 1 REVISION # 0 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-SRO-HTBAL1

SYSTEM: A.1 – Conduct of Operations

TASK: Review a Manual Heat Balance Calculation

JTA: ANO-SRO-ADMIN-NORM-200

KA VALUE RO 2.9 SRO 4.0 KA REFERENCE: 2.1.12

APPROVED FOR ADMINISTRATION TO: RO \_\_\_\_\_ SRO X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUTED: RO \_\_\_\_\_ SRO X

ACTUAL TESTING ENVIRONMENT: PLANT SITE: \_\_\_\_\_ SIMULATOR: X LAB: \_\_\_\_\_

ACTUAL TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: X

APPROXIMATE COMPLETION TIME IN MINUTES: 45 MINUTES

REFERENCES: 1103.016 Heat Balance Calculation

EXAMINEE'S NAME: \_\_\_\_\_ SSN: \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS: \_\_\_\_\_

START TIME: \_\_\_\_\_ STOP TIME: \_\_\_\_\_ TOTAL TIME: \_\_\_\_\_

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARTED TO ITS APPLICABLE PROCEDURE BY A QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** It is desired to verify the accuracy of the PMS calculated Rx Thermal Power (XPP) in order to ensure compliance with Technical Specification SR 3.3.1.2.

The CBOT has completed 1103.016, Heat Balance Calculation, and calculated Rx thermal power to be 101.483%.  
NI's are reading an average of 99.1%. The CBOT's math has been verified to be correct by an extra RO.

**TASK STANDARD:** The examinee has correctly identified two of four errors in Heat Balance Calculation.

**TASK PERFORMANCE AIDS:** Copies of completed 1103.016.

**INITIATING CUE:**

- Review the operator's completed 1103.016 and complete section 11.0.
- In addition, verify compliance with Technical Specification SR 3.3.1.2. .

**CRITICAL ELEMENTS (C):** 1, 3

(C)	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
<b>NOTE:</b> Provide examinee with a copy of completed 1103.016. Examinee may state initially that the as performed Heat Balance would require adjustment of NI's to be in compliance with Tech Spec SR 3.3.1.2.					
(C)	1. Review 1103.016.	Examinee reviewed 1103.016. Examinee discovered two of four errors in calculations. 1. Step 2.4 value used for Q losses was taken from step 2.2 vs. 2.3. 2. Step 2.5 a value of 600 was given for HHA instead of real value. 3. Step 2.5 value used for Q losses was taken from step 2.2 vs. 2.3. 4. Step 2.6 % full power calculation is incorrect due to above errors.			
	2. Instruct CBOT to re-perform 1103.016.	Examinee stated that 1103.016 should be re-performed.			
<b>NOTE:</b> Inform examinee that 1103.016 has been re-performed and calculated Rx thermal power is 99.99%.					
(C)	3. Verify compliance with Technical Specification surveillance SR 3.3.1.2.	Examinee concludes that SR 3.3.1.2 as recalculated Rx thermal power is within 2% of initial NI readings.			

**END**

**JPM INITIAL TASK CONDITIONS:**

- It is desired to verify the accuracy of the PMS calculated Rx Thermal Power (XPP) in order to ensure compliance with Technical Specification SR 3.3.1.2.
- The CBOT has completed 1103.016, Heat Balance Calculation, and calculated Rx thermal power to be 101.483%
- NI's are reading an average of 99.1%.
- The CBOT's math calculations have been verified to be correct by an extra RO.

**INITIATING CUE:**

- Review the operator's completed 1103.016 and complete section 11.0.
- In addition, verify compliance with Technical Specification SR 3.3.1.2.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-SRO-SURV4

Page 1 of 4

UNIT: 1 REV # 0 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-SRO-SURV4

SYSTEM/DUTY AREA: ADMINISTRATIVE TOPIC – CONDUCT OF OPERATIONS

TASK: MONITOR CONDUCT OF SHIFT SURVEILLANCE TESTS

JTA#: ANO-SRO-ADMIN-NORM-200

KA VALUE RO: 3.0 SRO: 3.4 KA REFERENCE: 2.2.12

APPROVED FOR ADMINISTRATION TO: RO: \_\_\_\_\_ SRO: X

TASK LOCATION: INSIDE CR: \_\_\_\_\_ OUTSIDE CR: \_\_\_\_\_ BOTH: X

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 20 MINUTES

REFERENCE(S): 1106.006, Emergency Feedwater Pump Operation

EXAMINEE'S NAME: \_\_\_\_\_ SSN \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.



## **ADMINISTRATIVE JOB PERFORMANCE MEASURE**

TUOI: A1JPM-SRO-SURV4

Page 2 of 4

### **EXAMINEE'S COPY**

#### **JPM INITIAL TASK CONDITIONS:**

- The quarterly test of Emergency Feedwater Pump (P-7B) per 1106.006, Supplement 11, was performed on the previous shift.
- The SM is performing Section 4, Shift Manager Review and Analysis.

#### **INITIATING CUE:**

- The SM requests that you conduct a peer review of the test since he has found some errors.
- Identify at least 2 errors in the test.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-SRO-SURV4

Page 3 of 4

### THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** The quarterly test of Emergency Feedwater Pump (P-7B) per 1106.006,  
Supplement 11, was performed on the previous shift. The SM is performing Section 4, Shift Manager Review  
and Analysis.

**TASK STANDARD:** The examinee has reviewed 1106.0006, Supplement 11 and identified at  
least 2 administrative errors in the test.

**TASK PERFORMANCE AIDS:** Completed 1106.0006, Supplement 11.

## ADMINISTRATIVE JOB PERFORMANCE MEASURE

TUOI: A1JPM-SRO-SURV4

Page 4 of 4

### INITIATING CUE:

- The SM requests that you conduct a peer review of the test since he has found some errors.
- Identify at least 2 errors in the test.

**CRITICAL ELEMENTS (C)**\_\_\_\_\_ 2 \_\_\_\_\_

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Review 1106.006, Supplement 11.	Examinee reviewed 1106.006, Supplement 11.			
(C)	2. Identify at least 2 administrative errors.	Examinee identified at least 2 of the following administrative errors: <ul style="list-style-type: none"><li>• Independent verification initials missing in step 1.2.1.</li><li>• Entry into T.S. time clock step was N/A'd at step 2.1.4.</li><li>• Acceptance Criteria Table 4, EFW Test Recirc Flow FI-2888 recorded as 532 gpm and "YES" circled when this value is greater than Limiting Range for Operability.</li><li>• Stopwatch cal due date has expired in step 3.2.1.</li></ul>			

**END**

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: 1/12/2004

TUOI NUMBER: A1JPM-SRO-XX

System/Duty Area: Administrative Topic-Emergency Procedures/Plan

Task: Determine Emergency Action Level after Scenario #3 of OP test.

JA#

KA Value RO  SRO 4.1 KA Reference G 2.4.41

Approved For Administration To: RO ☐ SRO ☒

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate): Simulate

Plant Site:  Simulator:  Perform  Lab:

Position Evaluated: RO:  SRO: X

Actual Testing Environment: Simulator:  Plant Site:  Lab

Testing Method: Simulate:  Perform:

Approximate Completion Time In Minutes: 5 Minutes

Reference(S): 1903.010 Emergency Action Level Classification, 1903.011, Emergency Response Notifications

Examinee's Name:  SSN:

Evaluator's Name:

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory:  Unsatisfactory:

Performance Checklist Comments:

Start Time  Stop Time  Total Time

Signed  Date:

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

The following conditions existed at the end of Scenario 3:

Unit 1 Reactor was tripped due to SB LOCA with SCM lost and it will not be restored. All appropriate ESAS channels had actuated and Full HPI was injecting water into the RCS with pressure stable and being controlled close to the saturation line (may even be on it) but within the limits of Figure 3 of EOP (RT14). No fuel clad failure was indicated.

**TASK STANDARD:**

Examinee correctly classifies this event as an **Site Area Emergency** per EAL 2.4 and makes notifications to plant personnel per 1903.011M.

**TASK PERFORMANCE AIDS:**

1903.010 Attachments 1 and 3, 1903.011 Attachment 2, and 1903.011M

**SIMULATOR SETUP:**

N/A

INITIATING CUE: For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

CRITICAL ELEMENTS (c): 3 and 6

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	1. Compare event conditions with the Index of EALs, Attachment 1 of 1903.010, Emergency Action Level Classification.	Turned to Attachment 1 of 1903.010, Index of EALs.	—	—	—
	2. Turn to appropriate EAL and compare EAL criteria with event conditions.	Turned to a specific EAL in Safety System Function, Attachment 3 of 1903.010.	—	—	—
C	3. Declare the emergency classification.	Declared or stated the event is an SAE per EAL 2.4, based on RCS leakage greater than normal makeup capacity (not required to be stated), no fuel clad damage, and SCM not restored.	—	—	—
	4. Initiate immediate notifications.	Referred to 1903.011 and turned to Attachment 2.			
NOTE: Cue the examinee that the Unit 2 Shift Engineer is performing the initial notifications per 1903.011 after the examinee has stated that Unit 2 Shift Engineer (or control room communicator) has been requested.					
	5. Begin completion of form 1903.011M, Alert Emergency Direction and Control Checklist for Shift Manager.	<p>Began completion of form 1903.011M Alert Emergency Direction and Control Checklist for Shift Manager.</p> <p>Examinee should fill in the data on items 1 and 2.</p> <p>Examinee should simulate (or state) direction of the SE to complete the initial notification.</p>	—	—	—
C	6. (Simulate) Announce emergency on plant paging system.	Used plant-paging system to (simulate) make announcement per step 4 of form 1903.011M.	—	—	—
<b>EXAMINER'S CUE: This concludes the JPM.</b>					

END

**EXAMINEE'S COPY**

**INITIAL CONDITIONS:**

The initial conditions for this jpm are the plant conditions when scenario #3 was terminated.

**INITIATING CUE:**

For the given plant conditions, determine the applicable EAL classification and initiate notifications per the applicable Shift Manager Emergency Direction and Control Checklist in 1903.011.

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 4 Date: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-CRD02

System/Duty Area: CONTROL ROD DRIVE SYSTEM

Task: Perform Transfer To Auxiliary Supply

JA# ANO1-RO-CRD-NORM-12

KA Value RO 3.4 SRO 3.4 KA Reference 001 A4.03

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate):

Plant Site: \_\_\_\_\_ Simulator: \_\_\_\_\_ Perform \_\_\_\_\_ Lab: \_\_\_\_\_

Position Evaluated: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: \_\_\_\_\_ Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: 15 Minutes

Reference(S): 1105.009

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.



TUOI NUMBER: ANO-1-JPM-RO-CRD02

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the “Briefing Checklist - System Walkthrough” portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

Rx demand and diamond stations are in manual. Preparation to exercise rods per Supplement 2, 1105.009, is in progress.

**TASK STANDARD:**

Group 1 Rods have been transferred to the Auxiliary Power Supply and are enabled for being moved on that power supply in run speed.

**TASK PERFORMANCE AIDS:**

1105.009, Section 8.0

TUOI NUMBER: ANO-1-JPM-RO-CRD02

INITIATING CUE: The CRS/SM directs you to transfer Group 1 Rods to the Auxiliary Power Supply for movement of Group 1 at run speed. IAW 1105.009, Section 8.0

CRITICAL ELEMENTS (c): 2, 3, 5, 6, 7, 8, 9, 10, 11

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
<b>INSTRUCTOR NOTE:</b> Verify the Reactor Demand and Diamond are in manual.					
	1. Verify transfer reset lamp is ON and TR CF is OFF.	On CRD Diamond Panel, condition of both lights was checked. Transfer reset lamp was ON and TR CF lamp was OFF.	—	—	—
C	2. Place Group select switch to Group 1.	On CRD Diamond Panel, Group Select Switch was placed in Group 1 position.	—	—	—
C	3. Select Single Select Switch to ALL.	On CRD Diamond Panel, Single select switch was selected to ALL.	—	—	—
	4. Set Auto/Manual Switch to Manual, verify Manual Lamp is ON.	On CRD Diamond Panel, verified manual lamp ON or Auto/Manual pushbutton depressed to select MANUAL.	—	—	—
C	5. Set SEQ.- SEQ OR. switch to SEQ. OR position.	On CRD Diamond Panel, SEQ.- SEQ OR. switch was selected to SEQ. OR position.	—	—	—

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
C	6. Set Group/Auxiliary Switch to Auxiliary. Aux PB.	On CRD Diamond Panel, Group/Aux. PB was selected to Aux.	—	—	—
C	7. Set Speed Select Switch to "JOG".	On CRD Diamond Panel, Speed Select Switch was selected to JOG position.	—	—	—
C	8. Set Clamp/Clamp Release Switch to CLAMP.	On CRD Diamond Panel, selected Clamp/Clamp Release Switch to CLAMP.	—	—	—
C	9. Press Manual Transfer Switch.	On CRD Diamond Panel, manual transfer PB was depressed.	—	—	—
C	10. Set Clamp/Clamp Release Switch to Clamp Release.	On CRD Diamond Panel, depressed Clamp/Clamp Release Switch.	—	—	—
C	11. Set Group/ AUX switch to Group.	On CRD Diamond Panel, Group/Aux PB was selected to Group.	—	—	—
	12. If movement at RUN speed is desired, set speed switch to RUN.	On CRD Diamond Panel, Speed Select Switch was selected to RUN position.	—	—	—

END

## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

- Preparation to exercise rods per Supplement 2, 1105.009, is in progress.
- Rx Demand and Diamond stations are in manual.

### **INITIATING CUE:**

The CRS/SM directs you to transfer Group 1 Rods to the Auxiliary Power Supply for movement of Group 1 at run speed. IAW 1105.009, Section 8.0.

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-

System/Duty Area: 002 Reactor Coolant System

Task: Restart a Make-up Pump following an RCS leak isolation

JA# ANO1-RO-

KA Value RO 4.3 SRO 4.4 KA Reference 002.A2.01

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate):

Plant Site: \_\_\_\_\_ Simulator: \_\_\_\_\_ Perform X Lab: \_\_\_\_\_

Position Evaluated: RO: \_\_\_\_\_ X SRO: \_\_\_\_\_ X

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: \_\_\_\_\_ Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: \_\_\_\_\_ 20 Minutes

Reference(S): AOP 1203.026

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

You are the CBOR and section 2 of AOP 1202.026 was entered because of a small leak in the Makeup system on the discharge side of the pumps. The reactor was tripped and the plant is stable in Mode 3 conditions. All Makeup pumps had to be stopped to repair the leak. The leak has been repaired. Make up pump line up: P-36A is ES, P-36B is OP, P-36C is STBY. RCP seal bleedoff temperature is 160°F.

**TASK STANDARD:**

Restart a Makeup pump following RCS leak isolation per section 2 of Procedure 1203.026, starting with step 3.6.6.

**TASK PERFORMANCE AIDS:**

Radio (may be simulated), copy of section 2 AOP 1203.026, steps 3.6.6 – 3.7.

**SIMULATOR SETUP:**

1. Trip reactor
2. Perform 1202.001 rx trip, with enclosures as appropriate
3. Allow plant to stabilize (OTSG on LLL, DFT stable)
4. Lower PZR level SP to 100"
5. Allow PZR level to reach 100"
6. Initialize MUT at 80"
7. When PZR level reaches 100" close all Make up valves
8. Shutdown all running Makeup pumps
9. Store IC

INITIATING CUE: The CRS/SM directs you to restart Makeup Pump P-36C (STBY pump) IAW section 2 of AOP 1203.026, starting with step 3.6.6

CRITICAL ELEMENTS (c): 3, 8, 9

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
<b>INSTRUCTOR NOTE: Examinee may review the AOP 1203.0126 prior to starting the JPM.</b>					
	1. Verify Makeup Tank outlet (CV-1275) is open <i>(step 3.6.6A of procedure)</i>	Operator verifies CV-1275 open.	—	—	—
	2. Add to Makeup tank as necessary to maintain level $\geq 55''$ using current RCS boron concentration. <i>(step 3.6.6B of procedure)</i>	Operator verifies MUT level is $\geq 55''$ .	—	—	—
C	3. Start Aux Lube Oil pump for STBY HPI pump (P-36C). <i>(step 3.6.7 of procedure is conditional on STBY HPI pump being available which was given as the initial condition).</i>	Operator rotates control handle for P-36C aux lube oil pump and verifies that red light is on, green light is off.	—	—	—
	4. Review SPDS data for HPI pump suction pressure history, leak location, and lowest suction pressure achieved. <i>(This is the BOXED NOTE prior to step 3.6.10 in the procedure).</i> <i>See Cue below</i> <i>NOTE: Operator should skip step 3.6.10 since pump venting is not required.</i>	Operator should review the SPDS data and determine that no pump venting is required.  <i>See Cue below</i>	—	—	—
<b>INSTRUCTOR NOTE: Examinee must review the SPDS.</b>  <b>INSTRUCTOR CUE: The lowest suction pressure for the STBY pump should be around 25psig. If the SPDS is not available, then instructor must cue this value. No loss of pump suction occurred therefore candidate should NOT try to vent pump.</b>					
	5. Verify HPI suction pressure >10psig. <i>(step 3.6.11)</i>	Operator verifies suction pressure >10psig.	—	—	—

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>6. Verify the following valves in HAND and CLOSED: CV-1207 (seal injection supply) CV-1235 (normal makeup supply) <b>(step 3.6.12)</b></p> <p><b>NOTE: Operator should skip step 3.6.13 since ES pump is not used.</b></p>	<p>7. Operator verifies white light for HAND is on and red light for AUTO is off for both CV-1207 (seal injection supply) and CV-1235 (normal makeup supply) and valves both indicate CLOSED with corresponding valve position indicator green lights ON and red lights OFF.</p>	—	—	—
C	<p>8. After AUX lube oil pump has run for <math>\geq 1</math> minute, start the STBY HPI pump.  <b>(step 3.6.14)</b></p>	<p>Operator verifies red light is lit for AUX lube oil pump and places hand control switch for STBY HPI pump P-36C to start. Verifies the red light ON and green light OFF for P-36C.</p>	—	—	—
C	<p>9. Stop the AUX lube oil pump for the STBY HPI pump (P-36C).  <b>(step 3.6.15)</b></p>	<p>Operator places the hand control switch for the AUX lube oil pump (for P-36C) to the OFF position and verifies green light ON and red light OFF.</p>	—	—	—
	<p>10. Place CV-1206 pushbutton to OVRD. Open CV-1206 (seal injection isolation valve).  <b>(steps 3.6.16 and 3.6.17)</b></p>	<p>Operator pushes CV-1206 button, observes OVRD light is ON, and places the valve hand switch to open position and observes red light ON and green light OFF.</p>	—	—	—
	<p>11. Slowly open CV-1207 (seal injection control valve) and adjust seal flow to 30-40gpm and place valve in AUTO. <b>(step 3.6.18B)</b> <b>NOTE: step B is used because RCP bleedoff temperature should be 160 °F or less.</b></p>	<p>Operator slowly turns hand switch CCW for CV-1207 in order to open it enough to get 30-40gpm flow and place mode switch for the valve in AUTO and observe red light is ON, white light is OFF.</p>	—	—	—
	<p>12. When RCP seals total flow is above setpoint (CV-1206 FLOW light ON), return CV-1206 OVRD pushbutton to normal (OVRD light off).  <b>(step 3.6.19)</b></p>	<p>Operator should observe CV-1206 FLOW light is ON and then push the OVRD pushbutton in to return it to normal and observe the OVRD light is OFF.</p>	—	—	—



C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
C	<p>13. Slowly open CV-1235 until makeup flow indication is on-scale and adjust CV-1235 setpoint to desired value and place in AUTO.</p> <p><i>(steps 3.6.20 and 3.6.21)</i></p>	Operator should SLOWLY turn CV-1235 position switch CCW to open the valve and watch for flow indications on scale. Operator should then adjust the SP to a nominal value, place valve hand station in AUTO and observe white light OFF and RED light ON.	_____	_____	_____
C	<p>14. Re-establish letdown.</p> <p><i>(step 3.7)</i></p> <p><b><i>JPM is complete</i></b></p>	Operator places hand station for letdown isolation valve CV-1221 to CCW position to initiate letdown and observes letdown flow rate and red light ON and green light OFF (for valve open indication).	_____	_____	_____

END

## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

You are the CBOR and AOP 1202.026 was entered because of a small leak in the Makeup system on the discharge side of the pumps . The reactor was tripped and the plant is stable in Mode 3 conditions. All Makeup pumps had to be stopped to repair the leak. The leak has been repaired. Make up pump line up: P-36A is ES, P-36B is OP, P-36C is STBY. RCP seal bleedoff temperature is 160°F.

### **INITIATING CUE:**

The CRS/SM directs you to restart Makeup Pump P-36C (STBY pump) IAW AOP 1203.026, starting with step 3.6.6.

SECTION 2 -- LARGE MAKEUP AND PURIFICATION SYSTEM LEAK (continued)

**NOTE**

The SPDS Safety System Diagnostic Inst. display contains the previous 20 minutes of data.

- 3.6.4 Select Safety System Diagnostic Inst. display on SPDS for OP HPI pump and evaluate suction pressure and flow stability prior to event.
- 3.6.5 If radiation levels prohibit leak isolation, perform the following:
- A. Open BWST Outlet (CV-1407 or CV-1408) to ES HPI pump.
  - B. Operate ES HPI pump and associated HPI Block valve (CV-1220 or CV-1285) only as necessary to maintain RCS inventory.
  - C. **GO TO** step 3.7.
- 3.6.6 When system leakage has been isolated, perform the following:
- A. Verify Makeup Tank Outlet (CV-1275) open.
  - B. Add to MU tank as necessary to maintain level  $\geq 55$ " using current RCS boron concentration.
- 3.6.7 If STBY HPI pump is available, perform the following:
- A. Start AUX lube oil pump for STBY HPI pump.
  - B. **GO TO** step 3.6.10 to place STBY HPI pump in service.
- 3.6.8 If STBY HPI pump is not available, and OP HPI pump damage is not suspected, perform the following:
- A. Start AUX lube oil pump for OP HPI pump.
  - B. **GO TO** step 3.6.10 to place OP HPI pump in service.
- 3.6.9 If both OP and STBY HPI pumps are not available, perform the following:
- A. Start AUX lube oil pump for ES HPI pump.
  - B. Place ES standby HPI pump in service per step 3.6.10.

SECTION 2 -- LARGE MAKEUP AND PURIFICATION SYSTEM LEAK (continued)

**NOTE**

Decision to vent HPI pump should be based on suction pressure from SPDS history as well as leak location and lowest suction pressure achieved.

3.6.10      If loss of pump suction was indicated, perform the following:

A. If ES HPI pump is being re-aligned per Attachment A, verify associated P-36 Makeup Pump Suction Cross-Over open prior to venting.

B. Vent pump using applicable Makeup Pump P-36 Vent to ABV Header:

P-36A	P-36B	P-36C
ABV-9A	ABV-9B	ABV-9C

3.6.11      Verify HPI pump suction pressure >10 psig.

3.6.12      Verify the following valves in HAND and closed:

- CV-1207
- CV-1235

3.6.13      If ES HPI pump will be used, verify Attachment A steps 1 through 6 complete.

**CAUTION**

Operation of Aux Lube Oil Pump with HPI/MU Pump running should be minimized.

3.6.14      After AUX lube oil pump has run for  $\geq 1$  minute, start HPI pump.

3.6.15      Stop AUX lube oil pump for HPI pump.

3.6.16      Place CV-1206 pushbutton in OVRD (OVRD light on).

3.6.17      Open CV-1206.

3.6.18      Slowly open CV-1207 as follows:

A. If seal bleedoff temperature is >180°F, establish and maintain 8 to 12 gpm RCP Seal Total INJ Flow until <180°F.

- B. When seal bleedoff temperature is <180°F, adjust CV-1207 for 30-40 gpm and place in AUTO.

SECTION 2 -- LARGE MAKEUP AND PURIFICATION SYSTEM LEAK (continued)

- 3.6.19      When RCP Seals Total INJ Flow is above setpoint (CV-1206 FLOW light on), return CV-1206 OVRD pushbutton to normal (OVRD light off).
- 3.6.20      Slowly open CV-1235 until makeup flow indication is on-scale.
- 3.6.21      Adjust CV-1235 setpoint to desired value and place in AUTO.
- 3.7          If normal makeup is in service, reestablish letdown.

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-

System/Duty Area: \_\_\_\_\_

Task: Perform ERV (PSV-1000) Exercise Test

JA# ANO1-RO-

KA Value RO 3.0 SRO 3.2 KA Reference 010.A3.01

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate):

Plant Site: \_\_\_\_\_ Simulator: \_\_\_\_\_ Perform ☒ Lab: \_\_\_\_\_

Position Evaluated: RO: ☒ SRO: ☒

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: \_\_\_\_\_ Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: 10 Minutes

Reference(S):  
OP 1103.005 Supplement 1 (change 030-02-0), 1203.012H (change 031-03-0),  
and AOP 1203.015 (change 011-00-0)

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

You are the CBOR and you are directed by the CRS to perform OP 1103.005, Supplement 1, "Exercising of the Pressurizer Electromatic Relief Valve (PSV-1000)" in order to meet the regularly scheduled 18 month test. The plant conditions are as follows:

RC Temperature = 120°F

RC Pressure = 55 psig

**TASK STANDARD:**

Perform the ERV exercise test per OP 1103.005, Supplement 1 (change 030-02-0).

**TASK PERFORMANCE AIDS:**

Stopwatch, Radio (may be simulated), copy of OP 1103.005, Supplement 1 (change 030-02-0).

**SIMULATOR SETUP:**

1. Reactor tripped, in Mode 5
2. RC Temperature = 120°F, RC Pressure = 55 psig
3. When step 2.2.4 is reached, ERV (PSV-1000) sticks open and will not close
4. When ERV Isolation valve is closed (CV-1000), the leak stops

INITIATING CUE: The CRS/SM directs you to perform the ERV exercise test per OP 1103.005, Supplement 1 (change 030-02-0) in order to meet the regularly scheduled 18 month test.

CRITICAL ELEMENTS (c): 5, 6, 8

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
<b>INSTRUCTOR NOTE: Examinee may review the OP 1103.005, Supplement 1 prior to starting the JPM. Also, the Examinee should initial each step on the procedure forms although it is not written into the JPM.</b>					
	1. Check purpose of test <i>(step 1.1 of procedure)</i>	Operator checks "B" for regularly scheduled 18 month test.	—	—	—
	2. Records stop watch M & TE # and cal date in section 3.0 of procedure. Checks RC Temp $\geq 100^{\circ}\text{F}$ Checks RC Pressure $< 70$ psig Checks ERV Isolation (CV-1000) open <i>(steps 1.2 thru 1.5 of procedure)</i>	Operator enters stopwatch cal data, initials for correct RCS temp/pressure, and checks ERV isolation valve light RED is ON and GREEN is OFF.	—	—	—
	3. If elevated airborne activity is expected as a result of ERV operations, personnel hatch interlock enabled or ..... <i>Instructor Cue here</i> <i>NOTE: No elevated airborne activity is expected</i>	Operator should ask CRS about expected airborne activity. Instructor cues as given below. Operator should N/A the step after the cue. <i>See Instructor Cue below</i>	—	—	—
<b>INSTRUCTOR CUE: CRS reports that there is no elevated airborne activity expected. N/A the step on the form.</b>					
	4. Verify no one is at the vicinity of the ERV. <i>(step 2.1)</i> <i>Instructor Cue: when operator calls on radio or asks CRS, reply back that no one is in the vicinity of ERV.</i>	Operator asks CRS to determine or uses radio to call and determine that no one is near the ERV. <i>See Instructor Cue at left.</i>	—	—	—



C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
C	<p>5. Perform the following steps while ensuring RCS pressure remains <math>\geq 30</math>psig:</p> <p>-Place ERV Acoustic Monitor Full Scale Range selector to 1 g position.</p> <p>-Open and measure stroke time of ERV (Record in Section 3.0).</p> <p><i>(steps 2.2.1 – 2.2.2)</i></p>	<p>Operator selects 1 g position for ERV Acoustic Monitor with Acoustic selector switch.</p> <p>Operator places hand switch for ERV to “open” position and verifies ERV open by using all three parameter indications listed here:</p> <ul style="list-style-type: none"> <li>• Acoustic Monitor indicating light on panel C04</li> <li>• Dropping RCS pressure (Operator should not let pressure drop below 30psig)</li> <li>• Rising Quench Tank Pressure</li> </ul> <p>Operator then enters the stroke time in Section 3.0.</p>	_____	_____	_____
C	<p>6. Close and measure the stroke time of ERV (Record in Section 3.0).</p> <p><i>(step 2.2.4)</i></p> <p><b><i>NOTE: This is the alternate path portion of the JPM. The ERV will stick completely open and will not move under any conditions. The block valve (CV-1000) should be closed to stop the release.</i></b></p>	<p>Operator places hand switch for ERV to “close” position and should <b>attempt</b> to verify that the ERV is closed by using all three parameter indications listed here:</p> <ul style="list-style-type: none"> <li>• Acoustic Monitor indicating light on panel C04 (displays open)</li> <li>• Stable RCS pressure (It should continue to drop)</li> <li>• Stable Quench Tank Pressure (It should continue to rise)</li> </ul>	_____	_____	_____
<p><b><i>NOTE: This is the alternate path portion of the JPM. The ERV will stick completely open and will not move under any conditions. The block valve (CV-1000) should be closed to stop the release per Alarm procedure OP 1203.012H for alarm K09-A1, “Relief Valve Open”, page 2.</i></b></p>					

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>7. Operator should enter the Annunciator Response OP 1203.012H for alarm K09-A1, “<b>Relief Valve Open</b>”, page 2.</p> <p>Operator is directed by OP1203.012H to refer to procedure AOP 1203.015 for “<b>Pressurizer Systems Failure</b>”. Operator should refer to section 1.0 of this procedure for “ERV Failure or Leak.”</p>	<p>Operator acknowledges alarm and enters Alarm procedure OP 1203.012H for alarm K09-A1, “Relief Valve Open”, page 2.</p> <p>This procedure directs Operator to AOP 1203.015 for “<b>Pressurizer Systems Failure.</b>” Operator should refer to section 1.0 of this procedure for ERV failure or Leak.</p>	—	—	—
C	<p>8. Operator should commence follow-up actions for section 1.0, which include:</p> <ol style="list-style-type: none"> <li>Close the ERV Isolation valve (CV-1000).</li> <li>Trip reactor if can’t maintain pressure (N/A in this JPM)</li> </ol> <p><i>(steps 3.1-3.2)</i></p>	<p>Operator closes the isolation valve with hand switch for CV-1000 and observes the following:</p> <ul style="list-style-type: none"> <li>Acoustic Monitor indicating light on panel C04 (displays closed)</li> <li>Stable RCS pressure</li> <li>Stable Quench Tank Pressure</li> </ul>	—	—	—
<b>NOTE: Closing the ERV block or isolation valve CV-1000 will stop the leak.</b>					
	<p>9. If closing CV-1000 stops the leak, perform the following:</p> <ol style="list-style-type: none"> <li>Continue power operations with ERV isolated (N/A for this JPM)</li> <li>Notify OPS manager</li> <li>Log in station log and on plant status board</li> </ol> <p><i>(step 3.3)</i></p> <p><b>END of JPM</b></p>	<p>Operator notifies the OPS manager of the stuck open ERV, block valve has contained the leak, and logs the entry in the station log and PSB.</p>	—	—	—
<b>INSTRUCTOR CUE: This concludes the JPM.</b>					

END

## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

You are the CBOR and you are directed by the CRS to perform OP 1103.005, Supplement 1, "Exercising of the Pressurizer Electromatic Relief Valve (PSV-1000)" in order to meet the regularly scheduled 18 month test. The plant conditions are as follows:

RC Temperature = 120°F

RC Pressure = 55 psig

### **INITIATING CUE:**

The CRS/SM directs you to perform the ERV exercise test per OP 1103.005, Supplement 1 (change 030-02-0) in order to meet the regularly scheduled 18-month test.

SUPPLEMENT 1

Page 1 of 4

EXERCISING OF THE PRESSURIZER  
ELECTROMATIC RELIEF VALVE (PSV-1000)

This test demonstrates operability of the pressurizer ERV by exercising the valve. This test satisfies TS 5.5.8 (ANO IST program requirements) for stroke time measurement, exercising, and fail-safe operation. This test also satisfies part of Surveillance TR 3.4.2.1 for RCS vent path operability. This test is related to SR 3.4.11.5 "Channel calibration of ERV opening circuitry".

- | 1.0 | INITIAL CONDITIONS   | INITIALS |
|-----|--|----------|
| 1.1 | Check the purpose of this test:<br>___A) Regularly scheduled cold shutdown test.<br>___B) Regularly scheduled 18 month test<br>___C) Operability test following significant maintenance.<br>___D) Other (describe in section 4.0). | _____    |
| 1.2 | Stop watch available for measuring valve stroke time.  | _____    |
|     | 1.2.1 Record Stopwatch M&TE# and Cal Due Date in<br>Section 3.0.   |          |
| 1.3 | RC temperature $\geq 100^{\circ}\text{F}$ .  | _____    |
| 1.4 | RC pressure $< 70$ psig.   | _____    |
| 1.5 | ERV Isolation (CV-1000) open.  | _____    |
| 1.6 | If elevated airborne activity is expected as a result of<br>ERV operations, personnel Hatch interlock enabled or<br>Personnel Hatch watch stationed to ensure only one door<br>opened at a time. Otherwise N/A.                    | _____    |

2.0 TEST METHOD

**WARNING**  
Opening the ERV causes a localized steam release at the pilot valve vent.  
This is a radiation and safety hazard.

- 2.1 Verify no one is at the vicinity of the ERV.

SUPPLEMENT 1

Page 2 of 4

**NOTE**

ERV position and vent path operability are obtained using:

- Acoustic Monitor indication on C04
- and
- dropping RCS pressure
- and
- rising Quench Tank pressure.

2.2 Perform the following steps while ensuring RCS pressure remains < 30 psig.

2.2.1 Place ERV Acoustic Monitor Full Scale Range selector to 1 g position. \_\_\_\_\_

2.2.2 Open and measure stroke time of ERV (Record in Section 3.0). \_\_\_\_\_

2.2.3 Verify ERV open using all of the following: \_\_\_\_\_

- Acoustic Monitor Indication on C04
- Dropping RCS pressure
- Rising Quench Tank pressure.

2.2.4 Close and measure stroke time of ERV (Record in Section 3.0). \_\_\_\_\_

2.2.5 Verify ERV closed using all of the following: \_\_\_\_\_

- Acoustic Monitor Indication on C04
- Stable RCS pressure
- Stable Quench Tank pressure.

2.2.6 Place ERV Acoustic Monitor Full Scale Range selector to 10 g position. \_\_\_\_\_

SUPPLEMENT 1

Page 3 of 4

3.0 ACCEPTANCE CRITERIA

- 3.1 Record stroke time measured during testing and compare with "Limiting Value For Operability".

Stopwatch M&TE# \_\_\_\_\_ Cal Due Date \_\_\_\_\_

Valve	Control Panel	Test Direction	Measured Stroke Time (nearest 1/10 second)	Acceptable Normal Range (Sec)	Limiting Value For Operability (Sec)	Is Measured Stroke Time Less Than "Limiting Value For Operability"	Design Bases Value
PSV-1000	C04	Open		≤ 2.0	≤ 2.0	Yes No	≤ 2.0
		Closed		2.6-7.8	≤10.4*	Yes No	N/A

\* Valve closure verifies proper fail-safe operation.

- 3.2 If "No" is circled in 3.1 above, declare PSV-1000 inoperable, immediately notify the Shift Manager/CRS, write a Condition Report, initiate corrective action. Reference applicable Tech Spec for LCO. \_\_\_\_\_

- 3.3 If any measured stroke time does not fall within the "Acceptable Normal Range", immediately retest valve or declare that valve inoperable. Refer to "Operability" section of this procedure for additional guidance. \_\_\_\_\_

PERFORMED BY \_\_\_\_\_ OPERATOR DATE/TIME \_\_\_\_\_ / \_\_\_\_\_

TUOI: A1JPM-DHR01

## JOB PERFORMANCE MEASURE

UNIT: 1 REV # 8 DATE: \_\_\_\_\_TUOI NUMBER: A1JPM-RO-DHR01SYSTEM/DUTY AREA: DECAY HEAT REMOVALTASK: ESTABLISH DECAY HEAT REMOVAL USING P-34AJTA#: ANO1-RO-DHR-NORM-2KA VALUE RO: 3.6 SRO: 3.4 KA REFERENCE: 005 A4.01APPROVED FOR ADMINISTRATION TO: RO: X SRO: XTASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 20 MINUTESREFERENCE(S): 1104.004EXAMINEE'S NAME: \_\_\_\_\_ SSN - -

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

## **EXAMINEE'S COPY**

### **JPM INITIAL TASK CONDITIONS:**

- Plant shutdown and cooldown per 1102.010 is complete to step 10.8.
- Breakers B-5255/B-6255/B-5651 are closed.
- 1104.004 is complete up to step 7.2.3.

### **INITIATING CUE:**

The CRS directs that Decay Heat Pump P34A be placed in service with DHR flow <3500 gpm and discharge pressure <400 psig, complete procedure through step 7.2.18.



TUOI: A1JPM-DHR01

TUOI NUMBER: ANO-1-JPM-RO-DHR01**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall review the “Briefing Checklist - System Walkthrough” portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** Plant shutdown and cooldown per 1102.010 is  
complete to step 10.8. Decay heat removal with P34A is to be established per  
1104.004. Breakers B-5255/B-6255/B-5651 are closed.

**TASK STANDARD:** P-34A decay heat pump running per OP 1104.004. Flow indicated  
< 3500 gpm and discharge pressure <400 psig.

**TASK PERFORMANCE AIDS:** 1104.004 Section 7.0

TUOI: A1JPM-DHR01

TUOI NUMBER: ANO-1-JPM-RO-DHR01**INITIATING CUE:**

The CRS directs that P34A be placed in service with DHR flow <3500 gpm and discharge pressure <400 psig, complete procedure through step 7.2.18.

**INSTRUCTOR NOTE: Ensure B-5255, B-6255, and B-5651 are closed and Programmable Annunciator alarm for P34A (P1404) set at 400 psig.**

**CRITICAL ELEMENTS (C):** 1, 2, 5, 7, 8, 9, 10, 11, 12, 15

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
(C)	1. Close Decay Heat P-34A Suction from BWST (CV-1436).	CV-1436 red light off, green light on.	—	—	—
(C)	2. Open Decay Heat P-34A Suction from RCS (CV-1434).	CV-1434 red light on, green light off.	—	—	—
	3. Open E-35A and E-35B sample valves SS-41A and SS-41B.	Contacted the WCO and instructed the WCO to open SS-41A and SS-41B.	—	—	—
<b>NOTE:</b> Inform examinee that Category “E” log entry has been made.					
	4. Verify white Open Permit light ON at CV-1410 handswitch on C16.	Verified white open permit light on.	—	—	—
(C)	5. Open CV-1410.	Opened DH suction valve CV-1410.	—	—	—
	6. Verify white Open Permit light ON at CV-1050 handswitch on C18.	Verified white open permit light on.	—	—	—
C	7. Open DH Suction Valve CV-1050	Opened DH suction valve CV-1050.	—	—	—
C	8. Open DH suction RB isolation CV-1404.	Opened CV-1404.	—	—	—
C	9. Close decay heat cooler E-35A outlet valve CV-1428.	Closed CV-1428.	—	—	—

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
C	10. Position E-35A Cooler Bypass (CV-1433) to ~ 50% as indicated on HIC-1433.	Positioned CV-1433 to ~ 50% open.	_____	_____	_____
C	11. Open Decay Heat Block Valve CV-1401	Opened CV-1401.	_____	_____	_____
C	12. Start P-34A.	Started P-34A.	_____	_____	_____
	13. Verify LPI/Decay Heat Pump Brg CLR E-50A Inlet (CV-3840) and Decay HT CLR Service Water E-35A Inlet (CV-3822) open.	On C-18, verified CV-3840 and CV-3822 open.	_____	_____	_____
	14. Monitor pressurizer level.	Monitored pressurizer level on C04 or SPDS.	_____	_____	_____
C	15. Adjust CV-1433 to establish decay heat removal flow at < 3500 gpm from P-34A and discharge pressure < 400 psig.	Adjusted DHR flow to <3500 gpm and discharge pressure < 400 psig using CV-1433.	_____	_____	_____
<b>NOTE:</b> Inform examinee that it is not necessary to perform Part 2 of Supplement 3.					
	16. Verify LPI Room Cooler VUC-1A starts.	At panel C-19, verified VUC-1A started (red light on).	_____	_____	_____
	17. Adjust the DECAY HEAT VORTEX WARNING SETPOINT.	Selected the U5 function of the SPDS computer and set KP34ALO just below the Decay Heat Pump motor current and adjusted KP34AHI just above the Decay Heat Pump motor current.	_____	_____	_____

END

TUOI: A1JPM-DHR01

## JOB PERFORMANCE MEASURE

UNIT: 1 REV # 8 DATE: \_\_\_\_\_TUOI NUMBER: A1JPM-RO-DHR01SYSTEM/DUTY AREA: DECAY HEAT REMOVALTASK: ESTABLISH DECAY HEAT REMOVAL USING P-34AJTA#: ANO1-RO-DHR-NORM-2KA VALUE RO: 3.6 SRO: 3.4 KA REFERENCE: 005 A4.01APPROVED FOR ADMINISTRATION TO: RO: X SRO: XTASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 20 MINUTESREFERENCE(S): 1104.004EXAMINEE'S NAME: \_\_\_\_\_ SSN - -

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

## **EXAMINEE'S COPY**

### **JPM INITIAL TASK CONDITIONS:**

- Plant shutdown and cooldown per 1102.010 is complete to step 10.8.
- Breakers B-5255/B-6255/B-5651 are closed.
- 1104.004 is complete up to step 7.2.3.

### **INITIATING CUE:**

The CRS directs that Decay Heat Pump P34A be placed in service with DHR flow <3500 gpm and discharge pressure <400 psig, complete procedure through step 7.2.18.

TUOI: A1JPM-DHR01

TUOI NUMBER: ANO-1-JPM-RO-DHR01**THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:**

The examiner shall review the “Briefing Checklist - System Walkthrough” portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** Plant shutdown and cooldown per 1102.010 is  
complete to step 10.8. Decay heat removal with P34A is to be established per  
1104.004. Breakers B-5255/B-6255/B-5651 are closed.

**TASK STANDARD:** P-34A decay heat pump running per OP 1104.004. Flow indicated  
< 3500 gpm and discharge pressure <400 psig.

**TASK PERFORMANCE AIDS:** 1104.004 Section 7.0

TUOI: A1JPM-DHR01

TUOI NUMBER: ANO-1-JPM-RO-DHR01**INITIATING CUE:**

The CRS directs that P34A be placed in service with DHR flow <3500 gpm and discharge pressure <400 psig, complete procedure through step 7.2.18.

**INSTRUCTOR NOTE: Ensure B-5255, B-6255, and B-5651 are closed and Programmable Annunciator alarm for P34A (P1404) set at 400 psig.**

**CRITICAL ELEMENTS (C):** 1, 2, 5, 7, 8, 9, 10, 11, 12, 15

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
(C)	1. Close Decay Heat P-34A Suction from BWST (CV-1436).	CV-1436 red light off, green light on.	—	—	—
(C)	2. Open Decay Heat P-34A Suction from RCS (CV-1434).	CV-1434 red light on, green light off.	—	—	—
	3. Open E-35A and E-35B sample valves SS-41A and SS-41B.	Contacted the WCO and instructed the WCO to open SS-41A and SS-41B.	—	—	—
<b>NOTE:</b> Inform examinee that Category “E” log entry has been made.					
	4. Verify white Open Permit light ON at CV-1410 handswitch on C16.	Verified white open permit light on.	—	—	—
(C)	5. Open CV-1410.	Opened DH suction valve CV-1410.	—	—	—
	6. Verify white Open Permit light ON at CV-1050 handswitch on C18.	Verified white open permit light on.	—	—	—
C	7. Open DH Suction Valve CV-1050	Opened DH suction valve CV-1050.	—	—	—
C	8. Open DH suction RB isolation CV-1404.	Opened CV-1404.	—	—	—
C	9. Close decay heat cooler E-35A outlet valve CV-1428.	Closed CV-1428.	—	—	—

C	PERFORMANCE CHECKLIST	STANDARDS	N/A	SAT	UNSAT
C	10. Position E-35A Cooler Bypass (CV-1433) to ~ 50% as indicated on HIC-1433.	Positioned CV-1433 to ~ 50% open.	—	—	—
C	11. Open Decay Heat Block Valve CV-1401	Opened CV-1401.	—	—	—
C	12. Start P-34A.	Started P-34A.	—	—	—
	13. Verify LPI/Decay Heat Pump Brg CLR E-50A Inlet (CV-3840) and Decay HT CLR Service Water E-35A Inlet (CV-3822) open.	On C-18, verified CV-3840 and CV-3822 open.	—	—	—
	14. Monitor pressurizer level.	Monitored pressurizer level on C04 or SPDS.	—	—	—
C	15. Adjust CV-1433 to establish decay heat removal flow at < 3500 gpm from P-34A and discharge pressure < 400 psig.	Adjusted DHR flow to <3500 gpm and discharge pressure < 400 psig using CV-1433.	—	—	—
<b>NOTE:</b> Inform examinee that it is not necessary to perform Part 2 of Supplement 3.					
	16. Verify LPI Room Cooler VUC-1A starts.	At panel C-19, verified VUC-1A started (red light on).	—	—	—
	17. Adjust the DECAY HEAT VORTEX WARNING SETPOINT.	Selected the U5 function of the SPDS computer and set KP34ALO just below the Decay Heat Pump motor current and adjusted KP34AHI just above the Decay Heat Pump motor current.	—	—	—

END



## JOB PERFORMANCE MEASURE

UNIT: 1 REV # 4 DATE: \_\_\_\_\_TUOI NUMBER: A1JPM-RO-RPS02SYSTEM/DUTY AREA: REACTOR PROTECTION SYSTEMTASK: REMOVE A CHANNEL OF RPS FROM MANUAL BYPASSJTA#: ANO1-RO-RPS-NORM-6KA VALUE RO: 3.6 SRO: 3.6 KA REFERENCE: 012 A4.03APPROVED FOR ADMINISTRATION TO: RO: X SRO: XTASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 15 MINUTESREFERENCE(S): 1105.001EXAMINEE'S NAME: \_\_\_\_\_ SSN        -        -       

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_  
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: The plant is operating at 100% power with ICS in auto-  
matic. The "A" RPS channel is in manual bypass for maintenance. The maintenance  
has been completed.

TASK STANDARD: The "A" RPS channel is removed from manual bypass.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

TASK PERFORMANCE AIDS: Manual bypass key, 1105.001

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

***SIMULATOR SETUP: Power operations, place "A" RPS in manual bypass, select SASS Neutron Flux selector to the "Y" position.***

TUOI NUMBER: ANO-1-JPM-RO-RPS02

INITIATING CUE:

The SM/CRS directs you to remove the "A" RPS channel from manual bypass per section 11.0 of 1105.001, NI & RPS Operating Procedure.

CRITICAL ELEMENTS (C): 2

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
<b>NOTE: Due to the uniqueness of the design in the simulator, all channel indications are located in one RPS cabinet.</b>					
	1. Verify "A" RPS channel is reset.	<p>Inside the RPS cabinet in the back of the control room:</p> <p>a) Verified all test modules are in "operate" with the On Test lamps ON dim.</p> <p>b) Depressed and released the Output State and Output Memory Reset switches for all bistables with Output State and/or Output Memory lamps ON bright.</p> <p>c) Verified the Building Pressure contact buffer is reset (both Input State lamps OFF).</p> <p>d) On the Channel A Reactor Trip Module, placed Subsystem Reset switch to down position.</p> <p>e) Verified the Subsystem No. 1 lamps ON dim for Reactor Trip modules and Cabinet Indicating Panels on all RPS Channels.</p>	_____	_____	_____
(C)	2. Turn Manual Bypass key switch out of bypass position.	<p>On the Reactor Trip Module in "A" RPS, turned keyswitch out of bypass position.</p> <p>Reactor Trip Module did NOT trip (verifies previous step properly performed).</p>	_____	_____	_____
	3. Verify Manual Bypass lamps ON dim.	On the Reactor Trip module and indicating panel, verified the Manual Bypass lamps are ON dim.	_____	_____	_____

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	4. Verify annunciator K08-D3 clear.	Verified that annunciator K08-D3 RPS CHANNEL BYPASSED is clear.	_____	_____	_____
	5. Verify "A" EFIC channel Maintenance Bypass light ON solid.	Verified "A" EFIC channel Maintenance Bypass light ON solid on the upper right of the "A" EFIC cabinet.	_____	_____	_____
	6. Remove Manual Bypass key from Reactor Trip module and return to Shift Mgr.	Removed Manual Bypass key from Reactor Trip module and returned to Shift Mgr.	_____	_____	_____
	7. Verify <1% difference between NI-5/NI-6 high and NI-7/NI-8 high.	Used panel readings on C03 or plant computer points N1I56HI and N1I78HI to determine the difference between the highest of NI5/NI6 is <1% different from the highest of NI7/NI8.	_____	_____	_____
	8. Return the SASS Neutron Flux selector switch to SASS Enable.	On C03, the SASS Neutron Flux switch is placed in the SASS Enable position after the signals (N1I56HI and N1I78HI) had been compared.	_____	_____	_____

**END**

## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

- The plant is operating at 100% power with ICS in automatic.
- The "A" RPS channel is in manual bypass for maintenance.
- The maintenance has been completed.

### **INITIATING CUE:**

The SM/CRS directs you to remove the "A" RPS channel from manual bypass per section 11.0 of 1105.001, NI & RPS Operating Procedure.

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 1 Date: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO- EOP11

System/Duty Area: Emergency and Abnormal Operations

Task: Perform Actions during ESAS Actuation to swap ECCS suction to RB sump (ALTERNATE PATH JPM)

JA# ANO1-RO-

KA Value RO 4.0 SRO 3.8 KA Reference 006.A4.02

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☒ Outside CR: ☐ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate):

Plant Site: \_\_\_\_\_ Simulator: \_\_\_\_\_ Perform X Lab: \_\_\_\_\_

Position Evaluated: RO: \_\_\_\_\_ X SRO: \_\_\_\_\_ X

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: \_\_\_\_\_ Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: \_\_\_\_\_ 20 Minutes

Reference(S):

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

ESAS has actuated due to a LOCA. RCS pressure is  $\leq 50$  psig. All unnecessary people have been evacuated from the Aux Building. Aux Spray has been aligned from LPI system. BWST level is at ~ 6 feet, BWST LO and LO LO annunciators are in alarm.

**TASK STANDARD:**

LPI and RB Spray pumps operating with their suctions aligned to the RB sump and BWST outlet valves closed (i.e. CV-1405/1406 open AND CV-1407/1408 closed).

**TASK PERFORMANCE AIDS:**

RT15 from 1202.012, change 004-02-0.

**SIMULATOR SETUP:**

IC2, then insert large RCS leak so that full ESAS actuation occurs. Trip all RCPs and go to reflux boiling setpoint for EFW. Close CV-1000 and CV-1009. Close CV-2415 and CV-2419 (CFT Outlets). Secure HPI pumps, close all HPI block valves, close CV-1206. Secure EFW-- P-7B in P-T-L, close CV-2613/CV-2663 in manual, close MFIVs and MSIVs. Throttle RB Spray to 1050-1200 gpm. Fail CV-1405 closed.

INITIATING CUE: The CRS/SM directs you to shift to RB sump suction using RT-15.

CRITICAL ELEMENTS (c): 9, 10, 11, 12

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	1. Verify both LPI pumps running (P34A and B).	On C16 and C18, operator verifies RED lights ON and GREEN lights OFF for both P34A and P34B.	—	—	— —
	2. Verify LPI Room Coolers running: VUC1A or VUC1B <u>AND</u> VUC1C or VUC1D.	On C19, operator verifies RED lights ON and GREEN lights OFF for VU1CA and VU1CC.	—	—	— —
	3. Verify both LPI Block valves fully open (CV-1400 and CV-1401).	On C16 and C18, operator verifies valves are open with RED lights ON and GREEN lights OFF for CV-1400 and CV-1401.	—	—	— —
	4. Verify Letdown isolated by CV-1221 closed on C16 <u>or</u> CV-1214/CV-1216 closed on C18.	On C-16, operator verifies letdown isolated by observing CV-1221 closed with the GREEN light ON and RED light OFF  <u>or</u> on C-18, operator verifies letdown isolated by observing CV-1214/CV-1216 closed with the GREEN lights ON and RED lights OFF.	—	—	— —
	5. Verify both Decay Heat Supply to Makeup Pump Suctions open (CV-1276 and CV-1277).  <b>NOTE: valves will be shut when examinee gets to this step, after examinee goes to open on these valves give the POSITIVE CUE.</b>	Operator Opens CV1276 and CV-1277 on panels C16 and C18 and observes Red lights ON, green lights OFF.	—	—	— —
	6. Verify RB Spray flow throttled to maintain 1050-1200 gpm per train.	Operator verifies that RB Spray flow is throttled to maintain 1050-1200 gpm per train (as indicated on SPDS, C16/C18 or recorder on C14, approximately 1150 gpm indicated flow on each train)	—	—	— —



C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>7. If NaOH Tank T10 level is <math>\leq 25</math> ft, <u>THEN</u> close RB spray NaOH Addition T-10 Outlets (CV-1616 and CV-1617).</p> <p><i>NOTE: if this JPM is being simulated, tell examinee that T10 level is 20 ft then give POSITIVE CUE after examinee goes to close on the valves.</i></p>	Operator Closes CV-1616 and CV-1617 <u>IF</u> T-10 level is $\leq 25$ ft and observes GREEN lights ON and RED lights OFF.			
	8. Verify RB Sump Outlets open (CV-1414 and CV 1415).	On C16 and C18, operator verifies CV-1414 and CV-1415 open with RED lights ON and GREEN lights OFF.			
<b>NOTE: This is the alternate path portion of the JPM. The RB sump outlet valve CV-1405 will fail to open.</b>					
C	9. Open RB Sump Outlets (CV-1405 and CV-1406).	<p>On panel C16 operator <b>attempts</b> to open CV-1405 (it will not open) and observes the GREEN light ON and RED light OFF for it.</p> <p>On panel C18, operator opens CV-1406 and observes RED light ON and GREEN light OFF for it.</p> <p><b>See note: This is the Alternate Path step for the JPM</b></p>			
C	10. Stop associated LPI, HPI, and RB Spray pumps, which includes: RB Spray pump P-35A LPI pump P-34A	On C-16 and C-18, operator secures LPI pump P-34A AND secures RB Spray pump P-35A. (HPI is already secured) and observes GREEN lights ON and RED lights OFF.	—	—	— —
C	11. Take manual control of BWST outlets CV-1407 and CV-1408.	On C16 and C18, operator depresses the manual pushbutton on each of two AUTO/MANUAL pushbuttons for CV-1407 and CV-1408 in MANUAL and observes WHITE light ON and RED light OFF for each.	—	—	— —
C	12. Close BWST Outlets (CV-1407 and CV-1408).	On C16 and C18, operator verifies GREEN lights ON and RED lights OFF for closed valves CV-1407 and CV-1408.			

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	13. Check LPI/RB Spray flow is maintained.	Checked proper LPI/RB Spray flow is being maintained by observing SPDS or meters on C16/C18 or recorder on C14 with values for spray @ 1100 gpm, LPI @ 3000 gpm.			
	14. Notify HP to monitor BWST suction line for indication of back-leakage from LPI suction.  <u>POSITIVE CUE:</u> HP has been notified.	Notified Health Physics.			
<b><i>Instructor Note: INFORM EXAMINEE THAT MAKEUP TANK LEVEL IS STEADY AT 50 INCHES.</i></b>					
	15. <u>IF</u> NaOH Tank T10 Level >25 ft, <u>THEN</u> open CV-1616 and CV-1617.  <i>NOTE: If being simulated tell examinee that T10 level is 20 ft which will make this step (14 and 14.a) N/A.</i>  a) <u>WHEN</u> T10 level is 11-25 ft, <u>THEN</u> close CV-1616 and CV-1617.	Opened CV-1616 and CV-1617 <u>IF</u> T10 level >25 ft.  a) Closed CV-1616 and CV-1617 after T10 level is in range of 11-25 ft.			
<b><i>INFORM EXAMINEE THAT RB LEVELS HAVE STABILIZED AND BWST REFILL HAS BEEN INITIATED.</i></b>					
<b><i>INSTRUCTOR CUE: This concludes the JPM.</i></b>					

END

## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

ESAS has actuated due to a LOCA. RCS pressure is  $\leq 50$  psig. All unnecessary people have been evacuated from the Aux Building. Aux Spray has been aligned from LPI system. BWST level is at ~ 6 feet, BWST LO and LO LO annunciators are in alarm.

### **INITIATING CUE:**

The CRS/SM directs you to shift to RB sump suction using RT-15.



## JOB PERFORMANCE MEASURE

UNIT: 1 REV # 1 DATE: \_\_\_\_\_TUOI NUMBER: A1JPM-RO-EDG04SYSTEM/DUTY AREA: EMERGENCY DIESEL GENERATOR (EDG) SYSTEMTASK: LOAD EDG1JTA#: ANO1-RO-EDG-NORM-10KA VALUE RO: 3.4 SRO: 3.4 KA REFERENCE: 064 A4.07APPROVED FOR ADMINISTRATION TO: RO: X SRO: XTASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: \_\_\_\_\_ SIMULATOR: PERFORM LAB: \_\_\_\_\_

POSITION EVALUATED: RO: \_\_\_\_\_ SRO: \_\_\_\_\_

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: \_\_\_\_\_ PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 15 MINUTESREFERENCE(S): 1104.036EXAMINEE'S NAME: \_\_\_\_\_ SSN        -        -       

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_  
SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

JPM INITIAL TASK CONDITIONS: EDG1 is running with its output breaker open and its  
service water inlet valve (CV-3806) open.

TASK STANDARD: EDG1 tripped by examinee after its load increases without operator  
control. ***This is an Alternate Success Path JPM.***

TASK PERFORMANCE AIDS: 1104.036 Section 7.0

***NOTE: When the EDG1 output breaker is closed, insert override DI CS3-DG1\_R02; true and CS3-DG1\_W02; false which will fail the governor handswitch in the raise position; this will cause the EDG load to rise without control.***

## INITIATING CUE:

The SM/CRS directs you to parallel EDG1 to the grid and load EDG1 to ~2750 KW per 1104.036 Step 7.10.

CRITICAL ELEMENTS (C): 2, 6, 7

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
	1. Inform dispatcher that EDG1 will be loaded and inquire about weather.	Called the dispatcher, informed him/her that EDG1 is ready for loading and asked about proper weather conditions.	_____	_____	_____
(C)	2. Turn on synchronize switch for EDG1 output breaker A-308.	On C10, placed synchronize switch for A-308 to ON position.	_____	_____	_____
	3. Verify voltage control.	Verified voltage control by raising and/or lowering voltage using the EDG1 voltage regulator control switch on C10.	_____	_____	_____
	4. Verify frequency control.	Verified frequency control by raising and/or lowering frequency by using the EDG1 governor control switch on C10.	_____	_____	_____
	5. Match running and incoming voltages.	On C10, matched running and incoming voltages by adjusting EDG1 voltage regulator.  NOTE: Voltages may be verified matched on C10 or SPDS or on plant computer.	_____	_____	_____
(C)	6. Adjust EDG1 frequency.	On C10, adjusted EDG1 governor control to achieve ~60 hz with synchroscope rotating slowly in the FAST direction.	_____	_____	_____

**NOTE: IA Operator → When the EDG1 output breaker is closed, insert override DI CS3-DG1\_RO2; true and DI CS3-DG1\_W02; false which will fail the governor handswitch in the raise position, this will cause the EDG load to rise without control.**

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	7. As synchroscope approaches 12 o'clock position (~5 min. 'til) close EDG1 output breaker A-308.	Closed EDG1 output breaker A-308.	_____	_____	_____
(C)	8. Operator identifies increasing load and trips the EDG.	On C10, tripped EDG1.	_____	_____	_____

**END**



## **EXAMINEE'S COPY**

### **INITIAL CONDITIONS:**

EDG1 is running with its output breaker open and its service water inlet valve (CV-3806) open.

### **INITIATING CUE:**

The SM/CRS directs you to parallel EDG1 to the grid and load EDG1 to ~2750 KW per 1104.036 Step 7.10.

## JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-ED030

Page 1 of 5

UNIT: 1 REV # 0 DATE: \_\_\_\_\_

TUOI NUMBER: A1JPM-RO-ED030

SYSTEM/DUTY AREA: BATTERY AND 125V DC DISTRIBUTION

TASK: PLACE BATTERY CHARGER D-03B IN SERVICE

JTA#: ANO1-AO-125DC-NORM-12

KA VALUE RO: 3.9 SRO: 3.4 KA REFERENCE: 2.1.30

APPROVED FOR ADMINISTRATION TO: RO: X SRO: X

TASK LOCATION: INSIDE CR: X OUTSIDE CR: \_\_\_\_\_ BOTH: \_\_\_\_\_

SUGGESTED TESTING ENVIRONMENT AND METHOD (PERFORM OR SIMULATE):

PLANT SITE: X SIMULATOR: \_\_\_\_\_ LAB: \_\_\_\_\_

POSITION EVALUATED: RO: X SRO: X

ACTUAL TESTING ENVIRONMENT: SIMULATOR: \_\_\_\_\_ PLANT SITE: \_\_\_\_\_ LAB: \_\_\_\_\_

TESTING METHOD: SIMULATE: X PERFORM: \_\_\_\_\_

APPROXIMATE COMPLETION TIME IN MINUTES: 20 MINUTES

REFERENCE(S): 1107.004

EXAMINEE'S NAME: \_\_\_\_\_ SSN        -        -       

EVALUATOR'S NAME: \_\_\_\_\_

THE EXAMINEE'S PERFORMANCE WAS EVALUATED AGAINST THE STANDARDS  
CONTAINED IN THIS JPM AND IS DETERMINED TO BE:

SATISFACTORY: \_\_\_\_\_ UNSATISFACTORY: \_\_\_\_\_

PERFORMANCE CHECKLIST COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time

SIGNED \_\_\_\_\_ DATE: \_\_\_\_\_

SIGNATURE INDICATES THIS JPM HAS BEEN COMPARED TO ITS APPLICABLE PROCEDURE BY A  
QUALIFIED INDIVIDUAL (NOT THE EXAMINEE) AND IS CURRENT WITH THAT REVISION.

## **JOB PERFORMANCE MEASURE**

TUOI: A1JPM-RO-ED030

Page 2 of 5

### **EXAMINEE'S COPY**

#### **JPM INITIAL TASK CONDITIONS:**

- Battery Charger D-03A is in service on Bus D01.

#### **INITIATING CUE:**

The Shift Manager requests you to place Battery Charger D-03B in service on Bus D01 and remove Battery Charger D-03A from service per 1107.004, Battery and 125V DC Distribution, Attachment B.

## JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-ED030

Page 3 of 5

### THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:** \_\_\_\_\_

Battery Charger D-03A is in service on Battery D01. \_\_\_\_\_

**TASK STANDARD:** IAW 1107.004, Att. B, examinee places charger D-03B in service, removes D-03A from service, and performs actions for D-03A DC output voltage drifting to zero. \_\_\_\_\_

**THIS IS AN ALTERNATE SUCCESS PATH JPM.** \_\_\_\_\_

**TASK PERFORMANCE AIDS:** 1107.0004 Attachment B \_\_\_\_\_

\_\_\_\_\_

## JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-ED030

Page 4 of 5

### INITIATING CUE:

The Shift Manager requests you to place Battery Charger D-03B in service on Bus D01 and remove Battery Charger D-03A from service.

**CRITICAL ELEMENTS (C)** \_\_\_\_\_ 5, 6, 8, 9, 12, 14, 16 \_\_\_\_\_

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
<b>TRANSITION NOTE:</b> Proceed to El. 372' in Auxiliary Building off Corridor 98 to Rm. 109, DC Equipment Room.					
	1. Verify breakers open for charger D-03B. <ul style="list-style-type: none"> <li>AC Input breaker</li> <li>DC Output breaker</li> </ul>	On front of charger D-03B, verified the AC Input and DC Output breakers open (OFF).	_____	_____	_____
<b>TRANSITION NOTE:</b> Proceed to MCC B57 in South ES Switchgear Room on the same elevation.					
	2. Verify AC feeder breaker to charger D-03B closed (B-5733).	Verified breaker B-5733 closed (ON).	_____	_____	_____
<b>TRANSITION NOTE:</b> Return to DC Equipment Room.					
<b>In the following step, Caution the examinee not to break plane of cubicle door.</b>					
	3. Verify charger D-03B supply to bus breaker closed (D01-42).	Inside panel D01, verified breaker D01-42 closed (ON).	_____	_____	_____
	4. Verify Manual Disconnect for battery D-07 closed (D-13).	At D13, verified manual disconnect for battery D07 closed (ON).	_____	_____	_____
(C)	5. Close D-03B AC Input breaker.	On front of charger D-03B, closed the AC Input breaker (ON).	_____	_____	_____
(C)	6. Close D-03B DC Output breaker.	On front of charger D-03B, closed the DC Output breaker (ON).	_____	_____	_____
	7. Wait ~1 minute for automatic load sharing to occur.  CUE: Amps are rising on D-03B and amps are falling on D-03A.	Waited ~1 minute, observed rising amps on D-03B and falling amps on D-03A.	_____	_____	_____
(C)	8. Open D-03A DC Output breaker.	On front of charger D-03A, opened the DC Output breaker (OFF).	_____	_____	_____

## JOB PERFORMANCE MEASURE

TUOI: A1JPM-RO-ED030

Page 5 of 5

(C)	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UNSAT
(C)	9. Open D-03A AC Input breaker.	On front of charger D-03A, opened the AC Input breaker (OFF).	_____	_____	_____
	10. Check Charger D-03B picks up load.  CUE: <ul style="list-style-type: none"> <li>• D-03B DC Out ~100 amps</li> <li>• AC In ~30 amps</li> <li>• D01 bus voltage 130V</li> <li>•</li> </ul>	At charger D-03B checked ammeter deflected to a nominal value, and at D01 checked bus voltage maintained at ~130 volts.	_____	_____	_____
	11. Reset local alarm panel for Charger D-03B.	At charger D-03B, pressed "R" button on RIS panel.	_____	_____	_____
(C)	12. Place D-03B alarm to control room toggle switch ON.	At charger D-03B, placed control room alarm switch to ON (up).	_____	_____	_____
	13. Place D-03A alarm to control room toggle switch OFF.	At charger D-03A, placed control room alarm switch to OFF (down).	_____	_____	_____
	14. Check annunciator D01 CHARGER TROUBLE (K01-E7) clears.	Called control room and requested check for clear annunciator K01-E7.	_____	_____	_____
<b>ALTERNATE PATH CUE:</b> Inform examinee that D-03A DC Output Voltage drifted to zero, also inform examinee that one minute has passed since D-03A was de-energized.					
(C)	15. Close D-03A AC Input breaker.	On front of charger D-03A, closed the AC Input breaker (ON).	_____	_____	_____
	16. Check D-03A DC output voltage and AC input voltage.  CUE: <ul style="list-style-type: none"> <li>• DC Output Voltage ~90V</li> <li>• AC Input Voltage ~480V</li> </ul>	On charger D-03A, observed DC output voltage and AC input voltage meters.  Examinee stated that he would contact electrical maintenance for support.	_____	_____	_____
(C)	17. Open D-03A AC Input breaker.	On front of charger D-03A, opened the AC Input breaker (OFF).	_____	_____	_____
	18. Submit condition report and WR.	Examinee stated that he would submit a condition report and Work Request or Work Order on D-03A.	_____	_____	_____

**END**

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 4 Date: 11/04/2003

TUOI NUMBER: A1JPM-RO- AOP08

System/Duty Area: Emergency and Abnormal Operations

Task: RO #1 Duties for Alternate Shutdown with immediate Control Room evacuation

JA# 13035210401

KA Value RO 4.3 SRO 4.2 KA Reference A06.AA1.1

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☐ Outside CR: ☒ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate): Simulate

Plant Site: Perform Simulator: \_\_\_\_\_ Lab: \_\_\_\_\_

Position Evaluated: RO: X SRO: X

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: X Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: 20 Minutes

Reference(S): OP 1203.002 change 015-05-0

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

There is a Fire in the Cable Spreading Room. An Alternate Shutdown is in progress. At the Alternate Shutdown Cabinet, you have received a copy of OP 1203.002 and Section 1C. Perform to step 3.14 of applicable section.

**TASK STANDARD:**

RO#1 perform actions for alternate shutdown completed through step 3.14.

**TASK PERFORMANCE AIDS:**

OP 1203.002 and Section 1C, change 015-05-0.

**SIMULATOR SETUP:**

N/A



INITIATING CUE: The first 3 steps of OP 1203.002 Section 1C have been completed. Perform the actions required of RO #1 through step 3.14.

CRITICAL ELEMENTS (c): 1, 7, 9, 11, 12, and 13

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
C	<p>1. At The MSIV's, open the instrument air vent valves for each MSIV (IA-2691B through E and IA-2692B through E).</p> <p><u>POSITIVE CUE:</u> All 8 vent valves have stem full out, with each valve's handwheel fully CW.</p>	Opened instrument air vent valves IA-2691B through E and IA-2692B through E.	—	—	—
	<p>2. Verify CV-2667 open.</p> <p><u>POSITIVE CUE:</u> CV-2667 has stem full out, with the valve handwheel fully CW.</p>	CV-2667 verified open by visually observing stem or valve position indicator.	—	—	—
	<p>3. Verify CV-2617 open.</p> <p><u>POSITIVE CUE:</u> CV-2617 has stem full out, with the valve handwheel fully CW.</p>	CV-2617 verified open by visually observing stem or valve position indicator.	—	—	—
	<p>4. Verify CV-2663 open.</p> <p><u>POSITIVE CUE:</u> CV-2663 has stem full out, with the valve handwheel fully CW.</p>	CV-2663 verified open by visually observing stem or valve position indicator.	—	—	—
	<p>5. Verify CV-2613 open.</p> <p><u>POSITIVE CUE:</u> CV-2613 has stem full out, with the valve handwheel fully CW.</p>	CV-2613 verified open by visually observing stem or valve position indicator.	—	—	—
	<p>6. Notify TSC of completion</p> <p><u>POSITIVE CUE:</u> TSC notified of completion of actions</p>	Communicated via phone or radio the Completion of Item 1.A	—	—	—
EXAMINER'S NOTE: The examinee should proceed to the Auxiliary Building 354' elevation.					
C	<p>7. Proceed to Aux Bldg, 354'. Slowly open CV-1407 manually</p> <p><u>POSITIVE CUE:</u> Valve has stem full out, with the valve handwheel fully CW.</p>	Used manual lever and handwheel, fully opened CV-1407.	—	—	—

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>8. Check for flow noise as CV-1407 is opened.</p> <p><u>POSITIVE CUE:</u> No flow noise is heard.</p>	Checked for flow noise as CV-1407 was opened.	_____	_____	_____
EXAMINER'S NOTE: The examinee should proceed to the UNPPR.					
C	<p>9. Manually open CV-1219 and CV-1220. Close CV-1206</p> <p><u>POSITIVE CUE:</u> CV1219 and CV1220 have stems full out, with the valve's handwheels fully CW, CV1206 has stem full in, with the valve handwheel fully CCW.</p>	Opened CV-1219, CV-1220, closed CV-1206 with manual lever and handwheel, verified valve movement	_____	_____	_____
	<p>10. Notify TSC of completion</p> <p><u>POSITIVE CUE:</u> TSC notified of completion of actions</p>	Established communication with TSC telephone or radio, notified of action HPI Item 5.A, 5.B,	_____	_____	_____
<p><u>EXAMINER'S NOTE:</u> When TSC is notified have examinee throttle EFW P-7A to SG-A ISOL, CV-2627 to approximately 50 % open.</p>					
C	<p>11. Close CV-2627 to approximately 50% open.</p> <p><u>POSITIVE CUE:</u> CV-2627 has stem approximately halfway out.</p>	Moved to CV-2627, and used the manual lever and hand wheel to close CV-2627 to approximately to 50% open.	_____	_____	_____
EXAMINER'S NOTE: Inform examinee that EFW flow is controlled.					
C	<p>12. Open valves: EFW P-7B to SG-A ISOL (CV-2670) "B" HPI Block Valve (CV-1227) "A" HPI Block Valve (CV1228)</p> <p><u>POSITIVE CUE:</u> CV-2670, CV-1227, CV-1228 have stems full out, with each valve's handwheel fully CW.</p>	Opened EFW P-7B to SG-A ISOL (CV-2670), "B" HPI Block Valve (CV-1227), and "A" HPI Block Valve (CV1228) using manual handwheel and clutch lever.	_____	_____	_____
TRANSITION NOTE: The examinee should proceed to the 354 elevation waste gas room.					
C	<p>13. Slowly open BWST Outlet CV-1408.</p> <p><u>POSITIVE CUE:</u> CV-1408 has stem full out, with the valve handwheel fully CW.</p>	Opened CV-1408 using clutch lever and manual handwheel.	_____	_____	_____

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>14. Check for flow noise as CV-1408 is opened.</p> <p><u>POSITIVE CUE:</u> No flow noise is heard.</p>	<p>Checked for flow noise as CV1408 was opened.</p>	_____	_____	_____
TRANSITION NOTE: The examinee should proceed to the 335 elevation letdown filter area.					
	<p>15. Verify service water header pressure &gt;40 psig.</p> <p><u>POSITIVE CUE:</u> Service water pressure is 50 psig.</p> <p><u>NEGATIVE CUE:</u> Service water pressure is 0 psig.</p>	<p>Opened RB Coolers VCC-2C &amp; 2D PI-3813A ISOL SW-3813A and verified pressure &gt;40 psig.</p>	_____	_____	_____
	<p>16. Establish communications with the TSC and report completion of steps.</p> <p><u>POSITIVE CUE:</u> All steps have been reported to TSC.</p> <p><u>NOTE:</u> Provide the cue for steps missed.</p> <p><u>NEGATIVE CUE:</u> Step 1 RCS is overcooling due to high steam flow.</p> <p>Step 9. A OTSG level is going up rapidly.</p> <p>Step 7, 10b or c, 11. Unable to establish HPI flow.</p>	<p>Operator Calls TSC via radio or telephone and reports completion of steps 2.B, 6.A, 6.B, 7.B.</p>	_____	_____	_____
<b>INSTRUCTOR CUE: This concludes the JPM.</b>					

END

**EXAMINEE'S COPY**

**INITIAL CONDITIONS:**

There is a Fire in the Cable Spreading Room. An Alternate Shutdown is in progress. At the Alternate Shutdown Cabinet, you have received a copy of OP 1203.002 and Section 1C.

**INITIATING CUE:**

The first 3 steps of OP 1203.002 Section 1C have been completed. Perform the actions required of RO #1 through step 3.14.

JOB PERFORMANCE MEASURE

Unit: 1 Rev # 10 Date: 11/04/2003

TUOI NUMBER: A1JPM-RO- EFW01

System/Duty Area: Emergency Feedwater and EFIC

Task: Reset the Steam Driven Emergency Feedwater Pump after an overspeed trip

JA# ANO1-RO-EFW-NORM-13

KA Value RO 3.4 SRO 3.8 KA Reference 061 A2.04

Approved For Administration To: RO ☒ SRO ☒

Task Location: Inside CR: ☐ Outside CR: ☒ Both: ☐

Suggested Testing Environment And Method (Perform Or Simulate): Simulate

Plant Site: Perform Simulator: \_\_\_\_\_ Lab: \_\_\_\_\_

Position Evaluated: RO: X SRO: X

Actual Testing Environment: Simulator: \_\_\_\_\_ Plant Site: \_\_\_\_\_ Lab \_\_\_\_\_

Testing Method: Simulate: X Perform: \_\_\_\_\_

Approximate Completion Time In Minutes: 15 Minutes

Reference(S): 1106.006 Exhibit A, change 063-08-0.

Examinee's Name: \_\_\_\_\_ SSN: \_\_\_\_\_

Evaluator's Name: \_\_\_\_\_

The Examinee's performance was evaluated against the standards contained in this JPM and is determined to be:

Satisfactory: \_\_\_\_\_ Unsatisfactory: \_\_\_\_\_

Performance Checklist Comments:

Start Time \_\_\_\_\_ Stop Time \_\_\_\_\_ Total Time \_\_\_\_\_

Signed \_\_\_\_\_ Date: \_\_\_\_\_

Signature indicates this JPM has been compared to its applicable procedure by a qualified individual (not the examinee) and is current with that revision.

THE EXAMINER SHALL REVIEW THE FOLLOWING WITH THE EXAMINEE:

The examiner shall review the "Briefing Checklist - System Walkthrough" portion of OP 1064.023 Attachment 6 with the examinee.

**JPM INITIAL TASK CONDITIONS:**

P7A Emergency Feedwater Pump has tripped on overspeed during an EFIC actuation.

**TASK STANDARD:**

P7A turbine has been reset per 1106.006 Exhibit A.

**TASK PERFORMANCE AIDS:**

OP 1106.006 Exhibit A, change 063-08-0.

**SIMULATOR SETUP:**

N/A

INITIATING CUE: The SM/CRS directs you to reset P7A overspeed trip per 1106.006, Exhibit A.

CRITICAL ELEMENTS (c): 2, 3, and 8

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
<b>EXAMINER'S NOTE: Simulate communications with the Control Room.</b>					
	<p>1. Verify the following valves are closed. If EFW initiate signal is present, manual control is required.</p> <ul style="list-style-type: none"> <li>• EFW Pump Turbine K3 Steam Admission Valves (CV-2613 and CV-2663)</li> <li>• EFW Pump Turbine K3 Steam Admission Valve Bypasses (SV-2613 and SV-2663)</li> </ul> <p><u>POSITIVE CUE:</u> SV-2613, SV-2663, CV-2613, CV-2663 <b>have valve stems full out with handwheel's full CW.</b></p>	Called control room to verify SV-2613, SV-2663, CV-2613, CV-2663 are closed.	_____	_____	_____
C	<p>2. Turn EFW Turbine K3 Trip-Throttle Valve (CV-6601A) handwheel clockwise. Observe rotation of screw raises sliding nut and latch lever to where it will engage the trip hook.</p> <p><u>POSITIVE CUE:</u> Trip/ Throttle valve (CV-6601A) sliding nut raised and latch lever has engaged the trip hook.</p>	Trip/ Throttle valve (CV-6601A) handwheel turned clockwise until sliding nut rises and latch lever engages the trip hook.	_____	_____	_____
<b>EXAMINER'S NOTE: The following steps will reset the mechanical trip linkage.</b>					
C	<p>3. Pull spring-loaded connecting rod against spring force to move head lever away from tappet and tappet nut.</p> <p><u>POSITIVE CUE:</u> Head lever moved away from tappet and tappet nut.</p>	Connecting rod pulled against spring force to move head lever away from tappet and tappet nut.	_____	_____	_____
	<p>4. Lift and release tappet assembly</p> <p><u>POSITIVE CUE:</u> Tappet assembly lifted and released.</p>	Tappet assembly lifted and released.	_____	_____	_____
	<p>5. Verify tappet nut in trip reset position.</p> <p><u>POSITIVE CUE:</u> Tappet nut in trip reset position.</p>	Verified tappet nut in trip reset position.	_____	_____	_____

C	PERFORMANCE CHECKLIST	STANDARD	N/A	SAT	UN SAT
	<p>6. Observe tappet returns to reset position.</p> <p><u>POSITIVE CUE:</u> Tappet is in reset position.</p>	Observed tappet returns to reset position.	—	—	—
	<p>7. Verify the following:</p> <ul style="list-style-type: none"> <li>Tappet nut in trip reset position and properly aligned.</li> <li>Spring tension holds connecting rod in position.</li> </ul> <p><u>POSITIVE CUE:</u> Tappet nut in trip reset position and properly aligned. Spring tension is holding connecting rod in position.</p>	<p>Verified tappet nut in trip reset position and properly aligned.</p> <p>Verified spring tension holds connecting rod in position.</p>	—	—	—
C	<p>8. Slowly turn CV-6601A handwheel counterclockwise until valve is fully open.</p> <p><u>POSITIVE CUE:</u> CV-6601A <b>has valve stem full out with handwheel in the full CW position.</b></p>	CV-6601A fully opened.	—	—	—
	<p>9. Close valve (CV-6601A) 3/4 turn to prevent binding on heatup.</p> <p><u>POSITIVE CUE:</u> CV-6601A <b>as you see it.</b></p>	CV-6601A closed 3/4 turn.	—	—	—
<b>EXAMINER'S NOTE: Simulate communications with the Control Room.</b>					
	<p>10. Verify P-7A TURBINE TRIP (K12-B5) clear.</p> <p><u>POSITIVE CUE:</u> P-7A TURBINE TRIP (K12-B5) clear</p>	Call Control Room and verified that P-7A TURBINE TRIP (K12-B5) is clear.	—	—	—
	<p>11. Notify Control Room that P-7A is ready for restart.</p> <p><u>POSITIVE CUE:</u> Control Room notified that P-7A is ready for restart.</p>	Control Room notified that P-7A is ready for restart.	—	—	—
<b>EXAMINER'S CUE: This concludes the JPM.</b>					

END



**EXAMINEE'S COPY**

**INITIAL CONDITIONS:**

P7A Emergency Feedwater Pump has tripped on overspeed during an EFIC actuation.

**INITIATING CUE:**

The SM/CRS directs you to reset P7A overspeed trip per 1106.006, Exhibit A.

Facility: ANO-1		Scenario No.: 1 (NEW)		Op-Test No.: 2004-1	
Page 1 of 10					
Examiners:				Operators:	
Initial Conditions: 100% MOL; Severe Thunderstorm Warning for Pope and Conway counties.					
Turnover:: National Weather service has issued a Severe Thunderstorm Warning for Pope and Conway Counties until 8:00 pm today. AOP 1203.025, Natural Emergencies, Section 2, High Winds/Tornado/Thunderstorm, steps 3.1 and 3.2 have been completed. #2 EDG OOS for fuel leak repairs. 1104.036 Supplement 11 is due right after turn-over.					
Event No.	Malf. No.	Event Type*	Event Description		
1	N/A	N (ALL)	Perform 1104.036 Supplement 11 for EDG #1		
2	TR568	I (BOR)	"A" OTSG operating level transmitter fails high		
3	CAE RX7460	I (BOT)	RB atmosphere radioactivity monitor fails low. TS 3.4.15 determination.		
4	N/A	R (BOR)	Dispatcher orders down power to 650 MWe due to weather that has damaged Mablevale sub-station.		
5	RX150	I (BOT)	Turbine EHC fails to respond in auto mode for ICS (manual control required)		
6	CV2692	C (BOR)	One MSIV for "B" OTSG drifts shut-requires manual reactor trip per EOP 1202.001		
7	MS131	M (ALL)	"A" OTSG steam leak in containment (MSLI activates). Transfer to 1202.003 overcooling if necessary.		
8	ES264 CV2214	I (BOT)	Containment pressure >4psig but "B" train RBIC will fail to actuate automatically and an ICW isolation valve will fail open that should shut. Operator will be required to manually initiate "B" RBIC and verify shut the redundant ICW valve to isolate ICW.		

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Page 2 of 10				
Event No.	Time	Malf. No.	Value/Ramp Time	Event Description
8	T=0	IMF ES264 IMF CV2214	N/A 1	"B" Train of Reactor Bldg. Isolation and Cooling fails to auto actuate (ESAS channel 6) ICW valve CV2214 fails to close upon ESAS actuation
1	T=0	N/A	N/A	Perform surveillance test of the #1 EDG for operability due to maintenance of #2 EDG.
2	T=~15	IMF TR568	292 / Ramp 3 Min.	"A" OTSG Operating Range Level Transmitter fails high.
3	T=20	CAE RX7460	N/A	RB Sump Radiation Monitor fails low (RX7460)
4	T=25	N/A	N/A	The dispatcher requests an emergency power reduction to ~650 MWe to maintain system integrity.
5	T=25.5	IMF RX150	N/A	Turbine EHC fails to respond.
6	T=30	IMF CV2692	0 / Ramp 1 Min.	"B" MSIV drifts shut requiring manual reactor trip.
7	T=35	IMF MS131	.4 / Ramp 3Min.	"A" OTSG Main Steam Line Leak inside containment.

Op-Test No: 2004-1      Scenario No: 1      Event No: 1      Page 3 of 10		
Event Description: Perform surveillance test of the #1 EDG for operability due to maintenance of #2 EDG.		
Time	Position	Applicants Actions or Behavior
T=0	CRS	Directs the performance of the #1 EDG surveillance test per Supplement 11 of 1104.036.
	CBOT	Make plant announcement of the starting of #1 EDG.
	CBOT	Verify DG1 Volts Select switch <b>NOT</b> in "OFF" on C10.
	CBOT	Simultaneously depress the START pushbutton for #1 EDG <u>and</u> start the stopwatch.
	CBOT	Stop the stopwatch when DG1 voltage exceeds 3750 volts.
	CBOT	Record the time from start to >3750 volts in section 3.0.
	CBOT	Verify service water to DG1 coolers (CV3806) opens and record verification in section 3.0.
	CBOT	Adjust the voltage and frequency within the acceptable operating bands.
	CBOT	Stop DG1 by depressing the STOP pushbutton.
	CBOT	Verify associated critical and non-critical alarms on K01 clear.
<b>EVENT TERMINATION CRITERIA</b>		
#1 EDG is stopped or Next Event		

Op-Test No: 2004-1		Scenario No: 1	Event No: 2	Page 4 of 10
Event Description: "A" OTSG Operating Range Level Transmitter fails high.				
Time	Position	Applicants Actions or Behavior		
T=15	CBOR	Acknowledge and report annunciator K07 B4, SASS MISMATCH.		
	CRS	Obtain Annunciator Corrective Action for K07 B4 for guidance.		
	CBOR	Acknowledge and report annunciator K07 A2, "A" OTSG Hi Level Limit.		
	CRS	Obtain Annunciator Corrective Action for K07 A2 for guidance.		
	CBOT	Observe/verify "A" Operating range level on C13 level recorder.		
	CRS	Direct the CBOR to place the "A" feed pump H/A station in "HAND" and stabilize plant.		
	CBOR	Place the "A" main feed pump H/A station in "HAND" and balanced feed flows.		
	CRS	Direct board operators to validate level transmitters by comparing to other (redundant) instruments.		
	CBOT/R	Determine the "A" OTSG operating level transmitter is failing high.		
	CRS	Verify plant stable and ICS in condition for instrument swap and direct the CBOR to select the other instrument.		
	CBOT	Verify the Operating Range Level for "A" is indicating properly on C13.		
	CRS	Direct placing ICS ("A" feed pump H/A station) back to "AUTO"		
<b>EVENT TERMINATION CRITERIA</b>				
ICS in "AUTO" or next event				

Op-Test No: 2004-1		Scenario No: 1	Event No: 3	Page 5 of 10
Event Description: RB atmosphere radioactivity monitor fails low.				
Time	Position	Applicants Actions or Behavior		
T=20	CBOR	Acknowledge and report annunciator K10 C1, Radiation Monitor Trouble.		
	CBOT	Observe monitors at C24 and C25 and determine that RX7460 has "FAILURE" lights "ON" and <b>BOTH</b> monitors, RI7460 and RI7461, are reading 0 CPM.		
	CRS	Refer to ACA 1203.012I for corrective action and guidance.		
	CRS	Determine RB Atmosphere Gaseous Monitor is inoperable and refer to <b>Tech Spec 3.4.15B.</b>		
	CRS	Initiate steps to meet requirements per Tech Specs.		
	CRS	Initiate steps to have the failed monitor checked and repaired.		
<b>EVENT TERMINATION CRITERIA</b>				
Tech Spec determination made				

Op-Test No: 2004-1		Scenario No: 1	Event No: 4 & 5	Page 6 of 10
Event Description: The Mablevale substation experiences storm damage causing the breakers in the switchyard supplying that line to open. The dispatcher requests an emergency power reduction to ~650 MWe to maintain system integrity. The Turbine fails to respond to lowering demand.				
Time	Position	Applicants Actions or Behavior		
<p style="text-align: center;"><b>ROLE PLAY</b></p> <p>Call control room as EOC Dispatcher and direct unit to reduce power to 650 MWe as soon as possible due to transformer damage at the Mablevale substation.</p> <p>If asked by control room personnel inform them that there is serious concern over grid stability due to the severe weather and substation damage.</p>				
T=25	CRS	Direct CBOR to reduce unit load to 650 MWe.		
	CRS	Direct operations per 1203.045, Rapid Plant Shutdown.		
	CBOR	Commence reduction in unit load to 650 MWe using the ULD.		
<b>NOTE:</b> Turbine may revert to Operator Auto mode before operator takes action.				
	CBOT/R	Recognize and report to the CRS that the turbine is not responding during the power reduction.		
<b>NOTE:</b> The crew may elect to place both the SG/RX master and the Turbine in the "MANUAL" mode. In this configuration, the CBOR controls the change in load demand and the CBOT will maintain turbine header pressure.				
	CRS	Direct the CBOT to place the turbine in "Operator Auto" or "Manual" mode and control steam header pressure.		
	CBOT	Take the turbine to manual or operator auto		
	CRS	Direct the CBOR to place the SG/RX Master H/A station in "HAND" and lower load to 650 MWe.		
	CBOR	Place the SG/RX master in "HAND" and slowly toggle down.		
continued				

Op-Test No: 2004-1		Scenario No: 1	Event No: 4 & 5	Page 7 of 10
Event Description: The Mablevale substation experiences storm damage causing the breakers in the switchyard supplying that line to open. The dispatcher requests an emergency power reduction to ~650 MWe to maintain system integrity. The Turbine fails to respond to lowering demand.				
Time	Position	Applicants Actions or Behavior		
<b>NOTE:</b> In the manual mode on the SG/RX master, the operator has control of the rate the plant will change. It is expected the operator will maintain the rate of change near the directed rate by the CRS.				
	CBOT	Verify Turbine EHC responds to lowering load and maintains header pressure at or near setpoint of 895#. (Operator Auto or Manual)		
<p style="text-align: center;"><u>ROLE PLAY</u></p> <p>If asked about PPAS information, report ICS signal to EHC good.</p>				
	CBOR	Stabilize load at ~650MWe. Power should be near 65-67%.		
<p style="text-align: center;"><b>EVENT TERMINATION CRITERIA</b></p> <p style="text-align: center;">Power reduction is complete <b><u>OR</u></b> the next event occurs</p>				



Op-Test No: 2004-1      Scenario No: 1      Event No: 6      Page 8 of 10		
Event Description: The "B" Main Steam Isolation Valve drifts shut, requiring a manual reactor trip per EOP 1202.001.		
Time	Position	Applicants Actions or Behavior
T=30	CBOR	Acknowledge and report annunciator K07 C6, Main Steam Pressure Hi/Lo in alarm.
	CRS	Refer to ACA 1203.012I for guidance.
	CBOR/T	Observe the "B" MSIV, CV2692, closing.
	CRS	Direct the CBOR to "TRIP" the reactor and "Carryout the immediate actions".
	CBOR	Trip the reactor by depressing the pushbutton on C03 and observing all control rods inserted and power dropping.
	CBOT	Manually trip the turbine by depressing the pushbutton on C01 and observing the throttle and governor valves close and output and exciter field breakers open.
	CBOR/T	Verify subcooling margin adequate.
	CRS	Provide direction to the crew per "Reactor Trip" EOP, 1202.001.
<p style="text-align: center;"><b>EVENT TERMINATION CRITERIA</b></p> <p style="text-align: center;">"B" MSIV closed and Reactor is tripped</p> <p style="text-align: center;"><b>OR</b></p> <p style="text-align: center;">As determined by the lead examiner.</p>		

Op-Test No: 2004-1		Scenario No: 1	Event No: 7 & 8	Page 9 of 10
Event Description: Main Steam Line rupture inside containment. Channel 6 of ESAS fails to auto actuate. ICW valve CV2214 fails to close.				
Time	Position	Applicants Actions or Behavior		
T=35	CBOR	Recognize "A" OTSG pressure dropping <b>OR</b> noticeably lower than "B" OTSG pressure.		
	CBOR	Monitor RB pressure and temperature.		
<p align="center"><b>NOTE:</b></p> <p>Due to rise in reactor building pressure and temperature, ESAS may actuate prior to the direction to trip the Reactor if CRS fails to recognize MSIV drifting shut in event 6 above.</p> <p>Annunciator K12A1 will alarm due to the environmental conditions inside the Reactor Building. If panel 463 is checked for location of the alarm, instruct that module A2-5 lower, RB UNEP ZONE 32-K, in alarm.</p>				
	CBOR/T	Identify and announce ESAS has actuated on high RB Pressure.		
	CRS	Transition to ESAS Procedure , EOP1202.010 and direct crew actions.		
	CRS	Direct the verification of ESAS per RT10.		
	CBOR/T	Recognize failure of Channel 6 of ESAS to auto actuate. <b>Tech Spec 3.3.7A.</b>		
<b>CT</b>	CBOR	Manually actuate Channel 6 of ESAS using the button on C04.		
	CBOT	Identify and report failure of CV2214 to close.		
	CRS	Direct the CBOT to verify the redundant ICW valve on Channel 6, CV2215, closed.		
	CBOT	Verify actuation of ESAS per RT 10.		
	CREW	Recognize SG pressure $\leq$ 900#		
continued				

Op-Test No: 2004-1		Scenario No: 1	Event No: 7 & 8	Page 10 of 10
Event Description: Main Steam Line rupture inside containment. Channel 6 of ESAS fails to auto actuate. ICW valve CV2214 fails to close.				
Time	Position	Applicants Actions or Behavior		
	CRS	Transition to Overcooling Emergency Operating procedure (1202.003).		
<b>CT</b>	CBOT	Manually override and secure HPI as directed by the CRS and the Emergency Operating Procedure.		
	CBOR	Report "A" MSLI actuated. <b>EAL NUE 3.1 Uncontrolled OTSG Depressurization Resulting in MSLI Actuation</b>		
	CRS	Provide RT6 to CBOR to verify proper MSLI and EFW actuation and control.		
	CBOR	Verify proper MSLI and EFW actuation and control per RT6.		
	CBOR	Control RCS pressure within the limits of Figure 3 per RT14 using PZR heaters		
<p align="center"><b>EVENT AND SCENARIO TERMINATION CRITERIA</b></p> <p>RCS pressure and temperature stable with the "A" OTSG isolated, channel 6 of ESAS manually actuated, with the ICW flowpath isolated</p> <p align="center"><b>OR</b></p> <p align="center">As determined by the lead examiner.</p>				

Facility: ANO-1		Scenario No.: 2 (MOD)		Op-Test No.: 2004-1	
Page 1 of 11					
Examiners:				Operators:	
<p>Initial Conditions:          100% MOL, equilibrium Xenon, P4A and P4B in service (P4C down for maintenance).          Sluice gates SG-1, SG-2, and SG-4 open.</p>					
<p>Turnover:          100% power, MOL, equilibrium Xenon. Expected P4C return to service and restore normal line-up within next 2 hours. . #2 EDG is OOS to repair its governor (day 1 of 7 day LCO 3.8.1.B).</p>					
Event No.	Malf. No.	Event Type*	Event Description		
1	TR625	I (BOT)	"A" CFT-LT "LIS2416" fails low. SRO TS determination required.		
2	N/A	N (BOT)	Shift service water pump to P4A/P4C line-up, return P4B to standby		
3	TR051	I (BOR)	Selected PZR level transmitter fails high		
4	TR558	I (BOR)	"B" Main Feed flow transmitter drifts low slowly		
5	BAT P1B_vibes	C (BOR)	MFP "B" has excessive vibration.		
6	N/A	R (BOR)	Perform normal shutdown to repair MFP "B".		
7	ED183 DG175	M (ALL) C (BOT)	Loss of Offsite power, Rx trip. #1 EDG fails to auto start and pushbutton on C10 fails to start it. STATION BLACK-OUT		
8	CV2645	C (BOR)	EFW valve fails open to "A" OTSG, resulting in level being raised higher than EFIC controlled SP.		

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Page 2 of 11				
Event No.	Time	Malf. No.	Value/Ramp Time	Event Description
7&8	T=0	IMF DG175	N/A	#1 EDG fails to autostart
		IOR DI_DG1S	False	Pushbutton on C10 fails to start the EDG.
		ICM CV2645	1	EFW valve to the "A" OTSG fails open resulting in level being raised higher than the EFIC controlled setpoint.
1	T=2	IMF TR625	0 Ramp 0	"A" Core Flood Tank LT(LIS2416) fails low.
2	T=~10	N/A	N/A	Shift service water pumps to P4A/P4C line-up, return P4B to standby
3	T=20	IMF TR051	320 Ramp 2 Min.	PZR level transmitter (LT1001) fails to high
4	T=27	IMF TR558	1.0e06 Ramp 4 Min.	"B" Main Feed flow transmitter drifts low slowly
5	T=30	BAT P1B_vibes	N/A	Report that "B" Main Feed Pump has excessive vibration
6	T=~32	N/A	N/A	Perform normal shutdown to repair "B" MFP
7	T=40	IMF ED183	N/A	Loss of offsite power occurs. Reactor trip. STATION BLACKOUT

Op-Test No: 2004-1		Scenario No: 2	Event No: 1	Page 3 of 11
Event Description: "A" CFT Level transmitter (LIS2416) fails low.				
Time	Position	Applicants Actions or Behavior		
T=2	CBOR	Recognize and report that annunciator K10 C5, "A" CFT LEVEL HI/LO", in alarm.		
	CRS	Refer to ACA 1203.012I for corrective action.		
	CBOT	Diagnose LIS2416 failure after comparing level indications for T2A on C16 and C18.		
	CRS	Refer to Technical Specifications for applicability. ACA 1203.012I refers to TS 3.5.1 if actual level is high or low. Reference to the Technical Requirement Manual for instrumentation should be performed. <b>Technical Requirements Manual 3.3.5, Miscellaneous Instrumentation.</b> (Only one pressure and one level transmitter is required for operability)		
EVENT TERMINATION CRITERIA				
Next Event				

Op-Test No: 2004-1		Scenario No: 2	Event No: 2	Page 4 of 11
Event Description: Shift Service Water Pumps				
Time	Position	Applicants Actions or Behavior		
T~10	Role Play	Call as work week manager and report P4C is ready for operation and rotation of pumps can proceed as anticipated.		
	CRS	Direct shifting the service water pump configuration to P4A and P4C running and return P4B to standby status.		
	CBOT	Notify Chemistry of pump rotation so chemical injection can be appropriately aligned.		
	CBOT	Refer to Table 9.3 of 1104.029 to determine the service water alignment necessary for the pumps that will remain in service.		
	CBOT	Verify sluice gates aligned to supply water to the desired SW Pumps.		
	CBOT	Start P4C		
	CBOT	Stop P4B		
	CBOT	Notify the Outside AO to check for reverse rotation of P4B.		
	CBOT	Align service water system per Table 9.3		
	CBOR/T	Verify normal service water loop pressures.		
	CBOR/T	Monitor SW bay level, CW bay level, and bay differentials for proper operation of SW bay strainers.		
EVENT TERMINATION CRITERIA				
Service Water Pumps rotated and system aligned OR Next Event				

Op-Test No: 2004-1		Scenario No: 2	Event No: 3	Page 5 of 11
Event Description: PZR level transmitter (LT1001) fails to upscale				
Time	Position	Applicants Actions or Behavior		
T=20	CBOR	Recognize and report that PZR level indications are mismatched		
	CREW	Diagnose LT1001 failure <b>Tech. Spec. 3.3.15A</b>		
	CRS	Direct operations per 1203.015 Pressurizer Systems Failure, section 4.0.		
	CRS	Direct CBOR to select valid PZR level indicator for PZR level control.		
	CBOR	Select LT1002 to control PZR level control valve (CV-1235) using hand switch on upright section of C04.		
	CBOR	Verify CV-1235 opens to control PZR level at setpoint.		
EVENT TERMINATION CRITERIA				
Pressurizer level control is selected to LT1002 and PZR level control valve is controlling level in auto.				



Op-Test No: 2004-1      Scenario No: 2      Event No: 4      Page 6 of 11  
 Event Description: "B" Main Feed flow transmitter drifts low slowly

Time	Position	Applicants Actions or Behavior
T=27	CBOR	Acknowledge and report annunciator K07 B4, SASS MISMATCH.
	CBOR/T	Determine the cause of the alarm by scanning C03, C04, and C13 for SASS ENABLE light that is not illuminated. Identify the "B" MFW flow SASS Enable not illuminated.
	CBOR	Determine that SASS did not transfer to the "Y" instrument for control.
	CRS	Refer to ACA 1203.012F for corrective action and guidance.
	CRS	Direct the CBOR to place both FW pump H/A stations , and control rods in "MANUAL". (Reactor Demand or Diamond station to "MANUAL" is acceptable)
	CBOR	Place the BOTH MFW pump H/A stations to "MANUAL" and Reactor Demand or Diamond Station to "MANUAL".
	CRS	Direct the CBOR to stabilize the plant
	CBOR	Using the MFW pump H/A stations and control rods, balance feedwater flows and Tave to return to normal values.
	CRS	Direct the CBOT to compare failed instrument to the non-selected instrument using PMS.
	CBOT	Using PMS, verify the non-selected MFW flow is reading correctly.
	CRS	Direct the CBOR to select the "Y" MFW flow instrument for loop "B".
	CBOR	Select the "Y" instrument for loop "B" MFW flow.
continued		

Op-Test No: 2004-1		Scenario No: 2	Event No: 4	Page 7 of 11
Event Description: "B" Main Feed flow transmitter drifts low slowly				
Time	Position	Applicants Actions or Behavior		
NOTE: A caution placard on both C03 and C13 provides direction of selecting the associated "X" or "Y" MFW Temperature instrument when the MFW flow instrument is selected due to hard wired temperature compensation of the MFW flow instrument.				
	CRS	Direct the CBOT to select the "Y" MFW temperature instrument for loop "B" on C13.		
	CBOT	Select the "Y" MFW temperature instrument for loop "B".		
	CBOR	Place ICS in "AUTO" in accordance with 1105.004, ICS Operations.		
EVENT TERMINATION CRITERIA				
"B" Main Feedwater Flow "Y" instrument selected and ICS in "AUTO"				

Op-Test No: 2004-1		Scenario No: 2	Event No: 5 & 6	Page 8 of 11
Event Description: "B" Main Feedwater pump excessive vibration and power reduction to secure "B" MFW pump for repair.				
Time	Position	Applicants Actions or Behavior		
T=30	CBOR	Acknowledge and report annunciator K06 C3, "B" MFP TURB CONTROL SYS TROUBLE.		
	CRS	Refer to ACA 1203.012E for corrective action and guidance.		
	CBOR/T	Report vibration alarm on "B" MFP from OIT alarm panel OR TSI.		
	CRS	Direct AO to verify/confirm "B" MFP has excessive vibration.		
	CRS	Direct the CBOR and CBOT to perform a power reduction to approximately 40% power to secure the "B" MFP.		
	CBOR	Begin a power reduction to 40% power using the Unit Load Demand (ULD).		
EVENT TERMINATION CRITERIA				
Power reduction >10%				

Op-Test No: 2004-1		Scenario No: 2	Event No: 7 & 8	Page 9 of 11
Event Description: Loss of offsite power occurs. Reactor trip. #1 EDG fails to autostart and the pushbutton on C10 fails to start the EDG. STATION BLACKOUT. EFW valve to the "A" OTSG fails open resulting in level being raised higher than the EFIC controlled setpoint.				
Time	Position	Applicants Actions or Behavior		
T=40	CREW	Recognize loss of offsite power		
	CRS	Direct actions per the Reactor Trip Procedure, 1202.001.		
	CBOR	Manually trip the reactor by depressing the Rx. Trip pushbutton. Verify all rods on bottom and power dropping.		
	CBOT	Manually trip the turbine by depressing the Turbine Trip pushbutton		
	CBOR/ CBOT	Verify adequate subcooling margin.		
	CRS	Transition to the Degraded Power Emergency Operating Procedure (1202.007). Direct operations per 1202.007. <b>(Tech Spec. 3.8.1.G, AC Sources – Operating, Three or more required AC sources inoperable.)</b>		
	CBOT	Recognize the failure of #1 EDG to autostart		
	CBOT	Attempt to manually start #1 EDG using push-button on C10.		
	CRS	Transition to the Blackout Emergency Operating Procedure (1202.008) and direct operations. <b>(Tech Spec. 3.8.1.G, AC Sources – Operating, Three or more required AC sources inoperable.)</b>		
	CBOR	Verify EFW actuated and perform RT5		
	CRS	Dispatch AO to #1 EDG		
continued				

Op-Test No: 2004-1		Scenario No: 2	Event No: 7 & 8	Page 10 of 11
Event Description: Loss of offsite power occurs. Reactor trip. #1 EDG fails to autostart and the pushbutton on C10 fails to start the EDG. STATION BLACKOUT. EFW valve to the "A" OTSG fails open resulting in level being raised higher than the EFIC controlled setpoint.				
Time	Position	Applicants Actions or Behavior		
	CRS	Communicate with Unit 2 to make the AAC generator available for use by Unit 1.		
	CRS	Direct manual isolation of letdown and RCP seal return.		
	CBOR	Close CV1223 on C04.		
	CBOT	Place RCP seal Bleedoff alternate path to quench tank valves in CLOSED position on C13.		
	CRS	Dispatch the WCO to isolate letdown by manually closing CV1221 and isolating RCP seal return by manually closing CV1274.		
	CBOR	Close both MSIVs (CV2691 and CV2692) on C09.		
	CBOR	Report the EFW valve, CV2645 to the "A" OTSG, will not control and will not move in manual.		
CT	CBOR	Manually throttle CV2627 on C09 to establish approximately 280 gpm.		
	CRS	Direct the CBOT to place the AAC generator on the A3 bus utilizing O.P. 1107.002.		
INSTRUCTOR NOTE: Make the AAC generator available to the crew by performing the following;				
<b>RMF EDA901 TRUE</b>  Call as the Unit 2 CRS and report the AAC generator is available for loading the vital bus.				
CT	CBOT	Place the AAC generator on the A3 bus.		
continued				

Op-Test No: 2004-1		Scenario No: 2	Event No: 7 & 8	Page 11 of 11
Event Description: Loss of offsite power occurs. Reactor trip. #1 EDG fails to autostart and the pushbutton on C10 fails to start the EDG. STATION BLACKOUT. EFW valve to the "A" OTSG fails open resulting in level being raised higher than the EFIC controlled setpoint.				
Time	Position	Applicants Actions or Behavior		
	CRS	Transition back to the Degraded Power procedure (1202.007).		
CT	CBOR	Start P7B by releasing handswitch from Pull-to-lock and placing handswitch in the start position.		
	CRS	Direct the CBOR to establish EFW to both OTSGs using P7B.		
	CBOR	Verify EFW flow to the OTSGs.		
<p align="center"><b>EVENT AND SCENARIO TERMINATION CRITERIA</b></p> <p>Power restored to the A3 bus from the AAC generator and EFW re-established to both OTSGs from P7B  <u>OR</u>  as directed by the lead examiner.</p>				

Facility: ANO-1		Scenario No.: 3 (MOD)		Op-Test No.: 2004-1	
Page 1 of 10					
Examiners:				Operators:	
Initial Conditions: 90% power, equilibrium Xenon, MOL, #2 EDG SW valve fails to open on manual start.					
Turnover:: 90% power, MOL, equilibrium Xenon. AO routinely checking traveling screens due to mild shad run over past 24 hrs. System Engineering and Ops Management have discussed rotation of operating Makeup pumps. They will call control room when they want this evolution performed.					
Event No.	Malf. No.	Event Type*	Event Description		
1	IMF C5A	C (BOT)	Condenser Vacuum Pump C5A trips		
2	N/A	N (ALL)	Shift running make up pumps from P36B to P36C to equalize run times		
3	N/A	R (BOR)	Load dispatcher orders power increase to 100% due to grid loading.		
4	TR458	I (BOR)	Controlling RCS pressure fails to 2280#		
5	IMF CV1008	C (BOR)	PZR spray valve leaks by after cycling		
6	IMF ED453	I (ALL)	SPDS failure		
7	IMF RC005	M (ALL)	SB LOCA		
8	IMF CV1400	C (BOR)	LPI injection valve CV1400 does not open.		
9	IMF ES259 IMF ES260	C (BOR)	ESAS channels 1, 2 fail to actuate at RCS pressure set point		

\* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Page 2 of 10				
Event No.	Time	Malf. No.	Value/Ramp Time	Event Description
8 & 9	T=0	IMF CV1400 IMF ES259 IMF ES260 IMF CV3807	0 Ramp 0 N/A  0 Ramp 0	LPI Block valve, CV1400, does not open. ES channels 1 and 2 fail to auto actuate  #2 EDG SW valve fails to open when EDG autostarts
1	T=2	IMF C5A	OFF	Condenser Vacuum Pump C5A trips
2	T=~10	N/A	N/A	Shift running Makeup Pumps
3	T=20	N/A	N/A	Load dispatcher orders power escalation to 100% due to grid loading.
4	T=25	IMF TR458	2280 Ramp 2 Min.	Controlling RCS pressure fails to 2280 psig
5	T=Spray valve closure	IMF CV1008	.12	PZR Spray Valve leaks through
6	T=30	IMF ED453	N/A	SPDS failure
7	T=35	IMF RC005	.007 R 0	Small Break LOCA into the Containment Building



Op-Test No: 2004-1		Scenario No: 3	Event No: 1	Page 3 of 10
Event Description: Condenser Vacuum Pump, C5A, trips.				
Time	Position	Applicants Actions or Behavior		
T=2	CBOR	Acknowledge and report annunciator K05 A3, Vacuum Pump Trip, alarm		
	CRS	Refer to ACA 1203.012D for corrective action and guidance.		
	CBOT	Verify C5A has tripped by observing pump status on C02.		
	CBOT	Manually start standby Vacuum Pump, C5B.		
	CRS	Initiate steps to determine cause of pump trip. Call AO to investigate.		
	CBOT	Monitor condenser vacuum for return to normal value.		
	CRS	If condenser vacuum lowers to $\leq 26.5$ " Hg, then go to Loss of Condenser Vacuum, 1203.016.		
	CBOT	IF DESIRED, place the hand switch for C5A in normal-after-stop or Pull-To-Lock to clear the alarm.		
<b>EVENT TERMINATION CRITERIA</b>				
C5B started and vacuum returned to normal OR Next Event				

Op-Test No: 2004-1	Scenario No: 3	Event No: 2	Page 4 of 10
Event Description: Shift Running Makeup pumps from P36B to P36C to equalize run times.			
Time	Position	Applicants Actions or Behavior	
T=10	CRS	Direct the CBOR and CBOT to shift makeup pumps by starting P36C and stopping P36B per 1104.002, Makeup and Purification System Operations Procedure.	
	CBOT	Start P64C, Aux. Lube Oil pump for P36C.	
	CBOT	After one minute of P64C operation, <b>Start</b> P36C.	
	CBOT	Stop P64C.	
	CBOT	Start P64B	
	CBOT	Stop P36B.	
	CBOR	Verify proper discharge pressure on C04 and/or SPDS.	
	CBOT	After one minute of P64B operation, <b>Stop</b> P64B.	
	CBOT	Change the pump status tags for the correct alignment.	
<b>EVENT TERMINATION CRITERIA</b>			
P36C running, P36B off			

Op-Test No: 2004-1		Scenario No: 3	Event No: 3	Page 5 of 10
Event Description: Power escalation to 100%.				
Time	Position	Applicants Actions or Behavior		
T=20	CRS	Direct the crew to continue power escalation to 100% at ~30/Hr.		
	CBOR	Begin power escalation by verifying the rate of change set at ~.5%/min. and raising the demand with the ULD station.		
	CBOT	Verify turbine load is rising and the turbine is maintaining header pressure at the desired setpoint.		
	CBOR	Verify Reactor power rising and feedwater flow rising to maintain proper Tave.		
<b>EVENT TERMINATION CRITERIA</b>				
Power returned to 100%				
OR				
Next Event				

Op-Test No: 2004-1		Scenario No: 3	Event No: 4 & 5	Page 6 of 10
Event Description: Controlling RCS pressure fails and PZR Spray Valve leaks through.				
Time	Position	Applicants Actions or Behavior		
T=25	CBOR	Identify and report a disparity between RCS pressure indications.		
NOTE: Crew may or may not identify the PZR Spray valve simultaneous with pressure indication failure.				
	CREW	Diagnose failed RCS pressure indication using panel indications, plant computer and SPDS. <b>(Tech. Spec. 3.3.1A)</b>		
	CBOR	If not identified earlier, report RCS pressure lowering and the pressurizer spray valve open.		
	CRS	Direct operation per 1203.015, PZR Systems Failures, Section 6		
	CBOR	Determine and report that the failed indication is controlling RCS pressure.		
	CBOR	Manually close the pressurizer spray valve, CV1008.		
	CBOR	Report RCS pressure continues to lower.		
	CRS	Direct the CBOR to close the pressurizer spray isolation, CV-1009.		
CT	CBOR	Close CV1009, Pressurizer Spray Valve Isolation.		
	CRS	Direct the CBOR to select the alternate RCS pressure indication for control.		
continued				

Op-Test No: 2004-1		Scenario No: 3	Event No: 4 & 5	Page 7 of 10
Event Description: Controlling RCS pressure fails and PZR Spray Valve leaks through.				
Time	Position	Applicants Actions or Behavior		
	CBOR	Select PT1038 using the handswitch on panel C04.		
	CRS	Reference 1203.015, Pressurizer Systems Failures, Pressurizer Spray Valve (CV-1008) Failure section. <b>(Tech Spec. TRM 3.4.3.A for differential temperature of spray fluid and pressurizer temperature of &gt;430°F)</b>		
	CBOR	Recognize and report that RCS pressure is recovering.		
<b>EVENT TERMINATION CRITERIA</b>				
Alternate RCS pressure instrument selected and Pressurizer Spray valve closed				
OR				
Next Event				

Op-Test No: 2004-1		Scenario No: 3	Event No: 6	Page 8 of 10
Event Description: SPDS Loss of Power.				
Time	Position	Applicants Actions or Behavior		
T=30	CREW	Recognize and report the failure of the SPDS displays in the control room on panels C09 and C19.		
	CRS	Contact Unit 2 or Computer Support to attempt to reboot the SPDS computers.		
	CRS	Refer to 1105.014, SPDS Operation, to determine that there is a one hour time limit to restore operation of at least one SPDS system <b>OR</b> it will become a reportable item.		
<b>EVENT TERMINATION CRITERIA</b>				
This event will exist for the remainder of the scenario.				

Op-Test No: 2004-1		Scenario No: 3	Event No: 7, 8, & 9	Page 9 of 10
Event Description: LOCA in the "A" RCS loop Tcold. ESAS channels 1 and 2 fail to auto actuate. #2 EDG service water valve fails to open when the EDG autostarts.				
Time	Position	Applicants Actions or Behavior		
T=35	CBOR	Identify pressurizer level and RCS pressure dropping.		
	CBOT	Recognize and report RCS leakage into the Reactor Building. <b>(Tech Spec. 3.4.13.B RCS Operational LEAKAGE)</b> <b>EAL 2.2, ALERT(RCS leakage &gt;Normal Makeup capacity)</b>		
	CRS	Direct actions per the Reactor Trip Procedure, 1202.001.		
	CBOR	Manually trip the reactor by depressing the Rx. Trip pushbutton. Verify all rods on bottom and power dropping.		
	CBOT	Manually trip the turbine by depressing the Turbine Trip pushbutton		
	CBOR/ CBOT	Verify adequate subcooling margin.		
	CRS	Direct initiation of HPI per RT 2.		
<p style="text-align: center;"><b>NOTE</b></p> <p>The crew may manually initiate ESAS due to the imminent automatic actuation prior to reaching the setpoint and therefore may not identify the failure of channel 1 and 2 to auto actuate.</p>				
	CREW	Recognize the actuation of ESAS on low RCS pressure.		
	CBOR	Identify the failure of channels 1 and 2 of ESAS to actuate.		
<b>CT</b>	CBOR	Manually initiate channel 1 and 2 from the pushbuttons on C04		
	CRS	Transition to ESAS procedure, 1202.010, and direct crew operations		
	CBOR	Check for adequate subcooling margin.		
continued				

Op-Test No: 2004-1		Scenario No: 3	Event No: 7, 8, & 9	Page 10 of 10
Event Description: LOCA in the "A" RCS loop Tcold. ESAS channels 1 and 2 fail to auto actuate. #2 EDG service water valve fails to open when the EDG autostarts.				
Time	Position	Applicants Actions or Behavior		
	CBOT	Verify proper ESAS actuation per RT 10.		
	CBOT	Identify the failure of the service water valve for the #2 EDG to open when the EDG autostarts.		
	CBOT	Attempt to open the service water valve for #2 EDG.		
	CRS	Direct the stopping of the #2 EDG.		
	CBOT	Stop the #2 EDG by placing the #2 EDG control switch in "LOCKOUT" position.		
	CBOR	Close or verify closed the following valves; CV-1008, CV-1009, and CV-1000		
	CRS	Transition to Loss of subcooling margin procedure, 1202.002, and direct crew actions.		
	CBOR	Control RCS pressure within limits of Figure 3 of EOP (RT 14)		
<p align="center"><b>EVENT and SCENARIO TERMINATION CRITERIA</b></p> <p align="center">All appropriate channels of ESAS actuated and HPI injecting water into RCS and RCS pressure stable. OR As directed by the lead examiner</p>				